



Future Shocks 2023

Anticipating and
weathering the
next storms

STUDY



EPRS | European Parliamentary Research Service
with the Directorates-General for Internal Polices (IPOL)
and External Policies (EXPO)

PE 751.428 – July 2023

EN

Future Shocks 2023

Anticipating and weathering the next storms

The European Parliament started monitoring future shocks during the coronavirus crisis, and has continued to do so during Russia's unprecedented war on Ukraine.

The annual 'Future Shocks' series reviews global risks, with a focus on specific risks and the capabilities and resilience of the EU system in the face of multiple challenges. It seeks to provide up-to-date, objective and authoritative information on these risks, based on risk literature from a broad range of sources. 'Future Shocks' includes, but is not limited to, areas where the EU has primary competence, and identifies the benefits of concerted action by the EU as well as the ability of its institutions and Member States to find new and effective solutions to deal with major shocks.

The 2023 edition, the second in this annual series, highlights **15 risks related to geopolitics, climate change, health, economics and democracy that could occur in the coming decade, and 10 policy responses to address existing governance capacity and possible ways to enhance capabilities within the EU**. Among the options set out are those previously included in European Parliament resolutions, positions from other EU institutions, and policy papers from think tanks and stakeholders.

CONTEXT

This paper continues a series launched in spring 2020, which has sought to identify means to strengthen the European Union's long-term resilience in the context of recovery from the coronavirus crisis. This latest paper first looks anew at 15 risks facing the European Union, in the changed context of a world coming out of the coronavirus crisis, but one in which a war just outside the Union's borders has now been going on for more than a year. It then looks in greater detail at 10 policy responses that the EU could take to address the risks outlined and to strengthen the Union's resilience to them. It builds on the first edition of this study, [Future Shocks 2022: Addressing risks and building capabilities for Europe in a contested world](#) (April 2022), which developed previous papers: [An initial mapping of structural risks facing the EU](#) (July 2020), which set out some 66 potential structural risks confronting the European Union in the aftermath of the coronavirus crisis; [Capabilities and gaps in the EU's capacity to address structural risks](#) (October 2020), which looked at those risks from the mapping which were considered to be more immediate and significant, and considered ways in which the EU and Member States could address them, either with existing capabilities or by filling gaps in policies and instruments; and [Options to enhance the EU's resilience to structural risks](#) (April 2021), which examined in greater detail, in 25 of the fields presented in the previous papers, possible action by the EU and highlighted proposals from various quarters, including the European Parliament itself, and the potential or actual constraints that might hinder action in these fields.

AUTHORS

Chapters in this paper were authored by the following policy analysts of the Directorate-General for Parliamentary Research Services (DG EPRS):

Antonio Albaladejo Román, Suzana Anghel, Luisa Antunes, Naja Bentzen, Julie Claustre, Mario Damen, Stefano De Luca, Costica Dumbrava, Gregor Erbach, Clément Evroux, Myriam Goinard, Gisela Grieger, Issam Hallak, Martin Höflmayr, Liselotte Jensen, Ulrich Jochheim, Marc Jütten, Jurgita Lekaviciute, Tambiama Madiega, Virginia Mahieu, Zsolt Pataki, Guillaume Ragonnaud, Magdalena Sapala, Marcin Szczepanski, Agnieszka Widuto, Alex Wilson and Ionel Zamfir.

Additional contributions have come from colleagues of the Policy Foresight Unit in EPRS, and the chapters were reviewed by experts from across EPRS, and from the Directorates-General for Internal and External Policies (DG IPOL and DG EXPO).

Unless otherwise indicated, the graphics were produced by Lucille Killmayer and Giulio Sabbati.

To contact the publisher, please e-mail eprs@ep.europa.eu

LINGUISTIC VERSIONS

Original: EN

Manuscript completed in July 2023.

DISCLAIMER AND COPYRIGHT

This document is prepared for, and addressed to, the Members and staff of the European Parliament as background material to assist them in their parliamentary work. The content of the document is the sole responsibility of its author(s) and any opinions expressed herein should not be taken to represent an official position of the Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

Brussels © European Union, 2023.

PE 751.428

ISBN 978-92-848-0924-0

ISSN 2600-5174

doi:10.2861/88235

QA-BS-23-001-EN-N

eprs@ep.europa.eu

<http://www.eprs.ep.parl.union.eu> (intranet)

<http://www.europarl.europa.eu/thinktank> (internet)

<http://epthinktank.eu> (blog)

Table of contents

Introduction	1
15 key risks to Europe in the coming years	19
Russian destabilisation of Europe	20
China's assertive foreign policy and Taiwan unification ambitions	26
Collapse of the internet	34
Instrumentalisation of irregular migration at EU borders	40
Extreme weather events: Droughts and water scarcity	46
Biodiversity loss or collapse	52
Increase in antimicrobial-resistant infections	59
Security of energy supply in Europe	66
Elevated sovereign debt in Europe	73
Rising challenges to China's growth performance	81
Critical raw materials supply shock	87
Instability stemming from the financial technology sector	95
Strategic and systemic threats to the democratic information sphere	99
The economic crisis as an accelerator for social instability in democracies	105
Decline in mental health and societal well-being in young Europeans	110
10 policy responses for the EU	119
Introduction to the responses	120
Strengthening European defence capabilities for a future European security architecture	129
Forging new partnerships in a polarised world	137
Reinforcing the resilience and long-term coordination of EU internet infrastructure	146
Responding to the instrumentalisation of migration	158
Securing energy supply in Europe	166
Safeguarding our natural capital	172
Managing antimicrobial-resistant infections	183
De-risking Europe's global critical supply chains	193
Delivering economic recovery and resilience	203
Defending the EU's democratic information sphere	213

Table of figures

Figure 1 - Probability, impact and timeline estimation of 15 risks	8
Figure 2 – R&D intensity (R&D expenditure as % of GDP), 2000-2020	14
Figure 3 – EU imports of mineral fuels from Russia (2020)	21
Figure 4 – Charting the potential impact of Russian destabilisation	23
Figure 5 – Scenarios for Russia's possible behaviour up to 2030	24
Figure 6 – Charting the potential impact of China's Taiwan ambitions	33
Figure 7 – Charting the potential impact of the collapse of the internet	39
Figure 8 – Detections of irregular crossings at the EU's external borders (in millions)	40
Figure 9 – Detections of irregular border crossings along the eastern borders route	40
Figure 10 – Possible scenarios for the instrumentalisation of irregular migration	42
Figure 11 – Charting the potential impact of the weaponisation of irregular migration	44
Figure 12 – Charting the potential impact of droughts and water scarcity	49
Figure 13 – Charting the potential impact of biodiversity loss	57
Figure 14 – Charting the potential impact of antimicrobial resistance	65
Figure 15 – Charting the potential impact of energy supply disruption	72
Figure 16 – General government gross debt, EU and selected countries, 2015 Q1 to 2022 Q3, % of GDP	74
Figure 17 – Secondary market yields of government bonds, 1993-2022, maturities of close to 10 years, % per annum, period averages (lhs); Yield spread between German and Italian bonds (rhs)	76
Figure 18 – Charting the potential impact of a sovereign debt crisis	79
Figure 19 – Charting the potential impact of challenges to China's growth	86
Figure 20 – Flows of raw materials and their supply risks for nine technologies and three sectors	87
Figure 21 – The different stages in the CRM supply chain	88
Figure 22 – Country concentration for production and reserves of some CRMs, using the Herfindahl-Hirschmann-Index (HHI)	89
Figure 23 – Share of processing volume by country, 2019	89

Figure 24 – Potential impact of a critical raw material supply shock	91
Figure 25 – The growing size of crypto-currency markets (includes bitcoin)	95
Figure 26 – Charting the potential impact of shocks to fintech	98
Figure 27 – Charting the potential impact of threats to the democratic information sphere	104
Figure 28 – Charting the potential impact of social instability due to economic crisis	109
Figure 29 – Four scenarios to explore the impacts on the EU of a decline in mental health and societal well-being in today's young Europeans, projected to late 2030	114
Figure 30 – Charting the impact of declining mental health among young people	116
Figure 31 – Links between risks and responses	126
Figure 32 – Timeline of selected security and defence initiatives	130
Figure 33 – Pyramid of instruments at the disposal of the EU and its Member States	131
Figure 34 – Pyramid of instruments at the disposal of the EU and its Member States	140
Figure 35 – Timeline of the EU's new partnerships in a polarised world	142
Figure 36 – Pyramid of instruments at the disposal of the EU and its Member States	148
Figure 37 – Timeline of selected measures to reinforce the resilience and long-term coordination of EU internet infrastructures	151
Figure 38 – Pyramid of instruments at the disposal of the EU and its Member States	159
Figure 39 – Timeline of responses to the instrumentalisation of migration	161
Figure 40 – Pyramid of instruments at the disposal of the EU and its Member States	167
Figure 41 – Timeline of selected energy policy-related events	170
Figure 42 – Pyramid of instruments at the disposal of the EU and its Member States	175
Figure 43 – Timeline of key milestones in action to safeguard natural capital	179
Figure 44 – Pyramid of instruments at the disposal of the EU and its Member States	185
Figure 45 – Projections regarding the burden of AMR by 2050	188
Figure 46 – Timeline of measures to tackle antimicrobial infections	190
Figure 47 – Supply chain risks	193
Figure 48 – Pyramid of instruments at the disposal of the EU and its Member States	195
Figure 49 – Timeline of measures to de-risk Europe's global critical supply chains	198
Figure 50 – Pyramid of instruments at the disposal of the EU and its Member States	208

Figure 51 – Timeline of new EU financing mechanisms to boost resilience	210
Figure 52 – Proportion who saw false or misleading information about each topic in the last week – selected regions	214
Figure 53 – Pyramid of instruments at the disposal of the EU and its Member States	216
Figure 54 – Timeline on defending the EU's democratic information sphere	219

Introduction

Zsolt Pataki

When risk becomes threat

'When risk becomes reality' – this is how we started the previous edition of this same study ('Future Shocks 2022: Monitoring risks and addressing capabilities for Europe in a contested world'). Russia's war against Ukraine represented a wake-up call to both those who warned of Russia's imperialism and those who considered that cooperation, inclusiveness and trade would have a deterrent effect.

In the year since Russia's war on Ukraine began, hybrid actions (including cyber-attacks, disinformation and the weaponisation of energy) targeting the EU as well as countries in its neighbourhood – for instance, Moldova – have continued and even intensified. They are likely to multiply in the near future, particularly in 2024, which is an electoral year for the EU.

Russia's invasion of Ukraine has also cast well-known dimensions of risk analysis into sharp relief. One such difficulty is to translate alerts of imminent threats into action before the threat is actually upon us. The world is increasingly characterised by challenges with cross-sectoral, trans-geographical and global consequences. Moreover, as volatility in multiple domains grows in parallel, the risk of intertwined crises (or 'polycrises') accelerates, i.e. war, natural disasters, geo-economic confrontation, cost-of-living, food and energy and other types of crisis. If the different types of crisis not only coincide in time but also persist for a considerable period, it means societies move towards a paradigm of so-called 'permacrisis'. The latter calls for a different approach to policymaking, such as systematic and strategic thinking and the capacity to provide swift policy responses while ensuring long-term sustainability, transparency, democratic oversight, and accountability.

Another issue is the fact that some risks transcend a given region or a given sector. Considering just the risks addressed here, the war against Ukraine has already given rise to mass migration into the EU; reinforced the trend towards higher energy prices; drawn attention to new supply chain risks, for example in the production of fertilisers; and may create further impetus for the fragmentation of the internet into unconnected domains.

In this report, Ukraine's reconstruction is seen as a crosscutting issue, as efforts are being made by the international community to provide short-term relief and stop Russia's aggressive war on Ukraine. Adequate plans for subsequent extensive reconstruction and comprehensive support are needed to repair the war damage and lay the groundwork for a free and prosperous future. These will be touched upon in the response chapters and further explored in other EPRS publications.

There is a silver lining: the report has led us to the realisation that the threat of autocracies is already upon us, and that increasing resilience is necessary to preserve our democratic values. Even when dealing with the immediate impact of a long-heralded crisis, we must continue to keep an eye on the long term, and consider possible emerging challenges and opportunities.

Approach

This collection of risks and their possible policy responses was designed during the last quarter of 2022 through several brainstorming meetings with the authors of the study, who have also addressed such risks in detail in a range of other EPRS publications. We have considered risks from

a 360° perspective and tried to relate them to the need to maintain and build governance capabilities within the EU.

Objectives

'Future Shocks 2023: Anticipating and weathering the next storms' is the second edition of the annual assessment by EPRS of the risks to, and capabilities and resilience of, the European Union in the face of the multiple challenges of today's contested world. It seeks to:

- provide up-to-date, objective, and authoritative information about global risks – a 360° survey, based on risk literature from a broad range of sources;
- identify and analyse specific risks that have the potential to harm Europe and its people. As such, this report fills a gap left by most risk reports which focus on global risks. It builds on this work and extends it to the specific EU context; and
- deepen the knowledge base and identify policy options for EU decision-makers to effectively address risks, redress gaps in executive governance capacity, and create opportunities for benefit (capability-building).

The paper includes areas where the EU has primary competence, but is not limited to such areas. The experience of the pandemic has shown that areas of primarily national competence can and indeed must benefit from analysis and discussion at EU level. For instance, although health is an area of limited EU competence, the pandemic demanded a massive response at EU level, including new funding and the launch of new initiatives and tools.

Structure

This paper is a continuation of the EPRS risk and capability mappings published in 2020 and 2021¹ and an updated and upgraded version of the previous risk study ('Future Shocks 2022: Monitoring risks and addressing capabilities for Europe in a contested world'). It has three main parts.

- The **first part** provides an introduction and begins with a consideration of what a risk is and of related concepts such as risk aggregation and risk management. It then reviews a wide range of recent risk literature, and their findings are categorised in terms of their relevance for the EU. This part concludes with an assessment of the probability and impact of the various risks, and a brief description of risks that have not been selected ('blind spots').
- The **second part** consists of a closer analysis of 15 risks related to geopolitics, climate change, health, economics and democracy that could occur in the coming decade. These risks are all very relevant for the EU, its citizens and businesses, but they only represent a selection of risks across a wide range of topics and sectors.
- The **third part** addresses the ways in which the EU can respond to the various risks. It analyses the elements that responses have in common and explores what is called the 'language of response'. This part also looks at the links between the various risks and responses. It includes 10 contributions on different areas where the EU is building capacity to deal with emerging threats. These address EU capabilities to respond to threats, and identify options for new capabilities and new actions at EU level.

NB: The risk chapters were finalised between March and May 2023, but where relevant have been updated more recently to include the adoption of legislation.

Understanding risk and uncertainty, and causes thereof

Dictionary definitions of risk include 'a situation involving exposure to danger', 'the possibility of something bad happening' and 'something that creates or suggests a hazard'.² Risk analysis needs to go further, and to consider, for example, what the subject of a risk is. Many of the external risk reports considered here focus on risks to industry and business, and not least on events that can lead to loss of value of an investment. As this report has an EU perspective, it takes a broader approach. It will consider risks to stability, security and prosperity, all of which are core concerns of the EU and its citizens.

There are more elaborate definitions of risk than those just mentioned. An example from specialist literature is 'uncertainty about and severity of the events and consequences (or outcomes) of an activity with respect to something that humans value'.³ This combines two distinct aspects that are often taken as criteria for estimating the seriousness of a risk: **probability and impact**. Understanding risk also involves understanding uncertainty, which may be defined as a situation in which something is not known, is in doubt or is dependent on chance.

Risk has many dimensions. These include possible benefits of risk; risk aggregation; risk management; trade-offs between risks; the issue of mitigation versus adaptation; the need to understand the causes of risk; and the need to communicate risk to a broader audience. The report examines these aspects in order to clarify questions such as:

- Is a zero risk policy a legitimate goal?
- What combinations of risks from different sectors are particularly dangerous (risk aggregation)? How can such aggregated risks be addressed in a multidisciplinary manner?
- Is there a possibility that actions to reduce one identified risk could lead to an increase of another risk (trade-offs)?
- Are the root causes of a given major risk well known and generally agreed upon, or are they obscure or a matter of dispute?
- Are there measures that can mitigate several risks simultaneously?
- How can we move from risk mitigation and management to opening new opportunities for the EU?

Combinations of risks from different sectors can be particularly dangerous. Several risks can 'mature' simultaneously. Specialist literature emphasises the importance of showing how individual risks interact with each other, in order to keep the larger picture in mind.⁴ To give one example, globalisation and increasing interconnectedness mean that the impact of a single event can spread rapidly around the world. Appreciation of risk aggregation has therefore become a key element of risk management. It also enhances the case for regular dialogue and contacts across organisational silos and across institutions.

A counterpart is the search for measures that can mitigate several risks simultaneously. The belief that a rising tide lifts all boats has often been invoked in relation to economic policy, and there are good grounds for believing that a successful economic policy – one bringing greater prosperity – also helps towards greater security and stability. Nevertheless, it is far from easy to identify strategies that can mitigate the many different risks that cloud the economic horizon.

In some cases, action to reduce one risk can lead to the increase of another. This trade-off has long been known in healthcare; surgery can involve the destruction of healthy tissue, but this is justified by the benefits of removing diseased tissue. A political equivalent would be the challenge of scaling back industries which contribute heavily to greenhouse gas emissions. The risk of unemployment

will need to be mitigated by the creation of new jobs for individuals and regions affected by the green transition.

Old concerns about nuclear supply chains, nuclear accidents and nuclear waste are likely to gain traction if, for example, a significant share of funding for the EU's green transition is devoted to increasing the production of nuclear energy.⁵ Where the causes of a complex risk are obscure, or a matter of dispute, it can be more difficult to muster support for a given set of countermeasures. As some of the most important challenges facing the EU are especially complex in character, there is a need both for a strong effort to understand causes and also to develop a consensus around the findings of such analysis.

In governance and public affairs, being in control is a desirable state of affairs; public opinion responds badly to the appearance of loss of control. Managing risk is a legitimate concern of governance, but it can also be a sensitive and difficult topic. There are differences of opinion about when a risk should be met with mitigation – efforts to reduce the risk – and when it should be met with adaptation – changes in how one arranges one's own organisation. This is a particularly lively issue in relation to climate change. In this area, mitigation is about limiting the extent of climate change effects, notably by reducing greenhouse gas emissions, while adaptation is about reducing vulnerability to the expected effects of climate change. These two approaches involve different costs and benefits; many experts support strategies that include both.⁶

Risk analysis and evaluation give a starting point, but the identification of potential hazards should not be an end in itself. It should feed into a risk management strategy.⁷ Risk management involves the identification and application of measures and policies to control or eliminate potential harms, based on judgements about the tolerability or otherwise of a given risk. For this report, the risks to be managed are those that may harm the security, stability and prosperity of the EU.

A survey of recent risk literature

As was done in our 2022 edition, we did a review of existing risk literature by using the STEEP (Social, Technological, Environmental, Economic and Political) categorisation to compile a broad overview of possible threats and potential weaknesses in different domains. The emphasis throughout was also on risks for the EU. The literature survey draws on a wide variety of risk reports published between 2020 and early 2023 by major international organisations, international think tanks and networks, re/insurance companies, and other private sector entities, and on recent EPRS reports.

Most of the risk reports had been using surveys on expert opinion, such as the World Economic Forum Global Risks Report and major re-insurance companies, whereas the AXA Future Risks Report supplements expert opinion with an extensive opinion poll among laypersons. Others are explicitly dedicated to risks to industry and to business. These are not only limited to market trends but include geopolitical risks ranging from political instability to policy changes around regulation or taxation. 'Global Trends to 2040', produced by the US National Intelligence Council, is an example of an analysis firmly centred on risks to a state, while climate risks are now the subject of extensive analysis, most notably by the IPCC, and law enforcement bodies including Europol have covered downside risks of digitalisation such as cybercrime.

Reports specifically dedicated to the analysis of social and societal risks, beyond public health, are relatively rare. A valuable contribution towards closing this notable gap is the OECD's 'Risks That Matter', which is based on a survey of 25 000 individuals spread over 25 countries. The 2020 edition of this report finds that 'people are worried about keeping their jobs, paying the bills, and staying healthy'.⁸ A clear majority say government should be doing more to ensure their economic security, and many are willing to pay more in taxes for this purpose.

Most risk reports seek to prioritise between different risks. This commonly involves judgements on two dimensions: the likelihood that a given event will happen, and the size of the impact if it were to happen. A third dimension is the timescale: when a given event is likely to happen. A probability-impact matrix is often used, based on survey data. This visual representation places risks in relation to each other and helps identify those that are considered most likely and most impactful by the majority of people. It is important, though, to remember that these are not solid predictions of what will actually happen in the future. For instance, before the coronavirus locked most of the world down in 2020, a global pandemic was seen as a relatively low probability event. However, collective intelligence on the perception of risks can be useful to help policymakers set priorities.

In the last edition of 'Future Shocks' from 2022, we wrote that there was a broad consensus in the reports we considered that the pandemic was the greatest present risk, with climate and environment being the next most important, and geopolitical instability identified as a major possibility. Cybersecurity is a key concern in relation to digitalisation, with implications both for business continuity and for democratic stability. Among macroeconomic issues, medium-term risks concern price instability, commodity shocks and debt crises. Societal risks include increasing discontent and the erosion of social cohesion, driven by loss of livelihoods; this in turn can lead to political instability and democratic backlash, further impacting society's ability to respond to challenges.

Many of these risks hold for the current period: the most recent reports find that the main risks in the next five to 10 years will relate to climate change, geopolitical tensions, cybersecurity risks and energy risks. Furthermore, the AXA Future Risks Report 2022 identifies that there is an **interrelation between climate change, geopolitics and energy**, which form a new **nexus of risks**.⁹ In addition to this, the same report has just found that, despite the ongoing Russian war on Ukraine, **climate change topped the risk ratings** for experts from all over the world for the first time. Attention is focused on the urgency of a net zero agenda, though the much-desired energy transition and climate action are being deeply complicated by geopolitics. The latter is also increasing the risk of global food insecurity and the risk of a global war and cyber-attacks.

Economic risks are also becoming more serious and may fuel social tensions worldwide. In addition, systemic failures in financial markets may decrease confidence and increase the risk of financial instability, while galloping inflation could lead to social unrest. Another recent report¹⁰ states that, as Russia's war on Ukraine has continued for over a year now, the persistence of the crises is reshaping the world (and Europe), and a continued push for resilience in strategic sectors will come at such a high cost that only the most robust economies will be able to endure it.

People around the world are becoming more vulnerable to risks, being concerned by rising geopolitical tensions, market volatility, growing inflation, climate inaction and the possible outbreak of another pandemic. Rising vulnerability sees a loss of trust in experts, authorities and public institutions. This is also a result of an overall negative perception of geopolitical tensions, the erosion of fundamental principles of international law, and doubts over the ability of all sorts of stakeholders, public and private, to act against climate change. This is even more serious for the EU, as it was hit by a recent corruption crisis that undermines democratic ideals, and which points to foreign powers potentially influencing the EU decision-making processes and institutions. This may exacerbate the decrease of trust in the EU as a champion of democratic values, principles and norms, as perceived by public opinion.

In its report from April 2023, the Economist Intelligence Unit released its top global risk scenarios¹¹ that could shape the world in the coming years: geopolitical tensions remain high, whereas there is a low likelihood of financial sector contagion. These 10 global risk scenarios may have a significant impact on the global economy: Deteriorating ties between China and EU/US; Inflation eases rapidly, boosting economic growth; Financial sector contagion triggers global recession; New, highly aggressive infectious disease emerges; High inflation fuels social unrest; Extreme weather and war in Ukraine prompt famine; Conflict erupts between China and Taiwan; Cyberwar erupts; Geopolitical tensions prompt nuclear arms race; War in Ukraine turns into global conflict.

Similar to other studies in this field, there are several topics that might not have been included and which can be reported as 'neglected issues' or 'blind spots'. A prominent example is Russia's invasion of Ukraine in 2022, which has brought into sharp focus certain risks that have not been given high priority in recent years in the reports summarised above. One of these is the risk of escalation towards nuclear warfare. To its credit, the Global Catastrophic Risks Report included this as an example of an 'old' risk still worthy of attention. Another re-emerging risk is that of global food insecurity, due both to the likely plummeting of Ukraine's grain exports and to the disruption of the production and supply of fertilisers worldwide.¹²

A 2020 report by the Canadian Society of Actuaries includes a list of undervalued risks, over a wide spectrum of areas.¹³ Environmental risks include loss of freshwater services, severe weather, and tropical storms and earthquakes. International security concerns include failed states, wars, and weapons of mass destruction. Economic risks, which may be undervalued, include currency shock, asset price collapse, financial volatility, destabilisation of global markets due to a slowdown in China's economy, and destabilisation of China's economy. Other risks relate to liability regimes and regulatory frameworks, and to transnational crime and corruption.

The World Economic Forum (WEF) makes the point that several developments have a negative impact especially on youth, and create a risk of disenchantment and exclusion.¹⁴ The Global Catastrophic Risks Report also points to the potential harms of an AI weapons race, which could lead to ineffective governance and a failure to address safety concerns.¹⁵ Moreover, in its Global Risks Report 2023, the WEF strongly emphasises the climate-energy-security nexus of risks, saying that climate mitigation and adaptation efforts are set up for a risky trade-off, while nature collapses. In addition, the food, fuel and cost-of-living crises exacerbate social vulnerabilities, while declining investments in human development erode future resilience.

In the following section, we explain why and how the 15 risks in this report have been selected, out of an initial set of around 40 major risks and potential threats in spheres ranging from geopolitics, climate change, food insecurity, and energy supplies to health, the economy, the cost of living, cybersecurity, and democracy. The editorial taskforce held multiple discussions along with experts and authors on the methodologies and how the choices were to be made.

Methodology of risk selection and analysis

This report not only draws on a wide variety of risk reports – published between 2020 and early 2023 – and the previous year's study, but also a range of topical EPRS publications and those of major international (governmental) organisations, international think tanks and networks, re/insurance companies, and other private sector entities. On the one hand, while we try to remain concise and select the highest risks, we also did not want to leave out any major risk: we kept the number of risks at a balanced level of 15 and aimed to keep the right balance between the various types and dimensions of topics (geopolitics, climate, economics, etc.).

The future is constantly changing. By this, we mean that with each new development, event and turn in trends, our understanding and expectation of what may happen in the future changes. Therefore, the selection of future risks that we decide to identify as the highest priority for the coming years must be regularly updated. Compared to the risks identified in previous reports, some are still very much relevant, and the context may have changed or evolved. These risks have therefore been maintained in the present report, and have been updated to include the latest developments that cast a new light on this risk. Other risks from previous years may still be relevant, but have not seen significant change or development since previous editions. These risks have not been repeated, but we invite the reader to consult the risks identified in previous years. Some risks are newly identified, or have increased in importance over recent years and thus have been taken up in this latest edition.

In order to come to a list of 15 risks, we applied several criteria. Firstly, the time horizon of future risks has previously varied between reports as the context and political priorities at the time varied. For this report, given the upcoming European elections, we chose to start with a time horizon of approximately 5-10 years – two EU election cycles. According to our internal policy analyst survey data, some risks appear closer or further to that horizon: for instance, a disruption in energy supply may be a rather short-term risk, whereas antimicrobial resistance is a risk which might materialise in the long term.

Secondly, and in addition to the time horizon, the selected risks should clearly have a strong impact should they come to pass. More specifically, the impact(s) should manifest at multiple levels of society: they should have a clear impact on the EU at the level of governance, but also have strong implications at the national level and a clear impact on the lives of citizens. These risks should be credible, but not necessarily probable or certain, because even risks that seem relatively low in probability, if they do happen, can have very strong impacts and we should therefore be prepared for them. This phenomenon is illustrated by both the COVID-19 pandemic and by the invasion of Ukraine by Russia, both of which many people thought were relatively improbable (though, of course, experts had warned about them).

Figure 1 - Probability, impact and timeline estimation of 15 risks

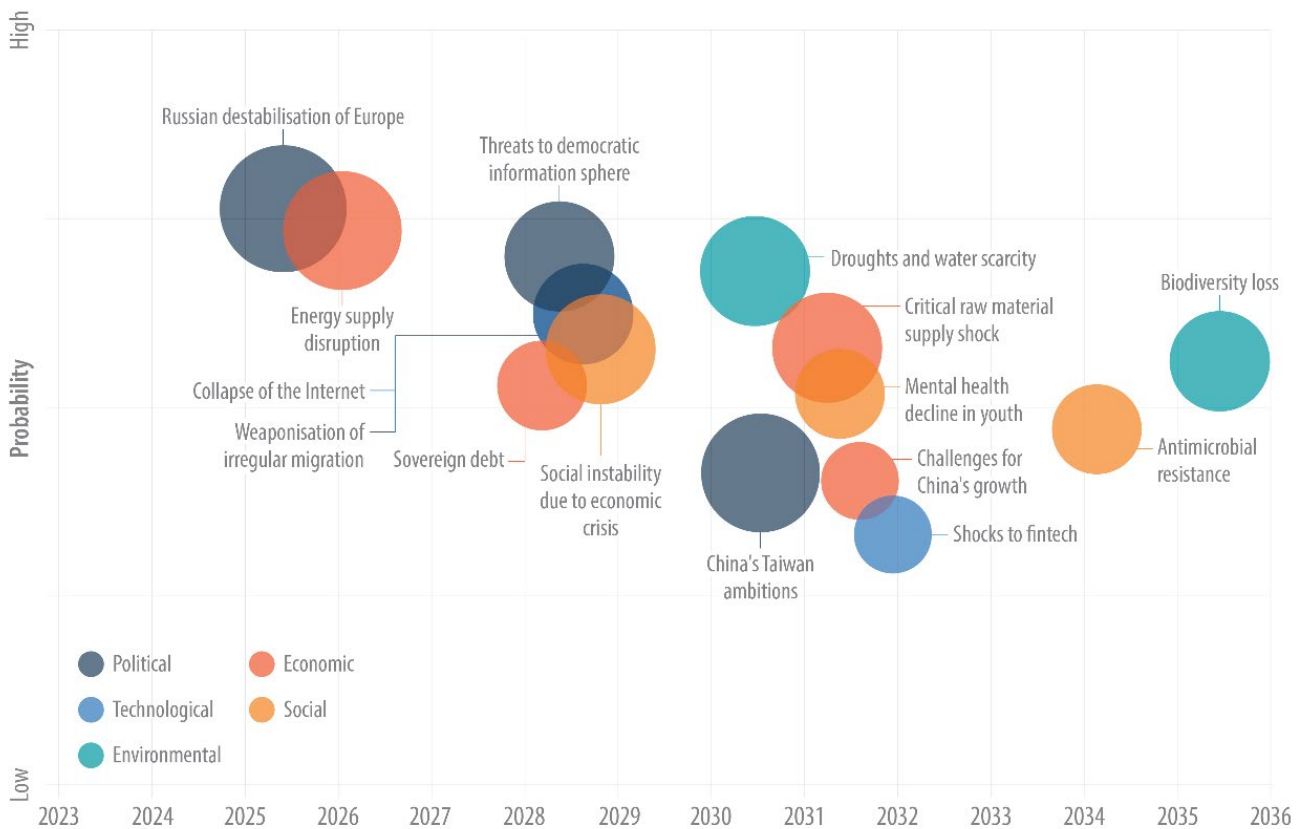


Figure 1 represents the anticipated timeframe for the onset of a given risk on the X axis (2023-2036). The estimated probability of the risks occurring is shown on the Y-axis (low to high). The expected impact of each risk on the EU is reflected by the size of the circles. The graphic is based on a survey of EPRS staff.

Russian destabilisation of Europe and the accompanying disruption to energy supply remain at the forefront for the near future. Risks related to democracy, migration and the economy are prominent in the medium term (2028/2029). Risks related to China, fintech, the environment and mental health are seen as medium- to long-term issues. Antimicrobial resistance and biodiversity loss are considered longer term challenges.

The graphic shows that longer anticipated time horizons for a risk are associated with lower estimated impact. A caveat is advisable on this point: this may reflect present bias, i.e. the tendency to assign more importance to matters of immediate attention. The further we project ourselves into the future, the fuzzier our expectations become.

According to these criteria, the final risk selection was based on several inputs: risks identified in the literature review, inputs from authors of previous years as well as policy analysts and prospective authors across the EPRS, and several rounds of collective and bilateral brainstorming between previous and prospective authors and the report coordination team. An overview of these risks and why they were selected for the report is given below. The selection of the corresponding policy response chapters is described in more detail at the start of Part 3.

Each risk is described in response to four questions:

- **WHAT? – What is at risk?** This section lays out the background and context of the risk, and the factors (elements, trends, events) that could exacerbate the chances of the risk occurring.

- **SO WHAT? – Impact on the EU:** This section goes into more detail on what the risk would imply, should it happen. For instance, what are the impacts at different levels (the EU, its Member States and its citizens), and how could it aggregate with other risks in this report?
- **WHAT IF? – Scenarios:** These scenarios are short imaginings by the authors of ways in which the risk could evolve, constructed using different methods depending on the type of risk (for example, using the 2 x 2 grid method, or using 'What if?' questions as prompts). Scenarios help the reader to visualise the various factors and possible developments in terms of risk analysis, but should not be taken as a prediction of actual events. As with the rest of the chapter, they solely reflect the views and expectations of the author.
- **WHAT NEXT? – What could be done?** Based on the analysis above, this section lays out the factors that could be considered by policymakers when deciding how to prepare for this risk. These are not prescriptive recommendations, but rather provide ideas about how risks could be avoided or mitigated.

Overview of the main risks and interlinkages

The reports considered during the literature review flagged the problem of increasing great power rivalry, and drew attention to the risks of accelerating geopolitical tensions. Last year's Russian invasion of Ukraine shows that a risk may materialise, endangering European and global security. Another example of a geopolitical risk is the continued rise of China, which may also increase the risk of a China-Taiwan conflict. This well-known concern frequently features as an aspect of global power rivalry and of US-China relations.¹⁶

In this context, the risk of deteriorating relations between the EU and China remains significant. Many reports predict a gradual deterioration in the relationship, as frictions surfaced during the pandemic in 2020 and tensions mounted with the exchange of economic sanctions in early 2021.¹⁷ If tensions continue to rise, this will have a widespread impact on Europe's economy and green transition, due to China's place as one of the EU's biggest trading partners.¹⁸ This means that, while a further increase in Chinese power carries potential risks for Europe, so does the possibility of economic disruption in China.¹⁹ There is a case for carefully assessing the balance of risk and opportunity for Europe, both in the event of a successful China and of a China beset by economic turmoil.

In terms of migration, the WEF and others mention associated risks. The EU dimension of this includes the risk of greater pressure on EU external borders, on asylum schemes, and on migration policies generally.²⁰ A related issue is the risk that certain countries are weaponising migration, trade and energy to seek leverage in their relations with the EU.²¹

In many reports, climate change is the next most important global risk, and in Europe climate change is considered to be the greatest challenge for the coming years. This area, too, has a broad impact – on human health and well-being, on the environment, and on economies across the world – and some effects are irreversible.²² The physical risks it poses are among the most pressing concerns both for the public and for experts,²³ with authoritative assessments predicting a rise in global temperature of 1.5°C or more over the next two decades.⁵³ Extreme weather events, wildfires, floods and droughts will become more frequent;²⁴ rising sea levels will put both human livelihoods and ecological systems at risk;²⁵ and climate change will have severe consequences for individuals and communities, the environment, food and water security, and development.²⁶ Extreme climate events feature frequently in the literature, often addressed in connection with natural disasters, although some reports note that the link between climate change and the incidence of extreme natural events is difficult to prove, and it is contested by some scholars. Associated risks include failure of climate action, human-made environmental damage, and shortages of natural resources.

The link between climate change, biodiversity loss and possible impacts on human health is a particular focus.²⁷ *The Lancet* has drawn attention to the risks to human health from global warming,²⁸ while a report by the International Military Council on Climate and Security (IMCCS) draws attention to catastrophic security implications arising from plausible scenarios of climate change.²⁹ The risk of antimicrobial resistance has also been chosen, as it is causing a huge, otherwise avoidable death toll and is expected to surpass cancer as a global killer by 2050, with the threat of exacerbating a future pandemic.

Another main risk is the failure to secure adequate financing for public services and for government and administration. The exacerbation of sovereign debt in Europe, including as a result of the COVID-19 pandemic and the war in Ukraine, could eventually help to undermine Europe's capacity to respond to internal and external challenges. This potential risk therefore needs to be evaluated properly for the EU to be prepared for its potential direct and indirect consequences. The emerging wave of insolvencies is identified among the top 10 short- and medium-term risks in some reports, and economic outlooks devote much space to this issue. A counterbalancing risk of excessive and over-hasty reduction of public spending levels has also been identified.³⁰ Among risk managers, significantly more have lower expectations for the global economy than before the pandemic.³¹

Cyber-attacks are continuously on the rise, cybercrime is causing losses of trillions of euro yearly for businesses,³² and increasing reliance on technology exposes both the private and public sectors to cyber-threats; experts have low confidence in the readiness of governments to respond to such risks.³³ Many reports classify the risk of cybersecurity disruptions and the new technological arms race – the competition to acquire new AI capabilities – as being among the greatest current risks in Europe. Global ransomware, attacks on energy infrastructure, supply chains and a potential failure of the cloud have been identified as the most pressing risks for businesses in the years to come.³⁴ In addition, state-sponsored groups are continuously developing their capabilities for disruptive operations.³⁵ It is expected that state-backed actors will further pursue their strategic objectives through cyber operations for intelligence gathering, intellectual property theft, and operational environment preparations.³⁶ Another dimension of cybersecurity is the problem of government overreach and authoritarian instrumentalisation, for example through abusive surveillance of political opponents or indeed of citizens generally.³⁷

The risk of a collapse of the internet or of major tech providers is not new.³⁸ Recent web outages suggest that internet infrastructure is increasingly centralised, which decreases its resilience and increases the danger of a major network collapse; the Canadian Society of Actuaries identifies this as an issue of concern.³⁹ In one scenario, a problem arising with a single infrastructure provider could lead to the collapse of entire critical segments across the globe. Digital hyper-connectivity is identified as one of four megatrends by the latest Commission foresight report, which presents both opportunities and threats.⁴⁰ Other aspects of technological change also raise concerns, with some reports emphasising the risk of algorithms destabilising democratic political debate. An example is the flourishing of disinformation about vaccines, which adds a new dimension to the discontent wrought by the impact of the coronavirus pandemic on employment and incomes.⁴¹

The longstanding concern over the risk that digitalisation would replace more jobs than it creates has developed into a recognition that many jobs will change significantly, and that reskilling is an essential part of adaptation. An associated issue is whether digitalisation will bring productivity gains; to date, such gains have lagged behind expectations, suggested remedies for which include improvements in skills and in connection speeds. An OECD study finds that monopolisation of platform markets is also associated with weaker productivity gains.⁴²

Shocks to financial technology are also to be considered, as the Fintech industry may be among the worst-hit sectors amidst the recent market downturn. This market downturn, coupled with a stubborn high-inflation environment and suddenly rising interest rates, presents newfound challenges that Fintech has never had to face before. Financial technology makes global financial institutions (and states) vulnerable; disruptions might cause financial instability, and overall collapse of the economy and state budgets.

Energy security is a major risk for the EU in 2023, due to the breakdown of relations with its leading energy supplier, Russia. This will be the second year in which Europe has needed to fill its gas storage without access to Russian supplies, while the EU embargo on imports of Russian oil and coal takes full effect. Another important risk to consider here is a potential collapse occurring in the EU's energy grid and infrastructure, for instance due to a Russian cyber-attack. The link between heightened geopolitical instability and the rise in energy prices is also explored.⁴³

The energy transition is widely seen as a playground for global rivalry, and there is a high risk that competition and lack of coordination will dominate the global energy transition. This will form part of the background to the EU's attempts to develop its own green technology and related mineral production capacity.⁴⁴

Related to this, the disruption of supply chains is a top global risk in many reports. The issue of risks related to clean energy supply chains is often discussed here, and the energy transition is expected to be strongly affected by competition and insufficient coordination.⁴⁵

Regarding domestic political affairs, the risk of democratic backsliding is often mentioned in the selected literature.⁴⁶ Concern about democracy is one of the four megatrends included in the Commission's recent foresight report, as are changes in the global order, and both can be regarded as political risks, one internal and one external. Several reports highlight the risk of societal fragmentation and civil unrest, often in connection with the effects of the coronavirus crisis and of the global economic downturn.⁴⁷ The WEF centres its analysis on 'the risks and consequences of widening inequalities and societal fragmentation'.⁴⁸ The pandemic brought new disparities in health outcomes and workplace opportunities, and has added even greater strains to safety nets. Failure to act on inequalities may in turn make it harder to act on climate change, for example.

To improve social cohesion, the IMF recommends investing in social protection, education and health: 'Investing in education, healthcare, and early childhood development and strengthening social safety nets financed through improved tax capacity and higher progressivity, can strengthen lifetime opportunities, improve trust, and contribute to more social cohesion.'⁴⁹ IMF research also suggests that increased taxation on the wealthiest companies and individuals – a solidarity surcharge – would be appropriate in the near term.⁵⁰

Corruption remains a significant risk in the coming years. Transparency International's Global Corruption Barometer finds that almost a third of the respondents consider that corruption in their country is getting worse, and almost half feel that their government is not effectively addressing the issue. An estimated 30% of the respondents use corrupt means (such as bribes and abuse of personal connections) to access public services. There is also widespread concern about ties between business and politics: over 50% of respondents believe their national governments are run by private interests.

Corrupt practices can lead to a misuse of public funds and can contribute towards an erosion of democracy and the rule of law. In the context of the ongoing Qatar corruption scandal, four individuals have been charged with alleged corruption, money laundering, and organised crime.

Qatar and Morocco are thought to have bribed European Parliament officials, lobbyists, and their families to influence policies related to their own interests.

Risk reports from the security sector continue to identify organised criminal groups as a serious threat to the internal security of the EU. Their activities range from the drug trade to cybercrime, and from migrant smuggling and human trafficking to the transport of dangerous and illicit waste. The current pandemic context and the potential for serious social and economic fallout could facilitate the expansion of organised crime in Europe. Organised criminal elements have already adapted to the pandemic environment by adjusting illegal products, their operational methods and narratives to the COVID-19 context.

Risks beyond those discussed in this study

We acknowledge that there are several blind spots in this report. For the sake of limiting ourselves to a manageable set of top risks, we had to forego some runner-up candidates that did not make the final list. The first such risk is related to the Middle East, a region that sees many issues colliding, such as climate change impacts, security risks and regional power competition, which all foment instability. In Iran, the scale, duration and message of the recent upheavals may jeopardise the current government. Furthermore, Iran's recent actions in support of Russia pose a direct threat to European security, on top of its renewed actions towards gaining military nuclear capability. Certainly, challenges and instability in Iran, and by extension in the Middle East, will remain a threat to European security in the next five to 10 years.

Another risk to consider is that the EU may be falling behind in the global race in key technologies, and is struggling to capitalise on its scientific excellence; a third is food and feed insecurity in Europe. To minimise caveats due to taking out these three risks from the report, we want to underline again that they are also major risks, but we needed to take difficult decisions based on the impact and likelihood of risks and strike a balance between all risk categories to maintain focus. Therefore, we are giving a brief account of these left-out risks below:

- Iran further destabilising the world

Although the EU remains a steadfast supporter of the 2015 Joint Comprehensive Plan of Action on Iran's nuclear programme, the US's withdrawal in 2018 and the subsequent breaches of the agreement by Iran have contributed to a straining of relations between the Western signatories (the US, the EU, France, Germany and the UK) and Iran. Hopes for new talks and progress accompanied President Biden's inauguration in 2021, but discussions have so far stalled. Iran's alignment with Russia since its illegal invasion of Ukraine in February 2022, and in particular the supply of drones and other weaponry to Russia, have erased any hope for major progress in the short term.

Rocked by the largest wave of protests since its beginnings in 1979, the Ayatollah's regime has adopted a firmer stance, both at home and abroad. The protests, which started because of water shortages and the economic crisis as early as 2021, have gathered large swathes of the population since the death of 22 year-old Mahsa Amini at the hands of the morality police in September 2022. Protesters have publically opposed the current regime, and the government responded to protests with intensified violence and a brutal crackdown on opponents and critics of the regime, including death sentences. These actions triggered widespread Western condemnation as well as renewed calls, including among EU and US elected representatives, of [support for Iran's civil society](#). The EU has also [sanctioned several Iranian individuals and entities](#), including the [Iranian Revolutionary Guard Corps \(IRGC\)](#), and state-owned media companies in response to the death of Mahsa Amini and the regime's violations of human rights.

Abroad, Iran has operated a rapprochement with Russia, which has reportedly [intensified](#) in recent months, over the war in Ukraine. Ukraine first identified Iranian-made drones in attacks against its civilian infrastructure in September 2022. In November, Iran finally acknowledged that it had supplied drones to Russia, which it claims to have sent before the start of the war. However, since then, Western defence officials have accused Iran of continuing to supply military drones and of sending new military equipment to Russia, fearing that Iran could provide Moscow with [ballistic missiles](#), capable of destruction on a much larger scale. This would pose an additional threat to Ukraine, as its anti-ballistic missile capacity remains limited and would also complicate US, EU, and allied efforts to support Ukraine. The November 2022 G7 Foreign Ministers' statement urged Iran to [abide by the terms of the JCPOA](#) and the related UNSC Resolution (UNSCR 2231), calling Iran's actions 'blatant violations' of the agreement. In response to Iran's violations of the nuclear agreement, the EU imposed [sanctions on several Iranian nationals and Shahed Aviation Industries](#), the IRGC-linked company building the drones used against Ukraine.

In such tense geopolitical times, a nuclear agreement on Iran is more necessary than ever. However, the prospects of achieving meaningful steps in the talks are meagre, as Iran's recent move to increase its uranium enrichment and its choice of backing Russia militarily have ostracised the regime further and triggered a breakdown of Iran-West relations. Iran's military proliferation could also bring more uncertainty and instability to the Middle East; for example, a Russia-Iran alliance in Syria could anger Israel by complicating its military campaign. Tighter relations between Moscow and Tehran would logically push Israel to increase its support to Kyiv, but Prime Minister Netanyahu's new government might have effected a U-turn, engaging in [direct dialogue with Russia](#) for the first time since Russia's invasion, a move that angered Ukraine and concerned the US.

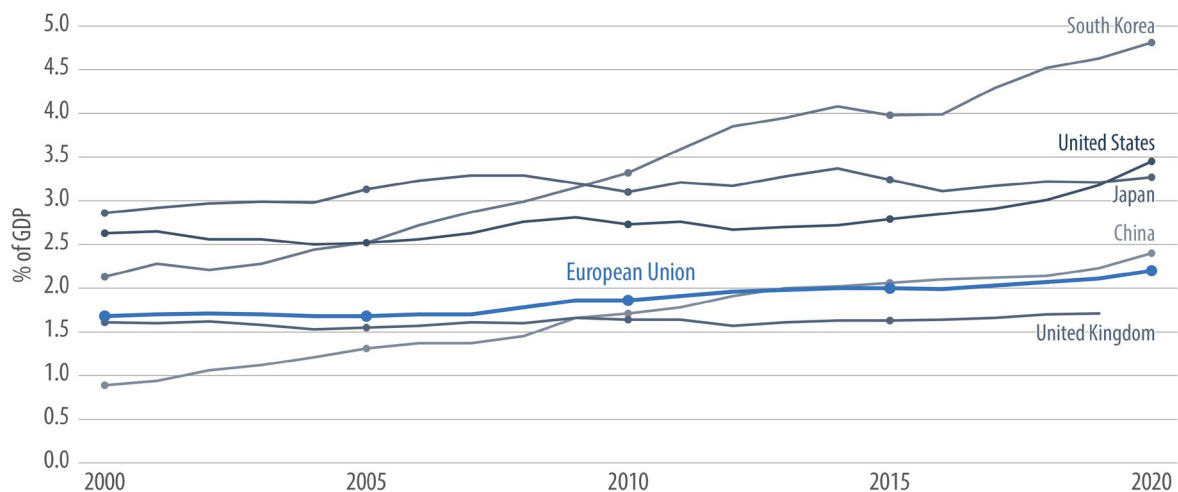
– The EU falling behind on technology development and innovation

Research and innovation (R&I) is indispensable to economic and societal prosperity and is an enabler of sustainable development and growth. Investing in R&I is also key to avoid Europe being left behind in the global race for competitiveness in times of persisting and multiple crises. The level of investment in R&I will determine delivery of some key technologies without which climate neutrality cannot be achieved by 2050. For instance, the IEA estimates that nearly 50% of emission reductions needed to achieve net zero by 2050 depend on technologies that are not yet commercialised.

R&I is important in addressing many long-term, challenging trends that Europe and the world are facing, such as climate change, loss of biodiversity, ageing populations, diminishing productivity growth, stagnant digitalisation, societal inequalities, security threats and migration pressures, support for industrial transformation, protection of natural resources, green energy, sustainable mobility and sustainable food production. The problem is that, globally, the EU is lagging behind in the development of some key technologies, and has not yet managed to capitalise fully on its scientific potential. It wants to play a prominent role in addressing challenges related to digitalisation, but of the 10 largest platform businesses in the world, none is currently from the EU. In the field of AI and blockchain the EU has more specialist researchers compared to the US and China, but it accounts for only 7% of the global amount of annual equity investment whereas the US and China account for 80%.

Currently, the EU is still missing its self-imposed target of spending 3% of its GNP on research and development (R&D), whereas its competitors and main trade partners invest much more.⁵¹ In 2013, China's R&D expenditure surpassed that of the EU for the first time by allocating an equivalent of 2% of GDP (see Figure 2 below).⁵²

Figure 2 – R&D intensity (R&D expenditure as % of GDP), 2000-2020



Source: European Commission, [Science, research and innovation performance of the EU 2022](#).

In a [recent report](#), the European Commission states that the quest to maintain or even boost competitiveness assumes additional importance in the current era of geopolitical tensions and regional economic rivalries, hence the EU's R&I performance is a main driving factor. In the global landscape, the EU remains an R&I powerhouse, producing about 20% of the world's scientific and technological output, while having just 6% of the world's population.⁵³ However, this position has been eroding, as the EU's major trading partners have been improving their innovation performance at a faster pace in recent years.

China is the global leader today in terms of the volume of scientific publications it produces, while the US has retained its lead in terms of quality and impact. This trend continued during the pandemic, which further skewed the global tech race in favour of the US and China, particularly in relation to digital technologies. To remain a leading global scientific player and ensure that knowledge flows between EU actors, Europe needs strong, long-term R&I investments at EU level, as well as some bold action allowing it to surpass its global competitors.

– Food and feed insecurity

[According](#) to the UN Food and Agriculture Organization (FAO), between 720 million and 811 million people in the world faced chronic hunger in 2020, the highest level since 2014. [Climate change](#) and the COVID-19 pandemic have further exposed the challenges for the [global food system](#) to feed an increasing population in a sustainable manner. Russia's military aggression against Ukraine has raised [widespread international concern](#) for a food crisis similar, or worse, to the one the world faced in [2007-2008](#).

Russia and Ukraine are [key agricultural players](#), exporting nearly 12% of food calories traded globally, and are major providers of basic agro-commodities, including wheat, maize and sunflower oil. Several regions are highly dependent on imports from these two countries to ensure their basic food supply: Russia and Ukraine, combined, supply over 50% of the [cereal imports](#) in North Africa and the Middle East, while eastern African countries import 72% of their cereals from Russia and 18% from Ukraine. The level of the war's impact on global food supply, and the severity of the subsequent food crisis, will largely depend on the duration of the conflict itself and of the evolution of each of the factors mentioned above.

Overall, the European Commission [estimates](#) that up to 25 million tonnes of wheat would need to be substituted in order to meet worldwide food needs. The FAO forecasts that the global reference price of fertilisers would undergo an additional 13 % increase in 2022/2023, and this increase would influence production costs for the 2022/2023 growing seasons.

While food availability is not at stake in the EU, food affordability for low-income households might be at risk. Furthermore, EU agricultural production will be impacted by the EU's strategic dependence on a number of key inputs. The bloc is largely [self-sufficient](#) in key agricultural products, such as wheat and barley (net exporter), and maize and sugar (largely self-sufficient). The EU is also self-sufficient in a number of animal products, both dairy and meat products, and fruits and vegetables. However, the EU is a considerable net importer of specific products that may be difficult to substitute in the short term, such as [sunfloweroil](#) and seafood. Moreover, the war in Ukraine has exposed the [dependency](#) of the EU on a number of key imported resources: [energy](#), animal feed and feed additives, as well as agricultural fertilisers.

In terms of food affordability, inflationary tensions will disproportionately affect low-income households, including refugees, putting them at further risk of food insecurity. According to the FAO, a total of [6.9 million](#) people in the EU were exposed to severe food insecurity over the 2016-2018 period, based on the food insecurity experience scale ([FIES](#)). The pandemic highlighted the vulnerability of groups of EU citizens, with [food banks](#) seeing a sharp increase in demand. It also revealed the dependence of low-income households on social assistance programmes, such as subsidised school lunches, to cover their nutrition needs. In 2020, [8.6%](#) of the overall EU population were unable to afford a meal with meat, fish or a vegetarian equivalent every second day.

The [FAO estimates](#) that Russia's war on Ukraine risks raising the number of undernourished people in 2022-2023 from [7.6 million to 13.1 million](#). Jordan, Yemen, Israel and Lebanon are among the most concerned countries, as they [rely heavily](#) on imports of basic commodities, notably from Russia and Ukraine. [African countries](#) will have difficulties in facing market disruptions and the rise in prices, and higher prices and shortages also seriously [affect food assistance](#) to fragile countries. In Ukraine itself, the UN World Food Programme (WFP) [estimates](#) that '45 per cent of the population are worried about finding enough to eat'.

-
- 1 EPRS with IPOL and EXPO, [Towards a more resilient Europe post-coronavirus: An initial mapping of July 2020](#); EPRS with IPOL and EXPO, [Towards a more resilient Europe post-coronavirus: Capabilities and gaps in the EU's capacity to address structural risks](#), October 2020; EPRS with IPOL and EXPO, [Towards a more resilient Europe post-coronavirus: Options to enhance the EU's resilience to structural risks](#), April 2021.
 - 2 OED, Cambridge Dictionary, and Merriam-Webster respectively.
 - 3 T. Aven and O. Renn, [On risk defined as an event where the outcome is uncertain](#), *Journal of Risk Research*, Vol. 12, No. 1, January 2009, 1-11, p. 1.
 - 4 K. Bjørnsen and T. Aven, [Risk aggregation: What does it really mean?](#), *Reliability Engineering & System Safety*, 2019; ISO, [Risk management vocabulary guide](#), 2009.
 - 5 S. Spinaci, [EU taxonomy: Delegated acts on climate, and nuclear and gas](#), EPRS, February 2022.
 - 6 IPCC, [Climate Change Synthesis Report 2014](#), p. 17.
 - 7 M. Rausand, [Risk assessment: theory, methods and application](#), John Wiley & Sons, 2011.
 - 8 OECD, [Main Findings from the 2020 Risks that Matter Survey](#), OECD Publishing, 2021.
 - 9 AXA, [Future Risks Report 2022](#).
 - 10 WEF [Global Risks Report 2021](#) and WEF [Global Risks Report 2023](#).
 - 11 Economist Intelligence Unit, [Top global risk scenarios report](#), April 2023.
 - 12 [Ukraine war 'catastrophic for global food'](#), BBC News, March 2022.
 - 13 M. Rudolph, [13th Annual Survey of Emerging Risks: key findings](#), Canadian Society of Actuaries, March 2020.
 - 14 WEF Global Risks Report 2021, p. 57.
 - 15 U. Westin et al, [Global Catastrophic Risk Report](#), 2021.
 - 16 National Intelligence Council, [Global Trends to 2040](#), March 2021.
 - 17 Economist Intelligence Unit, [Risk Outlook 2022](#), p. 4.
 - 18 European Commission, [Countries and Regions](#).
 - 19 Lloyd's [Emerging 19 risks report 2021](#), WEF [Global Risks Report](#); AXA [Future Risks Report 2021](#).
 - 20 WEF Global Risks Report 2021; Lloyd's [Emerging 19 risks report 2021](#).
 - 21 WEF Global Risks Report 2021; Lloyd's [Emerging 19 risks report 2021](#); The Eurasia Group, [Top risks 2021](#).
 - 22 IPCC, [Climate change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change](#), August 2021.
 - 23 AXA [Future Risks Report 2021](#), p. 19.
 - 24 Chatham House, [Climate change risk assessment 2021](#), September 2021.
 - 25 IPCC, [Climate change 2021: The Physical Science Basis](#).
 - 26 European Commission, [2021 Strategic Foresight Report – The EU's capacity and freedom to act](#), September 2021.
 - 27 Relevant sources: [World Risk Report](#); Chatham House [Climate Change Risk Assessment 2021](#); U. Westin et al, [Global Catastrophic Risk Report](#); WEF [Global Risks Report](#); Allianz [Risk Barometer 2021](#); FERMA [European Risk Manager Report 2020](#). See also ECHO, [European Disaster Risk Management](#).
 - 28 M. Romanello et al, [The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future](#), October 2021.
 - 29 International Military Council on Climate and Security, [The World Climate and Security Report 2021](#), June 2021.
 - 30 European Confederation of Institutes of Internal Auditing [Risk in focus 2022](#); North Carolina State University ERM Initiative & Protiviti, [Executive Perspectives on Top Risks for 2021 & 2030](#); WEF [Global Risks Report 2021](#); AXA [Future Risks Report 2021](#); FERMA [European Risk Manager Report 2020](#); OECD, [Risks that Matter Survey](#), 2021.
 - 31 M. Rudolph, [14th Annual Survey of Emerging Risks](#), Canadian Society of Actuaries, p. 9.
 - 32 Juniper Research, [The Future of Cybercrime & Security: Threat Analysis, Impact Assessment & Mitigation Strategies 2019-2024](#), September 2018.

-
- 33 AXA [Future Risks Report 2021](#), p. 26, and AXA [Future Risks Report 2022](#), pp. 5-6.
- 34 WEF [Global Risks Report 2021](#); AXA [Future Risks Report 2021](#); FERMA [European Risk Manager Report 2020](#); Allianz [Risk Barometer 2021](#).
- 35 ENISA, [Threat Landscape 2021](#), October 2021, p. 21.
- 36 Control Risks, [Geopolitics and cyber in 2021](#), February 2021.
- 37 Amnesty International, [Uncovering the Iceberg: The Digital Surveillance Crisis Wrought by States and the Private Sector](#), July 2021.
- 38 WEF, [What if the Internet collapsed?](#), May 2012.
- 39 M. Rudolph, [14th Annual Survey of Emerging Risks](#), Canadian Society of Actuaries, January 2021, p. 7.
- 40 European Commission, [2021 Strategic Foresight Report – The EU's capacity and freedom to act](#), September 2021.
- 41 WEF [Global Risks Report 2021](#); Geopolitical Intelligence Services, [Disruptions](#).
- 42 OECD, [Economic Outlook 2019](#), Ch. 2.
- 43 Relevant sources: ESMA, [Report on Trends, Risks and Vulnerabilities](#), No. 2, 2021; Lloyd's [Emerging 19 risks report 2021](#); WEF [Global Risks Report 2021](#); COFACE [Country & Sectors Risks Handbook](#), 2021.
- 44 AXA [Future Risks Report 2021](#); The Eurasia Group, [Top risks 2021](#); ESMA, [Report on Trends, Risks and Vulnerabilities](#), 2021.
- 45 Lloyd's [Emerging 19 risks report 2021](#); Allianz [Risk Barometer 2021](#); WEF [Global Risks Report 2021](#); AXA [Future Risks Report 2021](#).
- 46 Lloyd's [Emerging 19 risks report 2021](#); Allianz [Risk Barometer 2021](#). See also V-Dem Institute, [Democracy Report 2021](#), March 2021.
- 47 Lloyd's [Emerging 19 risks report 2021](#); AXA [Future Risks Report 2021](#); FERMA [European Risk Manager Report 2020](#); OECD, [Risks that Matter Survey](#).
- 48 WEF [Global Risks Report 2021](#), p. 5, and WEF [Global Risks Report 2023](#), pp. 8-9.
- 49 International Monetary Fund, [Fiscal Monitor](#), April 2021.
- 50 V. Gaspar et al., [A COVID-19 Recovery Contribution](#), IMF blog, April 2021. There are historical precedents for such surcharges: see K. Abdel-Kader and R. de Mooij, [Tax Policy and Inclusive Growth](#), IMF Working Paper No. 2020/271, 4 December 2020.
- 51 Presidency Conclusions – Barcelona European Council, 15 and 16 March 2002, [SN 100/1/02 REV 1](#).
- 52 Eurostat, [Government budget allocations for R&D \(GBARD\)](#), data extracted in July 2022.
- 53 European Commission, Science, research and innovation performance of the EU 2022; Eurostat, [The EU in the world – population](#), data extracted in January and February 2020.

15 key risks to Europe in the coming years

Russian destabilisation of Europe

Suzana Anghel

WHAT? – What is at risk?

Russia's military aggression against Ukraine is the latest and the most brutal manifestation of a revisionist policy relying on hybrid warfare tactics that started over two decades ago. In Russia's view, hybrid warfare [includes](#) both 'conventional conflict' and 'activities below the level of conventional conflict', which Russia uses extensively in Ukraine but also in other conflict settings, particularly in the [Middle East](#) and in [Africa](#) (for example, in Mali), often with a destabilising effect on the EU.

Russia's invasion of Ukraine in 2022 is a watershed moment for European security, described as a 'tectonic shift in European history' by the [European Council](#) in Versailles. Sustained diplomatic activity – conducted bilaterally, at the level of the heads of state or government, and multilaterally, in the [OSCE](#) and the [Normandy Format](#) – preceded the outbreak of the war, while the [US](#) and [EU leaders](#) warned Russia of massive consequences, including robust sanctions, in the event of aggression against Ukraine. At the time, Russia amassed troops on the Russian and Belarusian borders with Ukraine, looked for closer ties with [China](#) and [addressed](#) so-called requests for 'security guarantees' to both the US and NATO, calling on NATO to abandon strengthening its eastern flank, to end its open door policy, and to ban Ukraine from future membership. The [EU](#) and [NATO](#) denounced the attempt to revive Cold War tactics and revert to a world based on spheres of influence, and emphasised countries' freedom to choose their own future. US President Joe Biden formulated the [principle](#) of 'nothing about you, without you' as a basis for a united transatlantic position in support of Ukraine.

In recent years, Russia has used hybrid destabilising tactics – including the instrumentalisation of migration, weaponisation of energy and other raw materials, and cyber activities, ranging from espionage and surveillance to [hacking](#) and social media campaigns – to undermine democracy in the EU, spread disinformation, interfere in electoral processes or disrupt critical infrastructure and essential services. These destabilisation attempts present a risk for the EU economy as a whole, and to European society and democracy. To counter this risk, longer-term mitigation measures are needed and should focus on building resilience, stimulating growth, cutting dependencies, transitioning to a green economy, fighting disinformation and combating electoral interference.

Russia will most likely continue to use hybrid warfare tactics, targeting not only the EU but also countries, such as Moldova, which aspire to EU membership. Russia could attempt to heat up some of the [protracted conflicts](#) in the EU's neighbourhood, including Transnistria, in an attempt to internationalise the war beyond Ukraine. The use of non-conventional weaponry, including non-strategic nuclear weapons (NSNW), in Ukraine is unlikely for now but cannot be [discounted](#) either. Arms control dialogue is at a historic low, with, most recently, Russia suspending its participation in the [New START Treaty](#), which requires, inter alia, regular mutual inspections at military nuclear facilities. Russia's enhanced [military presence](#) in Belarus, with personnel and [equipment](#), and the acceleration of the two countries' integration are additional elements of concern for European security. [Combat activities](#) in the vicinity of civil nuclear facilities increase the risk of an (un)intended civilian nuclear incident unless an agreement on a 'safe zone' surrounding civilian nuclear facilities, in particular the [Zaporizhzhia](#) nuclear power plant, is reached.

Russia's teaming up with authoritarian regimes in [North Korea](#) and [Iran](#) will most probably continue, economically and militarily, in an attempt to circumvent international [sanctions](#). Furthermore, Russia's economy is [shrinking](#), accelerating the country's [pivot](#) towards China and other Asian countries, including India, as well as Africa and Latin America in a search for alternative (energy) markets, with the aim of keeping the Russian economy afloat and sustaining the war effort.

SO WHAT? – Impact on the EU

[Interdependence](#) in the economic and energy fields defined the post-Cold War EU-Russia relationship. This approach prevailed until Russia's invasion of Ukraine in 2022, with some adjustments in 2014. Then, the illegal annexation of Crimea led to an abrupt halt to the high-level political dialogue, and no EU-Russia summit has been organised since. EU leaders showed political unity as they agreed on [sanctions](#), which have subsequently been renewed and expanded. However, analysts argued that sanctions set in 2014 were, in the end, [insufficient](#) to act as a deterrent. Furthermore, no policy U-turn occurred despite the European Council's assessment that the EU should reduce dependencies, particularly in the area of energy, by diversifying sources and suppliers. The absence, at the time, of a common perception of the threats to EU security, in particular the Russian threat, led Member States to pursue uncoordinated energy policies, with only a few – Poland, the Baltic States and Croatia – undertaking efforts to cut their dependency on Russian fossil fuels. As recognised by the High Representative/Vice President of the European Commission (HR/VP), Josep Borrell, between 2014 and 2022 the EU increased its energy dependency on Russia instead of decreasing it (see Figure 3).

Figure 3 – EU imports of mineral fuels from Russia (2020)

EU imports of mineral fuels from Russia (2020)

EU imports of goods

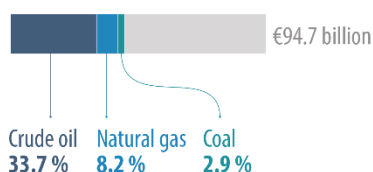
€94.7 billion
EU imports from Russia



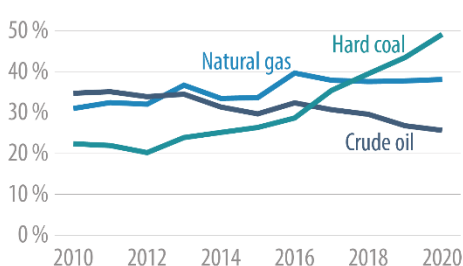
5.5 %
of total EU imports

EU imports of mineral fuels from Russia

€42.5 billion **44.9 %**
EU imports of mineral fuels from Russia

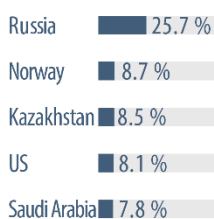


EU import dependency on Russia

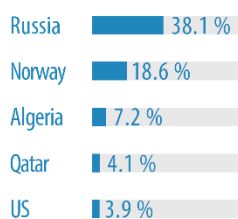


Major EU import partners

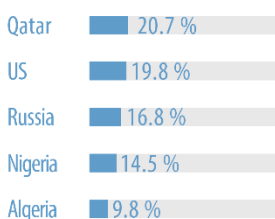
Crude oil



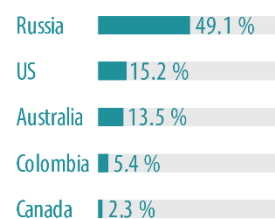
Natural gas



Natural gas - Liquefied



Hard coal



Data source: Eurostat ([Comext](#), [nrg ti sf](#), [NRG TI OIL](#) and [NRG TI GAS](#)) and author's calculations.

The outbreak of Russia's war on Ukraine was a game changer, as EU Member States had to individually and collectively review, and even make U-turns on, several policies. This is particularly valid for energy policy and security and defence policy.

A major shift occurred regarding energy, with a security perspective replacing the trade perspective that had prevailed for the past two decades. Rapid decisions followed. Meeting in Versailles in March 2022, EU leaders [agreed](#) that the Union should progressively phase out its dependency on Russian fossil fuels, and on fossil fuels in general, accelerate the deployment of renewables, diversify suppliers and sources, enhance connectivity, refill gas storage facilities, and counter the spike in energy prices. Consequently, in May 2022, the European Commission proposed [REPowerEU](#), an initiative allowing the EU to phase out its dependency on Russian fossil fuels and bolstering green initiatives. In response, Russia has [re-routed](#) its energy exports to India and China. When it comes to nuclear energy, [dependency](#) on Russian raw material imports is unchanged (around 20%) and has still to be tackled. So far, EU Member States' behaviour on this has spanned from stalling (Germany, the Netherlands and Sweden), to reducing (Bulgaria) and even increasing (Finland, Hungary and Slovakia) imports of nuclear-related materials.

The other policy area where Russia's military aggression against Ukraine had a major impact was security and defence. Several Member States undertook major policy shifts, accepting to send weaponry to a country in conflict (e.g. [Germany](#)) or increasing their defence spending to meet or even exceed (e.g. [Poland](#)) the target set by the [Wales NATO summit](#) of spending 2% of GDP on defence. At the Union level, a [defence investments gaps analysis](#) conducted at the [request](#) of the European Council identified capability shortages and warned about the risk of depleting critical defence capabilities. This has accelerated the adoption of new policy responses in support of joint procurement and the development of capabilities (see Chapter on strengthening European defence capabilities).

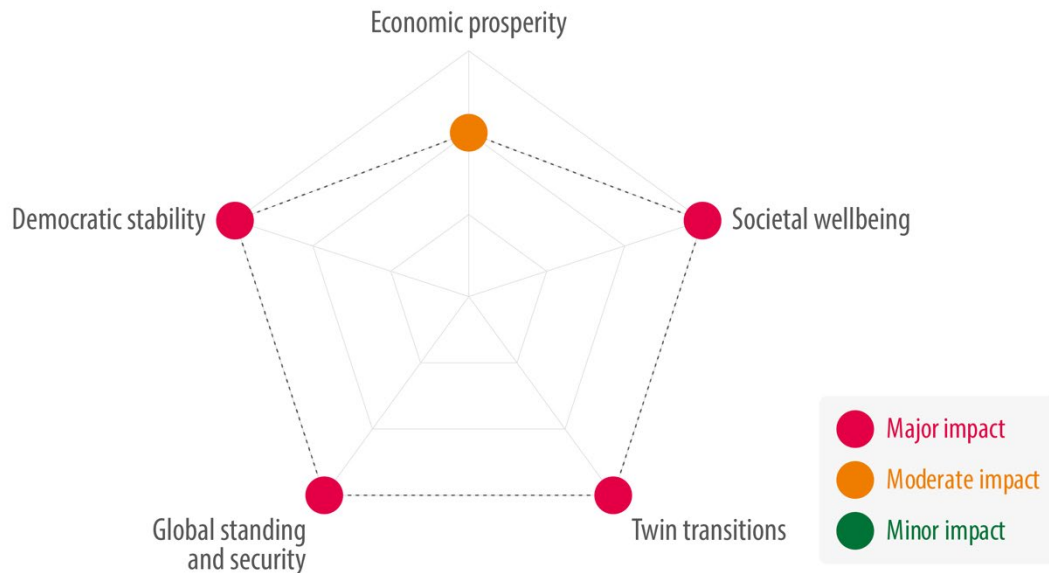
A joint assessment of the Russian threat was carried out after the outbreak of the war in Ukraine. The [Strategic Compass](#), endorsed by the European Council in March 2022, recognised that a revisionist Russia has far-reaching implications for European security. Similarly, the [NATO Strategic Concept](#), adopted in June 2022, offered a sharp assessment of the Russian threat, calling it 'the most significant and direct threat to Allies' security and to peace and stability in the Euro-Atlantic area'. It indicated that NATO wishes for peace and not for confrontation, focusing on defence and deterrence. The Alliance maintains its open-door policy to countries that aspire to membership and meet the accession criteria, confirming the commitments undertaken at the [2008 Bucharest summit](#) regarding the transatlantic path of Ukraine and Georgia. Analysts concur that Russia's military aggression against Ukraine [strengthened](#) NATO both politically and operationally, allowing it to display [political unity](#) while [reinforcing](#) the eastern flank. Finland has recently joined the Alliance and Sweden is expected to do so, a development likely to further strengthen the eastern flank and foster closer EU-NATO cooperation.

Russia's military aggression against Ukraine led the EU to approve, in close coordination with like-minded partners, 10 successive packages of [sanctions](#) of an unprecedented scale, with the aim of disrupting Russia's ability to wage war on Ukraine. The EU and NATO [agreed](#) on a new joint declaration where they committed to stepping up cooperation, including on countering hybrid and cyber threats, stressing that 'tangible results' had already been achieved. No new Russia strategy has been published thus far, although some of the [five principles](#) governing the EU's Russia policy prior to the Ukraine war, and parts of the [EU joint communication](#) recommending to simultaneously push back, constrain and engage Russia, would benefit from a review reflecting the new security reality.

Russia's destabilisation of Europe is having a major impact on the twin transition (see Figure 4). The shift in energy policy could, in the long run, boost green energy and have a major impact on the EU's ability to meet its carbon neutrality objective by 2050. Russia's hybrid activities affect the EU's wealth and society in a moderate way, although they have a major effect on the democratic process (interference in votes in the EU as well as in the UK pre-Brexit, and in the US). This may be subject to

change depending on the intensity of Russia's hybrid warfare activity and the EU's ability to support economic growth, counter inflation, address the spike in energy prices and fight disinformation. Russia's destabilisation of Europe has a major impact on the EU's ability to position itself as a pole between the US and China, given that security concerns prevail and trade arrangements come second.

Figure 4 – Charting the potential impact of Russian destabilisation



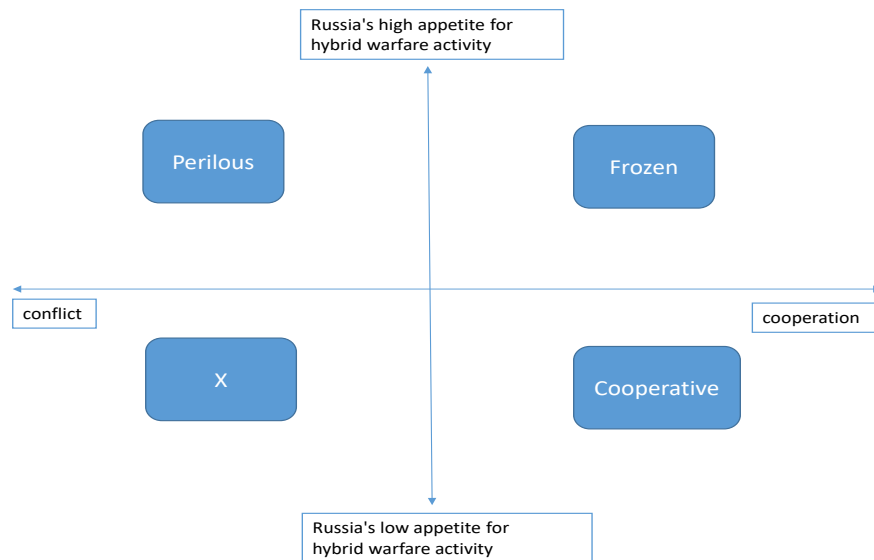
Source: EPRS.

WHAT IF? – Scenarios

Russia relies on hybrid warfare in its attempt to destabilise the EU and its neighbourhood. Hybrid warfare activity might increase or decrease in the coming years, hence the interest to explore such variation, represented on the vertical line in the matrix below. The other key element to consider is Russia's appetite for cooperation or conflict, represented on the horizontal line in the matrix. The nexus of these two driving forces offers different perspectives on Russia's possible behaviour up to 2030.

Three scenarios are developed below. A fourth scenario, based on conflict in the context of a weak Russian appetite for hybrid warfare activity, is non-plausible and is therefore not developed.

Figure 5 – Scenarios for Russia's possible behaviour up to 2030



Scenario 1: Perilous

This scenario is already under way. Further (non)conventional escalation and an (un)intended internationalisation of the war in Ukraine cannot be discounted for as long as a viable peace solution is not found. In this scenario, Russia's appetite for conflict is high, as is its appetite for hybrid warfare activity, and new mobilisation waves will continue. Russia would look to continue its offensive in Ukraine while increasing its military presence in the EU's neighbourhood, most probably in Belarus where [Zapad military exercises](#) (joint Russian-Belarusian military exercises currently occurring every four years) are planned and forces will remain pre-positioned. Russia could attempt to mount pressure on NATO's eastern flank – less so in the Black Sea, given Turkey's [role](#) as a 'key keeper', but elsewhere at a time when the eastern flank has expanded with the accession of [Finland](#) to NATO.

In this scenario, Russia will most probably further multiply and intensify its cyber and hybrid activities against the EU and its allies, including disinformation and electoral interference, with the aim of curbing public support for Ukraine and thus prompting European and allied governments to discontinue the financial and military support offered to Ukraine. The EU will most probably continue to face large-scale migratory flows and will need to agree on new packages of sanctions, hence the importance of maintaining political unity.

Russia's ability to continue to wage war in Ukraine and elsewhere in the region would depend on three (cumulative) factors. Firstly, its ability to sustain the war financially in the context of [economic decline](#), hence the continued rapprochement with China, some other Asian countries, including India, Latin America and Africa in the context of an economic decoupling from the West. Secondly, Russia's ability to replenish conventional weapons stocks that have been rapidly depleting in the first year of war; this might prove to be a growing challenge as the required components are or could be subject to sanctions. Thus, Russia would most probably deepen relations with Iran and North Korea, two regimes already attempting to circumvent sanctions. Thirdly, Russia's domestic posture; the regime could strengthen its authoritarian grip on the country despite economic hurdles and the high human cost of the war.

Scenario 2: Frozen

This scenario takes place after the war in Ukraine has stalled, at a time when an increasingly authoritarian Russia continues with (and multiplies) its cyber and hybrid activities in an attempt to destabilise the EU. Russia will intensify hybrid activities and try to heat up protracted conflicts in the

EU's neighbourhood. It will pursue its integration with Belarus and continue a revisionist policy. The crushing of civil society and political opponents will intensify as the regime retreats further into authoritarianism. Nationalist rhetoric would increase, surfing on an idealisation of the Soviet and/or imperial past, and the Orthodox religion would once again be used as a geopolitical weapon, with the aim of dividing and destabilising parts of the Orthodox world, particularly in the Western Balkans. Russia may continue to instrumentalise migration but could no longer use energy as a weapon, since the EU will have progressively phased out its dependency, multiplied its supply sources and diversified its energy mix. International justice would progress in investigating war crimes committed not only in Ukraine but also in Georgia and Syria.

The EU will phase out its dependency on Russian fossil fuels, while also addressing other dependencies, such as raw materials. It will continue to push back but also to contain Russia internationally, as the country would continue to violate international law. High-level political dialogue would remain frozen, with no progress in the UN Security Council and in the light of Russia's recent suspension/withdrawal from arms reduction treaties. Engagement would not be possible, while communication would occur at a technical level on individual/specific issues, such as counter-terrorism.

Scenario 3: Cooperative

Under this scenario, Russia reverses course, looking to renew cooperation while giving up on its hybrid activities targeting the EU and its neighbourhood. This U-turn is the consequence of the lack of financial means to continue the war in Ukraine, of extreme poverty in Russia, which might trigger social unrest, and of the extremely high human cost of the war, which could endanger the survival of the regime and place Russia on the brink of fragmentation. Russia's attempt to compensate for losses on the EU energy market by increasing its share of the Chinese market is unsuccessful in the context of an economic slowdown of the Chinese economy and increased Sino-Russian rivalry in central Asia. Consequently, Russia agrees to a comprehensive peace agreement in Ukraine, acknowledges that Ukraine would be part of the transatlantic community, pays war compensation and cooperates with the international justice system on war crimes in exchange for the lifting of sanctions, re-opening of the high-level political dialogue with the EU and the G7 and reintegration into international fora.

WHAT NEXT? – What could be done?

A new EU strategy on Russia is needed, which would reflect the realities of today and offer, in cooperation and coordination with like-minded partners, a joint policy vision for the next five years. In parallel, the EU should deepen defence cooperation among its members, particularly as regards research, development and procurement of military capabilities. It should continue to strengthen, expand and monitor the implementation of sanctions against Russia, strengthen its energy policy and accelerate the green transition, while avoiding creating new dependencies, particularly for [raw materials](#).

References

Bassot E., [Ten Issues to watch](#), EPRS, European Parliament, January 2023.

Clark M., [Russian Hybrid Warfare](#), Institute for the Study of War, September 2020.

Saari S. and Secrieru S. (eds.), [Russian Futures 2030](#), EU ISS, August 2020.

[Strategic communications as a key factor in countering hybrid threats](#), STOA study, European Parliament, March 2021.

China's assertive foreign policy and Taiwan unification ambitions

Gisela Grieger

WHAT? – What is at risk?

Under President Xi Jinping, China has pursued a more overtly [revisionist](#) foreign policy agenda not only towards China's periphery but also globally. This could lead to armed conflict with one or more status quo powers in the Indo-Pacific over disputed territorial and maritime claims or Taiwan that could, in turn, severely undermine regional peace and stability and jeopardise global prosperity. Owing to the paramount [role](#) of the United States (US) in the security architecture of the Indo-Pacific, a regional armed conflict could trigger a US military response and broaden into a great power war which, if China were to prevail, could bring to an end the US-led liberal rules-based order, with significant repercussions for the EU. China has longstanding claims to contested maritime features in the [East China Sea](#) (ECS) and [South China Sea](#) (SCS), to disputed [territory](#) along its [border](#) with India in the Himalayas and, most notably, to [Taiwan](#). China considers Taiwan a [renegade province](#) that has to be 'reunified' with mainland China under the 'one country, two systems' formula, preferably by peaceful means. However, to deter a Taiwanese declaration of independence, China has never excluded taking Taiwan by force and, in 2005, enacted the [Anti-Secession Law](#) as the legal basis for such a move.

While China has been [outspoken](#) about its ambitious objectives, uncertainties remain regarding China's concrete timeframe and the means it is likely to employ to try to accomplish its objectives, and regarding the US's [evolving posture](#) of '[strategic ambiguity](#)' towards a Taiwan contingency. In 2021, Taiwan [claimed](#) that China would reach the military capability required to launch a full-scale invasion of Taiwan by 2025. [Senior US military officers](#) have floated the risk of a Chinese invasion of Taiwan by 2027 or [even earlier](#), based on an [expedited](#) Chinese military target for 2027 that coincides with the 100th anniversary of the People's Liberation Army (PLA) and the 21st Chinese Communist Party (CCP) National Congress, where Xi may wish to report progress on the 'Taiwan question'. However, these predictions were made before Russia's war of aggression against Ukraine, and the strong Western response may, to some extent, modify the Chinese leadership's calculus. In a [poll](#) by the Center for Strategic and International Studies (CSIS) conducted after the [Fourth Taiwan Strait crisis](#) in August 2022, 63% of respondents stated that 'an invasion of Taiwan is possible within the next ten years', while 79% of them stated that 'Xi will prioritise making progress toward Taiwan's peaceful unification during his third [presidential] term'.

Several [risk factors](#) could accelerate regional conflictual dynamics. China could interpret moves by the US, other countries, or Taiwan itself as a 'provocation' and use them as a [pretext](#) for a sudden military response going beyond [past](#) responses. Such a 'provocation' could be triggered by the more frequent arrival in Taiwan of high-level '[political tourists](#)', e.g. the [Speaker](#) of the [US](#) House of Representatives, a [bipartisan](#) group of US Senators/Representatives of an unknown size, [high-ranking US government officials](#), a [head of state](#) or government of an EU Member State, arms sales to Taiwan from countries other than the US, or the formal declaration of independence by a [less moderate](#) leader of the independence-leaning Democratic Progressive Party (DPP) than Tsai Ing-wen after winning the [2024](#) or 2028 presidential elections in Taiwan. The risk is exacerbated by the [hardening bipartisan US stance](#) towards China. Moreover, in anticipation of the impact of the

ongoing US-led [coalition-building](#) to enhance '[collective capacity](#)' and '[integrated deterrence](#)' in the Indo-Pacific, as well as its ageing population and other structural economic issues, China could decide to pass on to military action, factoring in the [military balance](#) in the Taiwan Strait, which has tilted in its favour and could be reaching relative peak strength after [modernising](#) and restructuring its military and paramilitary [forces](#) based on a growing [defence budget](#). This sense of urgency, combined with China's advantage of geographical proximity over the US and the expanding regional presence of the PRC's navy (PLAN) – numerically the largest navy in the world, according to a 2022 US Department of Defense [report](#) – could provide China with the motivation and confidence to tempt military conflict with the US over Taiwan.

Xi's leadership style could be another risk factor. The concentration of political power in one [strongman](#), dubbed the '[Chairman of Everything](#)', which is unprecedented since Mao, in conjunction with the proven [loyalty](#) to Xi of the new [Chinese top leadership](#) that emerged from the CCP's 20th Party Congress in 2022 and the resulting absence of internal criticism and factional opposition, makes future Chinese decision-making prone to 'inside-the-box thinking', miscalculation and unpredictable [policy reversals](#), as [observers](#) suggested was the case for Russian President Vladimir Putin before his decision to invade Ukraine. Xi's personal ambitions regarding his historic legacy could be another risk; his repeated statements about the '[historic mission](#)' and the inevitable [requirement](#) of 'reunification' for 'the great rejuvenation of the Chinese nation' by 2049, echoed in the 2022 [White Paper](#) on Taiwan, suggest that Xi is eager to go down in history as the Chinese leader to have completed this task. Since becoming president, Xi has frequently [stated](#) that the Taiwan issue 'cannot be passed on from generation to generation'. However, he has so far made little progress on 'reunification' with Taiwan, as mainland China and Taiwan have moved further [apart](#) rather than closer together in recent years. An [overwhelming number](#) of Taiwanese consider themselves to be Taiwanese only, and a very small minority still identify themselves as Chinese. A majority of Taiwanese are in favour of the [status quo](#), with only 25 % leaning towards independence and those privileging unification becoming an insignificant fringe group. Time thus seems to be against China and Xi's patience may run short, and his willingness to force progress through aggressive means may increase, as he grows older. As Xi Jinping is 69 years of age at the time of writing, his fourth presidential term from 2027 to 2032 could be the final timeframe to achieve unification during his lifetime, since Xi would be 79 years old at the end of that term.

Finally, another risk could arise from historical experience, according to which political leaders facing serious domestic problems [tend to](#) seek to distract from them by forging ahead with foreign policy action. China has many such domestic problems, e.g. the end of China's [demographic dividend](#), [slowing](#) economic growth, a state-led economy leaving [limited space](#) for China's vibrant [private sector](#), [rising debt](#) at all levels, a volatile [real estate sector](#), and a weak health and old-age [care system](#). In the past few decades, China's economic growth has been the Party's main source of legitimacy for its rule over the people. As slower growth is the '[new normal](#)', its leadership may start to [redirect](#) domestic [discontent](#) away from the Party towards [external enemies](#).

SO WHAT? – Impact on the EU

An armed conflict between China and its neighbours and/or the US over Taiwan, disputed territory or maritime features in the ECS and SCS, or following an unsafe military encounter in the next five to 10 years, could have huge [implications](#) for the EU and for the whole world. The EU's **economic prosperity** would be severely undermined. Financial markets would be [affected](#) quickly and seriously, spurring panic and global instability. Foreign portfolio investors that held more than [US\\$1 trillion](#) in onshore Chinese bonds and equities in 2022 would be in a rush to leave China. Fixed asset investors would likely remain and focus on supplying the Chinese market but could face the nationalisation of their assets in retaliation for financial sanctions imposed on China. The impact of

major capital shifts away from China would have knock-on effects on global markets and would trickle down to small investors in the EU that may have been unaware of their high-risk exposure.

Moreover, international trade would be impacted considerably. Containerised shipments between Asia and Europe would be compelled to [circumnavigate](#) the area of conflict, one of the [busiest](#) sea lines of communication, for an unknown period of time. This would entail additional shipping time and costs. A Mercatus Center research paper [states](#) that the costs of rerouting all traffic around the Straits of Malacca through Indonesia or Australia could amount to US\$279 million and US\$2.82 billion per month respectively. The cheapest end of this range approximately amounts to the losses of the Suez Canal [blockage](#) of 2021 on a daily basis. It is assumed that the actual costs would depend on the length of the disruption and whether energy shipments were concerned, too. Rerouting would become harder, [if not impossible](#), if the crisis were to expand geographically. As international trade would be seriously harmed, global supply chains would be [disrupted](#) to a much larger extent than they were during the COVID pandemic. According to CSIS estimates for 2016, [US\\$3.4 trillion](#) in trade passed through the SCS, or 21 % of global trade, using the Taiwan Strait as a vital route; EU-Asia trade accounts for almost half of this sea-borne trade. In 2021, EU trade in goods with all of [Asia](#) amounted to almost €1.6 trillion (China represented 16.2 %, Japan 2.9 %, South Korea 2.1 %, India 2.0 %, and [Taiwan 1.5 %](#)) and the EU-27 collectively were Asia's first trading partner, accounting for 26.7 % of Asia's trade. According to the EEAS, approximately [40 %](#) of EU foreign trade passes through the SCS. On top of the immediate economic impact of the disruption of sea-borne traffic, there would be the long-term economic implications of the likely massive destruction of industrial production capabilities in Taiwan and of the important industrial clusters of mainland China's three provinces of Guangdong, Fujian and Zhejiang, located opposite Taiwan.

Although estimates are difficult to come by, the economic implications of a Chinese invasion of Taiwan for the EU would by far exceed those of Russia's invasion of Ukraine, since the economies of China and Taiwan are much larger than those of [Russia](#) and Ukraine and the exposure of the EU's economy to China and Taiwan is far greater. While Taiwan's exports to the EU accounted for merely [7.1 %](#) of Taiwan's total exports in 2021, ranking behind China (28.2 %), the US (14.7 %) and Hong Kong (14.2 %), and could appear of minor importance, EU imports of integrated circuits from Taiwan accounted for [€7 billion](#) of total bilateral trade of almost €64 billion in that year. Taiwan is the centre of the world's smallest and most technologically advanced (below 10 nanometers) semiconductor manufacturing. It accounts for [92 %](#) of current manufacturing capacity for these high-end chips, with South Korea accounting for 8 %; currently, the EU represents merely [10 %](#) of global chips manufacturing. A 2022 Joint Research Centre [study](#) depicts the EU's high dependence on imports of chips from China and Taiwan and the declining shares of EU chips imports from Japan, South Korea and the US over time.

A shortage of chips that are difficult to substitute would be much more severe than [during the pandemic](#) and disrupt entire value chain ecosystems for every industry that uses (advanced) semiconductors. Disruptions of chips and other critical inputs and China's potential use of export restrictions on critical raw materials, as it did in 2010 [in violation of](#) WTO law with respect to Japan, and inputs in response to potential EU economic sanctions would slow down the implementation of the EU's **twin transition**, jeopardising the achievement of the EU's climate change objectives. Most EU industrial sectors would be compelled to stop production provisionally or, if hostilities persisted, for good, and to lay off workers on a massive scale. Rising unemployment and growing social unrest in EU Member States could be the result. A rise in intra-EU migration could ensue owing to the different levels of social benefits available in EU Member States. This could add to the existing significant inflow of [Ukrainian refugees](#) and [asylum-seekers](#) into the EU, exacerbating political tensions at EU, Member State and local levels. Fostered by Chinese [foreign influence operations](#), this could be the breeding ground for extremist parties that challenge **democratic stability** in the EU

and its Member States, as trust in democratic governance could erode and make societies more receptive to authoritarian rhetoric and disinformation. The lack of chips and other key industrial inputs would lead to skyrocketing consumer prices and once-affordable electronic items, such as smartphones, would become precious goods, fuelling criminality across the EU and undermining EU citizens' **societal wellbeing**. As a result of the chips shortage, EU Member States could also face challenges to maintain healthcare services such as medical interventions with high-tech medical equipment.

In terms of the EU's **global standing and security**, an armed conflict in the Indo-Pacific would require the EU as a normative power to craft a common [political](#) response of the utmost sensitivity, [to align](#) it with other democracies, notably the [G7](#), and to muster a broad-based global response in international fora in defence of the liberal rules-based international order. The EU would need to [reconcile](#) the interests and values of its foreign policy and, considering its [one-China policy](#), decide whether the widely accepted [reasoning](#) according to which Ukraine defends the EU's liberal democratic values against authoritarianism should also apply to Taiwan, which lacks statehood and is not located in Europe. Experts [argue](#) that the EU's failure to defend Taiwan's vibrant democracy would have 'disastrous strategic outcomes' for the EU and its allies. As an armed conflict would require the US's full attention, the EU, while it would not be [expected](#) to play a major military role in the Asian theatre of operation, would be required to take on greater responsibility for its own defence. Against the backdrop of the US facing a '[two-theatres dilemma](#)', which starts from the assumption derived from the 2018 National Defense Strategy that US forces would be unable to prevail in two simultaneous great power wars, experts argue that the EU should invest in its strategic autonomy to become less militarily dependent on US capabilities and to 'ensure that when China is able to invade Taiwan the potential redistribution of US efforts among theatres does not leave Europe in a vulnerable position'.

WHAT IF? – Scenarios

An escalation of Chinese aggression targeting Taiwan or other areas in the region could take many different forms. Three relevant scenarios are discussed below.

Scenario 1 – A Chinese air and sea blockade of Taiwan

By 2028, China had incrementally altered the status quo in the Taiwan Strait with salami-slicing tactics. Despite [Western export controls](#), it had caught up with Taiwan in advanced [semiconductor](#) manufacturing, even outcompeting it thanks to the vast economies of scale and gravitational pull of its huge market. Taiwan had lost its protective shield as a unique global hub for state-of-the-art chip manufacturing. After the gradual loss to China of a major share of its chips trade, Taiwan had faced mounting difficulties in sustaining the growing military budget necessary to acquire [asymmetric defence capabilities](#), exacerbating a rising [weapons backlog](#). In parallel, China had enacted legislation requiring foreign commercial shipments to and from Taiwan to be reloaded in Chinese ports and to be carried to and from Taiwan by Chinese cargo shuttles. To enforce its legislation applicable to Taiwan's trade, China had leveraged access to its critical raw materials and inputs required for the digital and green transition and offered inducements to foreign carriers to use [alternative](#) shipping routes through the Arctic. China had thereby gradually gained control of Taiwan's trade and essential food and [energy supplies](#).

Moreover, China had convinced large parts of the international community – especially developing countries, which were concerned about losing access to the large Chinese market and to Chinese loans for physical and digital infrastructure projects under Xi Jinping's signature Belt and Road Initiative ([BRI](#)) – of the argument, first [raised](#) in 2022, that the Taiwan Strait was [not](#) part of

'international waters'. China argued that it had 'sovereignty, sovereign rights and jurisdiction' over it, allowing China to restrict or interdict transit and operations by [non-Chinese](#) military vessels and aircraft if it considered its national security to be at risk. China referred to its 2021 Coast Guard Law, Article 25 of which [authorises](#) China's Coast Guard to designate 'temporary maritime security zones' and restrict or prohibit the passage or stay of vessels or personnel. [Challenging](#) the International Law of the Sea ([UNCLOS](#)) [yet another time](#), China started to require foreign military vessels/aircraft 'of concern' to ask for China's prior consent to their passage through and overflight over the Taiwan Strait, claiming that these vessels/aircraft posed a threat to peace in the Strait.

Ultimately, China – backed by Russia and Iran – set up an air and sea blockade of the Taiwan Strait and around Taiwan after conducting large-scale [trilateral](#) military drills in the SCS allowing for an overwhelming concentration of military forces in the theatre of operation and strengthening [China's Anti-Access/Area Denial](#) (A2/AD) capabilities directed against potential US military action. The three parties threatened to strike back with nuclear weapons if Western military vessels or aircraft interfered with the 'peaceful reunification' of China and Taiwan. The blockade was facilitated by the narrow victory of the pro-unification [Kuomintang](#) (KMT) party in the 2028 elections in Taiwan following China's unprecedented foreign [influence operations](#) aimed at discrediting the incumbent DPP government, a massive exodus of young Taiwanese to escape the threat of '[re-education](#)', i.e. forced political indoctrination, under CCP rule, China's repeated promises of massive economic stimulus funds and purchase subsidies to raise the quality of life among the more disenfranchised parts of Taiwan's population, and growing defeatism in Taiwanese society. Since the KMT government was democratically elected, thus representing the will of the majority of the Taiwanese people, and called on the US not to interfere in its internal affairs, the peaceful, albeit forced unification became a reality.

Scenario 2 – A Chinese amphibious invasion of Taiwan

By 2028, 75 year-old Xi Jinping had come under strong pressure domestically over the failure of his [ideologically-driven](#), state-led economic model to [make](#) China rich before it grows old. He therefore decided to respond militarily to what he considered 'provocative' developments surrounding Taiwan. The 2028 elections in Taiwan had seen Taiwanese overwhelmingly electing a DPP candidate for the fourth time in a row, and the prospects of Taiwan's peaceful 'reunification' with China became remote and elusive. The Taiwanese government had intensified its relations with national governments of a wide range of countries despite China's growing diplomatic, [economic](#) and [military](#) coercion aimed at reversing this trend. It had become common for committees from the US Congress and most EU Member States' parliaments to organise regular [visits](#) and [exchanges](#) on many policy matters with Taiwan's Legislative Yuan, whose [parliamentary diplomacy](#) gradually gained traction, as the concept of the one-China policy was interpreted with increasing flexibility. During President Joe Biden's second term, the US successfully aligned allies and partners of the Indo-Pacific and Europe towards strengthening relations with Taiwan. Therefore, to distract from domestic issues and to rally nationalist sentiment behind him, Xi ordered a risky amphibious invasion of Taiwan, seeking to exploit the US's preoccupation with its own 2028 presidential race.

Prior to the takeover, China ordered unprecedented cyber-attacks on Taiwan's essential infrastructure and cut the vital undersea [cables](#) around Taiwan, which disrupted the communication lines on the island and with the world, massively undermining Taiwan's resistance. After heavy fighting, China managed to take hold of Taiwan's beaches and cities, but fierce guerrilla resistance continued in Taiwan's mountainous areas. The resistance caused significant losses among the first wave of Chinese invaders and the number of Chinese casualties soared dramatically, when US forces, delayed by the need to breakthrough China's challenging A2/AD capabilities but with strong backing from Australia and Japan, entered the centre of hostilities. The US deployed innovative and

highly sophisticated military techniques and equipment developed and put to the test in the Pentagon's innumerable war games in recent years and ultimately, despite heavy losses on the US side, succeeded in inflicting a painful defeat on Chinese troops and the CCP.

Scenario 3 – A collision between a Chinese and a US military aircraft spirals out of control

In August 2028, a fighter jet from the PLA Air Force and an unarmed reconnaissance aircraft from the US Air Force collided above the Taiwan Strait following an [unsafe aerial intercept](#) by the Chinese fighter jet tasked with defending 'Chinese airspace'. Unlike a similar incident in [2001](#), this time diplomatic efforts failed to halt an extension of this incident to a wider armed conflict between China and the US. Bilateral relations in the SCS had deteriorated incrementally in the years beforehand to an all-time low, and Chinese interceptions of US warships and US reconnaissance aircraft had become the 'new normal'. In May 2023, for instance, a Chinese warship [nearly hit](#) a US destroyer during its transit through the Taiwan Strait, forcing it to slow down to avoid a collision, just one month after a Chinese J-16 fighter jet [intercepted](#) a US Air Force reconnaissance aircraft over the SCS, flying directly in front of the plane's nose.

As the US forces had [gained access](#) to [additional bases](#) in the Philippines, bolstering its presence in the SCS, China had declared an air defence identification zone ([ADIZ](#)) over the SCS, including Taiwan – as it did [in 2013](#) over the ECS – to reinforce its '[nine-dash-line](#)' claims, which an international [arbitration court](#) in 2016 declared inconsistent with UNCLOS. It also sought to strengthen its [A2/AD](#) capabilities that mainly target the US's ability to project power in the region, including possibly coming to Taiwan's defence in a contingency. This step had [increased](#) the risk of miscalculation and miscommunication and increasingly disrupted one of the world's busiest SLOCs for trade between East Asia and the rest of the world, including the EU. China had further escalated tensions by occupying the [Scarborough Shoal](#) coral reef, a traditional [fishing ground](#) which sits in the Philippines' exclusive economic zone (EEZ) and which the [US](#) had deemed to be [covered](#) by the 1951 US-Philippine Mutual Defense Treaty, although it was [not yet claimed](#) by the Philippines at that time. China had long [claimed jurisdiction](#) over the shoal and, to enforce it, had [imposed](#) an annual fishing ban. In [2012](#), China and the Philippines entered into a standoff over the shoal and China seized administrative control over it, triggering only a modest response from the international community, [including](#) the Obama Administration. China [did not](#) occupy the shoal in 2012, though, and left it for later.

WHAT NEXT? – What could be done?

To prepare a united EU response to several scenarios, which could contain elements of those described above, the European Council and the Foreign Affairs Council could – as NATO [did](#) in 2022 for the first time – put a dedicated debate on China's growing threat to Taiwan on its agenda to discuss the likely [political](#), economic, budgetary and military constraints that a collective EU response would face. An informal [meeting](#) of EU foreign affairs ministers (Gymnich) in Stockholm on 12 May 2023 held a strategic discussion on China, which will feed into the preparation of a recalibrated China strategy to be adopted by the next European Council. As transpired from that informal meeting, the emerging 'new' strategy is to [include](#) the EU's [de-risking](#) (as opposed to decoupling) approach to reduce excessive strategic vulnerabilities, but it remains to be seen whether it will link the implications of a potential Taiwanese contingency to the EU's own economic and non-economic security. At the 2023 [Shangri La Dialogue](#) in Singapore, Asia's premier annual defence summit, HR/VP Josep Borrell, while recognising that '[n]othing is far away in a globalised world', [stated](#) in the third plenary session (on 'Resolving regional tensions'): 'We are not a classic military alliance; we are not a traditional great power throwing its weight around. We don't have the 6th or

7th Fleet to be deployed in the Indo-Pacific.' However, given the outsized [role](#) of the Biden administration in [coordinating](#) the West's response to Russia's unprovoked aggression against Ukraine and the US's comprehensive military, economic and humanitarian [support](#) for Ukraine, NATO allies would be [expected](#) to contribute to collective [deterrence](#) and the EU, at least, to impose punitive economic and political sanctions against the aggressor, even though it could be one of the EU's [most important](#) trading partners and [suppliers](#) of critical industrial inputs and raw materials. A [transatlantic framework](#) for Taiwan could be developed, although prevailing public opinion [puts this in doubt](#).

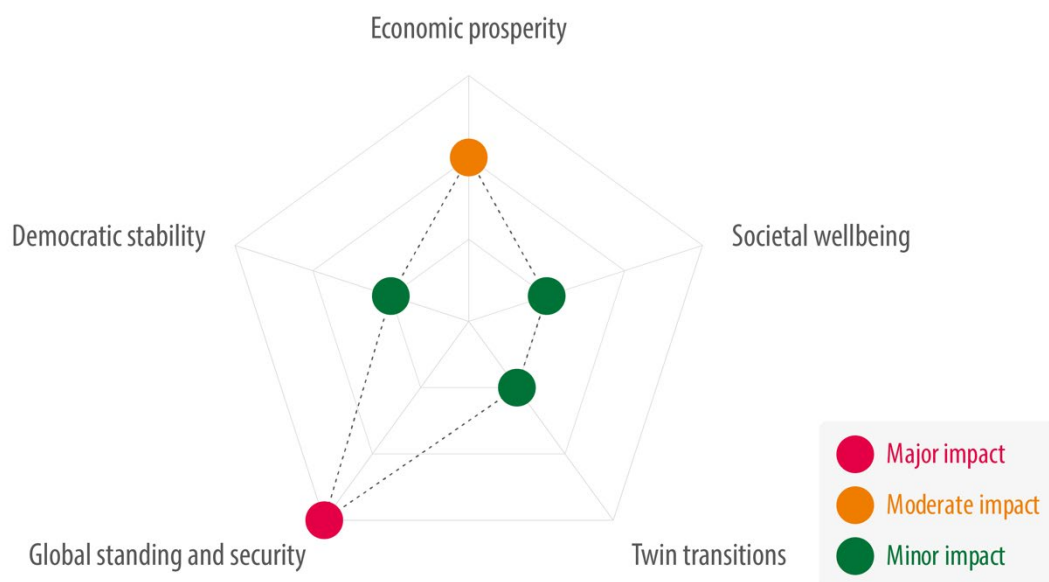
Preparatory work could follow two main tracks: first, by making a strong contribution to collective deterrence, in lockstep with Western allies and partners, notably the [US](#), and second by having contingency plans ready if deterrence fails; deterrence [means](#) making the cost for the aggressor of resorting to force higher than the aggressor's calculated benefit. [Deterrence](#) could start with a stronger defence of UNCLOS as a key pillar of the rules-based international order. EU [diplomatic pushback](#) against China's [rejection](#) of the 2016 international arbitral tribunal [award](#) under UNCLOS against its expansive claims and its [greyzone operations](#) in the SCS has not been impactful, as China has been unimpressed and has [continued](#) its course of action; this includes, as a serious [precedent](#), China's [disruption](#) of the freedom of navigation in international waters during its military drills around Taiwan in August 2022 following the visit of former Speaker of the US House of Representatives Nancy Pelosi to Taiwan. Signalling the EU's resolve to impose economic sanctions against China similar to those applied to Russia could act as a stronger deterrent than the EU's response to China's [challenge to international law](#) with respect to Hong Kong in 2020, which was [considered](#) rather timid and too late. Moreover, the EU could, in coordination with like-minded Indo-Pacific partners, push forward with enhanced naval deployments by EU Member States in the region under the EU Coordinated Maritime Presences (CMP) concept, in line with the 2021 EU Indo-Pacific [strategy](#). The strongest form of deterrence would be to take the US '[two-theatres dilemma](#)' seriously against the backdrop of one theatre having been opened in Europe and the potential opening of a second front in East Asia with dramatic consequences for European security. In response to the US's strategic dilemma and the uncertainty of its commitment to Europe under a president other than Joe Biden in the future, a promising option for the EU is to pursue strategic autonomy in security and defence, with a view to reducing its current military dependence on US capabilities by implementing the concrete actions set out in the EU's [Strategic Compass](#) for 2030.

The EU could further expand its relations with Taiwan as another form of deterrence, e.g. on resilient supply chains, under [alternative](#) arrangements, taking the [US-Taiwan Initiative on 21st-Century Trade](#) as a model. The EU, together with like-minded democracies such as Australia, Japan, South Korea and the US, could support Taiwan in resisting China's increasing hybrid warfare against the island, which is likely to gain traction in the run-up to the parliamentary and presidential elections in January 2024. Experts [expect](#) China to use 'all possible means – including launching cyber-attacks, sending agents, distributing money, and waging disinformation warfare – to ensure the next Taiwanese president will do China's bidding, and it might be the ideal way to achieve Beijing's goal, unification with Taiwan without a fight'.

To prepare for scenarios if deterrence fails, the EU could work on contingency planning for its most serious supply chain [vulnerabilities](#) regarding China and Taiwan, i.e. supplies of critical raw materials and inputs for EU industry in general and for the digital and green transition more specifically. It could step up coordination within the [EU-US Trade and Technology Council](#), implement the Indo-Pacific strategy's trade diversification objectives and accelerate the ratification of other trade deals, e.g. with [Chile](#), [Mercosur](#) and [Mexico](#). It could consider [stockpiling](#), as China itself [has done](#) in fear of new US export restrictions, and create strategic storage reserves of critical raw materials and explore the exploitation of new [discoveries](#) of mineral resources in the EU. The EU could create a favourable

regulatory environment for EU industry to [hedge](#) its exposure to geopolitical risks in the region by building up [alternative](#) and resilient supply chains, [considering](#) the time, [cost](#) and [competition](#) effects involved. EU small investors could be better protected against the financial fallout of a regional armed conflict by introducing a [stress test scenario](#) relating to an invasion of Taiwan for financial markets and by ensuring that rating agencies are transparent about EU investors' related risk exposure. The EU would also need to be prepared to evacuate its citizens from a war scenario in Taiwan and from affected parts of mainland China and to welcome Taiwanese refugees in Europe, even though many of them may prefer destinations in Asia or the US.

Figure 6 – Charting the potential impact of China's Taiwan ambitions



Source: EPRS.

References

- Blanchette J. and DiPippo G., ['Reunification' with Taiwan through Force Would Be a Pyrrhic Victory for China](#), Center for Strategic and International Studies (CSIS), November 2022.
- Brugier C. and Haroche P., [2027: The Year of European Strategic Autonomy](#), Groupe d'études géopolitiques, April 2023.
- Cancian Mark, Cancian Matthew and Heginbotham E., [The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan](#), CSIS, report launch event [video](#), January 2023.
- Ciani A. and Nardo M., [The position of the EU in the semiconductor value chain: evidence on trade, foreign acquisitions, and ownership](#), European Commission, Joint Research Centre, 2022.
- Goujon R., Kratz A. and Vest C., [The Global Economic Disruptions from a Taiwan Conflict](#), Rhodium Group, December 2022.
- Hosoda T., [Japan and the Taiwan 'Contingency'](#), Taiwan contingency scenarios, their probability and anticipated effects, Sinopsis, May 2023.
- Pettyjohn S., [War with China: Five Scenarios](#), *Survival*, Vol 64 No.1, February-March 2022, pp. 57-66.
- Rudd K., [The Avoidable War, The Dangers of a Catastrophic Conflict between the US and Xi Jinping's China](#), 2022.
- Rudd K., [The World According to Xi Jinping](#), *Foreign Affairs*, Vol. 101, Number 6, November/December 2022, pp. 8-21.
- Vest C. and Kratz A., [Sanctioning China in a Taiwan crisis: Scenarios and risks](#), Atlantic Council, June 2023.

Collapse of the internet

Tambiana Madiega and Stefano De Luca

WHAT? – What is at risk?

Introduction

In recent decades, the internet has become a critical technology infrastructure, and almost [two thirds](#) of the world's population use it nowadays for their personal, civic, commercial and professional activities. However, dependence creates vulnerability. Failure of the internet would have an impact on the way our society lives, works and is organised. While a total global collapse is [unlikely](#), major disruptions may arise. Three aspects are critical to ascertain how this could materialise: the underlying technological infrastructure, which is evolving with time; the fact that tech companies are increasingly shaping the internet architecture to seek new commercial strategies; and the increasing control of the digital sphere for political reasons.

Risk factors

Critical internet infrastructure is primarily subject to technological obsolescence that may lead to technical failures. In addition, geopolitical factors such as the ongoing war in Ukraine and the rising political tensions with China are threatening the security of the EU internet infrastructure. The possibility of hybrid attacks by hostile state and non-state actors on the infrastructure (e.g. attacks on cables, on satellites, cyber-attacks) may [arise](#). Furthermore, the commercial strategies of technology companies and the actions of states are increasingly [threatening](#) the technical ubiquity of the worldwide internet architecture (i.e. fragmentation of internet infrastructures).

SO WHAT? – Impact on the EU

Problem statement – challenges facing the EU

The world wide web or global [internet](#) is a network of interconnected networks based on terrestrial infrastructures, intercontinental submarine cables and satellites spanning the world. The internet network is run by private companies, universities and governments, and provides people with the experience of a seamless and open online public sphere where ideas and information can be exchanged, and goods and services traded. Our societies and economies are increasingly dependent on the internet to thrive, which makes them vulnerable to its disruption. While the EU has pledged to create a [Europe fit for the digital age](#) by 2050, the need for coordinated efforts to reduce vulnerabilities calls for profound reflection as to the potential impacts of the collapse of the internet. Against this backdrop, the risk of failure of the internet can be assessed by taking into account a range of technical, commercial and political factors that are within the control of internet actors or are imposed by external events and have an impact on citizens, Member States and the EU.

Problem description – the many flavours of internet collapse

The [internet ecosystem](#) rests on four main pillars: interoperability, interconnection, openness and resilience. From a technical standpoint, the internet is largely characterised by a distributed structure both at network and service levels aiming to ensure the [resilience](#) of the infrastructure. Because there is no single central point upon which the whole network relies and because network redundancies are – theoretically – in place, internet traffic can be routed through viable alternative

paths in case of malfunction or failure of some network components. However, despite these characteristics, the question of internet infrastructure vulnerabilities has long been raised at both [network](#) and [service](#) levels. In this respect, the notion of internet collapse refers to a range of events including malfunctions, failures, shutdowns and outage that affect the four internet pillars. Internet collapse might take many forms, ranging from unintentional technical failures to government-led actions and/or cyber-attacks by malicious actors:

- Internet infrastructure vulnerabilities primarily relate to **unintentional technical failures** of components necessary to provide a particular internet service. Such technical failures can take [many forms](#) and occur at network level (e.g. network and cable failures) or at service and applications level (e.g. failures in software components necessary to provide a particular service). Most such technical failures are unintentional – as opposed to failures resulting from third-party action – and have a wide range of causes, including power failures, hardware failures, accidents, or natural disasters such as hurricanes. Technical failures may also affect the [Border Gateway Protocol](#), the global routing system of the internet that enables connections between networks and [data centres](#).
- **Cyber-attacks** that take, for instance, the form of [aggressive practices](#), including malicious spikes in traffic among online service providers, might also play a role. There is a sense, too, that cybercrime is converging with [nation-state actors](#) and that this is leading to a higher number of attacks that clearly target essential infrastructures. ENISA stresses that state-sponsored cybercrime is nowadays one of the key threats. The [recent](#) hybrid warfare approach in Ukraine, merging physical attacks as reported below with cyber-attacks on internet infrastructure, has demonstrated that disruption of essential internet services is a realistic threat to the EU.
- **Physical attacks** that directly damage land-based telecommunications lines (e.g. optical fibre and mobile towers) and strikes on civilian energy infrastructure that trigger power outages might also affect the functioning of the internet ecosystem. Any [disruptions](#) affecting the global submarine cable network would also have severe consequences for civilians and for countries that depend on such cables to ensure their national security. At present, submarine cables represent the internet's 'backbone', with 99% of international telecommunications still being provided through them. The conflict in Ukraine raised awareness about possible [attempts](#) by state-backed actors to damage such critical infrastructure.
- **Technology dependency** might indirectly affect the reliability of internet infrastructure and services. The ownership of strategic submarine internet cables may pose a [risk](#) of foreign state interference through the insertion of back doors to carry out espionage and increase the power of some nations to route global internet traffic. Similar risks of espionage and other possible security implications have been raised with regard to [5G equipment](#), [satellite infrastructures](#) and [data centres](#) provided by non-EU entities.
- The vulnerabilities of internet infrastructure also relate to the risk of **internet fragmentation or splinternet**, i.e. the different ways the internet technical architecture evolves. An [EPRS study](#) shows that this broad concept refers to the disruption caused by various technological, commercial or political factors that affect the internet's pillars of interoperability, interconnection, openness and resilience. Technological factors like the lack of compatibility of some technical protocols can affect internet users' experience (e.g. [migration between IPv4 and IPv6](#)). However, commercial factors are increasingly driving the fragmentation of the internet. For instance, private companies like [Google](#) (Alphabet) and [Meta](#) (Facebook) have started to roll out their own independent technical infrastructure – including submarine cables and data centres – and develop their own protocols. Such actions, used as strategic tools by companies to control digital markets, may [result](#) in incompatibilities at application level and in a less interoperable and more fragmented internet. Finally, fragmentation can be driven by political factors, with states and intergovernmental powers such as Russia, the US, the EU or China increasingly taking strategic decisions and adopting legislation to shape the internet around their own values and policies.

Impacts at multiple levels – internet users, Member States and the EU

All **internet users** – citizens and businesses – would be affected by internet failure. Access to many online services would be disrupted by interruptions to the basic infrastructure and result in [losses for businesses](#) and for the worldwide [economy](#). A global failure that cuts the internet for all users worldwide would have a [major impact](#) on many essential offline services as well. In addition, cyber-attacks can temporarily [disrupt](#) internet services across Europe. Internet network and service failures also have a detrimental impact on **Member States'** critical infrastructure, thereby affecting their public policies. In May 2021, Ireland's health service fell victim to a '[catastrophic](#)' ransomware attack, which led to a shutdown of its ICT system, with widespread cancellation of patient services. Furthermore, the way the internet infrastructures are designed, and particularly the phenomenon of splinternet, might have an impact at **Union level**. EU policymakers must factor in this risk while developing new policy approaches such as [strategic autonomy](#) and European [digital sovereignty](#).

Risk aggregation

Given ongoing **climate change**, critical internet infrastructures are likely to be increasingly exposed to [weather conditions](#) and [natural disasters](#) that cause failures. Another factor to take into account when assessing the risk probability of internet failure is **the pace of innovation**. The transmission capacity of communication networks is not limitless and the exponential growth in demand for internet-based services could lead to a '[capacity crunch](#)' that would limit the availability of communication networks and could lead to internet failures. Furthermore, the **strategies adopted by firms** also have an impact on how the risk of internet failure could materialise. For instance, the lack of open and fully interoperable internet-based service applications leads to users being caught in dominant platforms, the failures of which may in turn [affect](#) a large number of users.

WHAT IF? – Three possible scenarios

Scenario 1: Minor disruption – slowdown or temporary interruption of the internet

What if a minor internet disruption arises?

The most probable risk scenarios for internet collapse involve occasional and transitory technical failures of the internet's infrastructure, services or applications that are caused, for instance, by natural disasters, human accidents or small-intensity hybrid attacks.

Hurricane Sandy [knocked out](#) several key exchanges where undersea internet cables linked North America and Europe, leaving the entire network between North America and Europe isolated for a number of hours in 2012. Undersea internet cables – such as the [SEA-ME-WE3](#) that links Asia, Australia, Africa and Europe – also suffer regular faults due to contact with ship anchors, resulting in slower connections to large regions, as network traffic needs to be rerouted until the cable can be repaired. However, this kind of damage has no significant [effect](#), because internet traffic simply uses one of many possible alternate routes to reach its destination. In fact, a 2022 study [shows](#) that, for the vast majority of EU territories, there is only a low probability of internet outage after a submarine cable network failure given the high redundancy ensured by the presence of alternative infrastructures (e.g. alternative land and undersea cable paths).

Common cyber threats such as Distributed Denial of Service (DDoS) that aim to deny access to data or services are on the [rise](#). These attacks constitute another cause of low internet disruption, as they affect performance and lead to data loss and service outage. DDoS attacks are getting larger and more complex, moving towards mobile networks and devices connected to the Internet of Things (IoT). In addition, cyber-attacks are being used in the context of domestic [civil unrest](#) and

cyberwarfare. For instance, the [cyber-attack](#) on Viasat's KA-SAT network, just before Russia's invasion of Ukraine in February 2022, affected several tens of thousands of fixed broadband users across Europe. However, while incidents of this kind are disruptive, the internet network and services would not be significantly impaired given the overall resilience of the technical infrastructures.

Scenario 2: Moderate disruption – fragmentation of internet users' experiences

What if a moderate internet disruption arises?

This scenario involves long-lasting disruptions of the internet's infrastructure, services or applications that could materialise in different ways and strongly impact the economy and people's trust in the technology.

Long-lasting technical internet failures are [documented](#) particularly in relation to large-scale cyber-attacks on essential infrastructure and essential online services. However, ENISA [expects](#) a wide range of new cybersecurity threats to emerge by 2030 based on our increased dependencies on and the popularisation of new technologies such as [Metaverse](#). In this scenario, the day-to-day life of people, businesses' transactions and industrial production, all of which are widely reliant on internet-based solutions (e.g. cloud computing), risk being strongly disrupted. For instance, an [attack](#) on Estonian banks, media outlets and government websites came close to bringing the country to its knees for four days in 2007.

Cybersecurity threats may also significantly alter end-users' trust and confidence in internet technology in the longer term. The Snowden revelations unleashed many [discussions](#) on data surveillance by governments, and the fact that leading internet companies [track users](#) extensively across devices and services to monetise their data has faced a lot of criticism. The multiplication of frauds or [data breaches](#) due to repeated cybersecurity failures could also have a detrimental impact on user experience. As shown in a Europol [report](#), novel, hybrid and emerging threats such as data compromise practices (e.g. for financial gain or espionage) and AI-enabled disinformation and deepfakes are proliferating, contributing to ideological conflicts and disrupting elections.

Furthermore, a risk of splinternet has been [identified](#), driven by both technical and commercial interests. In this scenario, [fragmentation of the user experience](#) would result in different user experiences of the internet, governed by different laws, while regulation and [fragmentation of the technical layer](#) would challenge the interoperability of the internet, with regulation fostering the differentiation of internet ecosystems. In this regard, the General Data Protection Regulation (GDPR) and the recent EU regulation imposed on [digital gatekeepers](#) ensure a [specific set of rules](#) governing the provisions of internet services in the EU compared to other jurisdictions. Along the same lines, if countries adopt their own regulations with regard to innovative services like [Metaverse](#), a likely outcome is a [splinternet](#) where products, users and data are enclosed in separate pools that would force the industry to create [localised versions](#) of their products. Similarly, [data localisation](#) requirements and restrictions on cross-border data transfer around the globe are likely to expand as nations become more concerned with security and data sovereignty. This could become a major factor behind a partial splinternet.

Scenario 3: Major disruption – the end of the global internet

What if a major internet disruption arises at global level?

In this scenario, a major incident or a nationally driven policy would arise that would definitively impact the functioning and ultimately the architecture of the internet network as we know it today.

A major internet disruption could occur firstly if the world was suddenly without internet connection – possibly due to a major event like a structural breakdown or a global war with physical and cyber-

attacks on internet infrastructure. Such a general internet outage would severely [affect](#) monetary transactions and the whole economy, with an estimated cost of around [€6 billion](#) per day for the EU. However, this scenario appears improbable given that the distributed design of the internet architecture provides substantial built-in [resilience](#) to most [threats](#), making a total and sustained global collapse highly unlikely. Furthermore, experts highlight that the effect of the [capacity crunch](#) would likely be mitigated by technological breakthroughs like [quantum](#) technology in the future.

Another possible scenario would be in the event of a total splinternet driven by political choices. A recent [UN report](#) warns that governments are already increasingly resorting to internet shutdowns; the report shows practices of intentionally restricting, disrupting or slowing down connections, selectively blocking certain platforms or imposing a complete blackout (i.e. when online connectivity is fully impaired) within a given geographic area. Such strategies risk morphing into [longer-term controls](#) with permanent limitations on internet access and with [authoritarian countries](#) creating an online information environment that they can fully command. In 2019, Russia introduced a [Sovereign Internet Law](#) to centralise State control over the internet within its borders. Since the 1990s, China has been developing a [Great Firewall](#), i.e. a system of internet controls that stops citizens from connecting to banned foreign websites, is investing massively in [digital policing tools](#) (e.g. facial recognition systems) and is working towards changing the current worldwide [internet architecture](#). In this scenario, the current [role of ICANN](#) in shaping the internet architecture would be challenged and the [fragmentation of multi-stakeholder governance](#) could, in an extreme form, lead to incompatible technologies.

Such a full-scale splintering could have a [catalytic impact](#) as it could lead to commercial, civil and political isolation. Parallel internet ecosystems – not interconnected – would emerge, which would affect the project of [globalisation](#) in the long term. From a geopolitical point of view, the implications of a total splinternet led by governments are potentially far-reaching. China is controlling information infrastructure as part of its [discourse power](#) strategy in other regions of the world, particularly in the Global South. While the global internet is [breaking apart](#), at least [three main different internet ecosystems could emerge](#), led by the US, China, and the EU. The risk of having a digital confrontation in cyberspace between China and the US, leaving the EU stranded without real options to conduct its own policy, has been [highlighted](#).

WHAT NEXT? – What could be done?

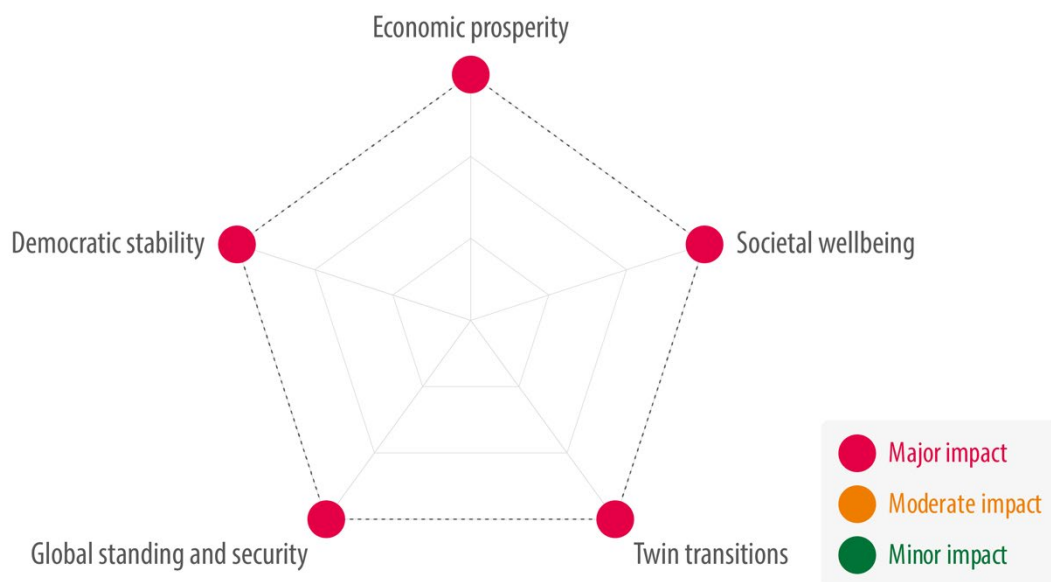
Different levels of internet disruption require different risk mitigation strategies. A general policy response to the **minor internet disruption** scenario would be to boost multilateral engagement by countries to [fight extreme weather events](#) such as the [rise in sea levels](#), which would be able to disrupt critical infrastructure such as the internet. Disruption of submarine cable internet traffic due to human accidents or technical failures might be reduced by establishing cable protection zones banning certain types of activities by vessels (e.g. anchoring and fishing) close to strategic choke point corridors, and by increasing the repair capabilities of EU submarine cables. Considering that a hacker can infiltrate certain systems through a single infected computer, raising general cybersecurity [awareness](#) (e.g. the importance of software updates) would mitigate cyber-attacks on online services and supply chains. In addition, since a cybersecurity incident in one product could affect the entire supply chain, social and economic activities across the internal market could be protected by setting default cybersecurity requirements for digital products and components used in Europe, and by increasing reports on cybersecurity breaches.

Regarding the **moderate internet disruption** scenario, reinforcing measures to ensure a secure and resilient critical infrastructure underpinning the internet ecosystem would be of paramount importance. A strong cybersecurity strategy focusing on building collective EU capabilities to

respond to major cyber-attacks and better tackle cybersecurity threats at the core of critical internet infrastructure would mitigate internet disruptions in the EU. Trust and confidence among EU internet end-users could also be enhanced by ensuring that internet services are safe, fair and beneficial for all. European data legislative frameworks protecting citizens' and businesses' data, as well as control over data backbones against foreign interference, might constitute a viable policy response. Technical and commercial splinternet effects might be mitigated by international cooperation to maintain a multi-stakeholder approach to internet governance, and by setting up mechanisms to promote vibrant competition in internet platforms outside the realm of the existing dominant technology companies.

A general policy response for the **major internet disruption** scenario would be to increase European investment in the roll-out of future-proof broadband infrastructure and financing new strategic submarine cable routes to avoid existing choke points. Building a sovereign satellite system serving as a back-up for European internet infrastructures, as well as planning defence against and responses to potential attacks on submarine cables with military allies, might also avoid a total internet collapse for Europe. To avoid a total splinternet scenario driven by political choices, promoting the above-mentioned international and multi-stakeholder approaches to internet governance, and promoting technologies resilient to government censorship (e.g. end-to-end encryption and quantum technologies), would be key.

Figure 7 – Charting the potential impact of the collapse of the internet



Source: EPRS.

References

- Boucher P., [What if social media were open and connected?](#), EPRS, European Parliament, May 2018.
- ENISA, [ENISA Threat Landscape 2022](#), November 2022.
- Perarnaud C., Musiani F., Rossi J. and Castex L., [Splinternets: Addressing the renewed debate on internet fragmentation](#), STOA study, European Parliament, July 2022.
- Van Woensel L. and Pierer C., [What if the internet failed?](#), EPRS, European Parliament, September 2021.

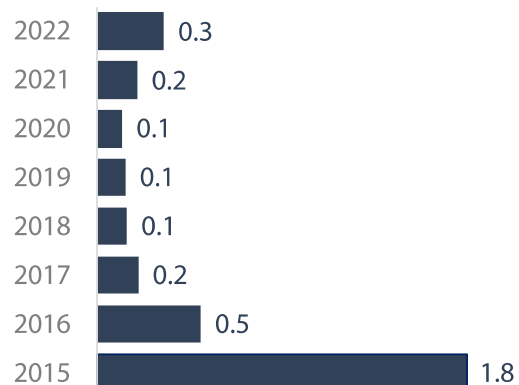
Instrumentalisation of irregular migration at EU borders

Costica Dumbrava

WHAT? – What is at risk?

Deepening conflicts, political instability and economic crises around the world are forcing many people to leave their homes. By mid-2022, there were 103 million [forcibly displaced people](#) worldwide, about half of whom had crossed international borders. Conflicts and instability in Syria, Venezuela, Afghanistan and South Sudan gave rise to about 18 million recognised refugees. In Europe, Russia's war of aggression against Ukraine forced [8 million](#) people to flee the country. On top of this, food and water shortages and [climate change](#) further dislocate people and intensify internal displacement and international migration. This pressure can already be felt at the EU's borders, where the number of irregular border crossings started to rise again, reaching [330 000](#) in 2022 – the highest recorded number since 2016 (see Figure 8).

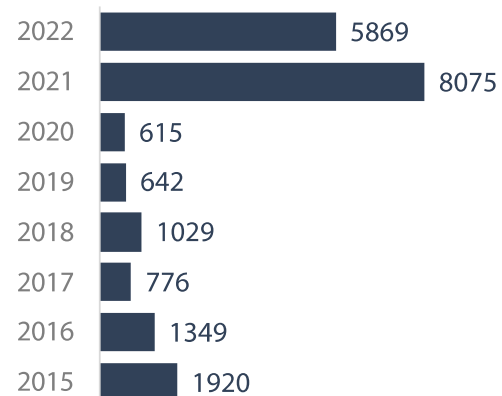
Figure 8 – Detections of irregular crossings at the EU's external borders (in millions)



Data source: [Frontex](#).

Beyond this well-known risk, migratory push factors can and are sometimes exploited by governments or other actors aiming to put pressure on or to destabilise the EU by creating or sponsoring irregular migration. The [actions](#) of the Belarusian government in 2021 provide a clear example of a situation of instrumentalisation of irregular migrants. In response to EU sanctions, the Belarusian president orchestrated a crisis at the EU's external borders by facilitating and encouraging third-country nationals to cross irregularly into the EU. This led to a sudden increase in irregular crossings (see Figure 9) and prompted a series of [emergency measures](#) in several Member States and the EU.

Figure 9 – Detections of irregular border crossings along the eastern borders route



Data source: [Frontex](#).

Belarus has not been the only country to use such tactics against the EU. For example, in February 2020 the [Turkish](#) government allowed 13 000 people to cross the border into Greece; in

May 2021, Morocco let about 10 000 people cross irregularly into the Spanish enclave of Ceuta. It is also [argued](#) that 'igniting migrant flows towards Europe' has been a feature of Russian foreign policy – at play in Syria as well as in Ukraine.

A recent [paper](#) uncovered as many as 40 cases of instrumentalisation of migrants perpetrated against the EU between 2014 and 2020. As previous [research](#) has shown, instrumentalisation is an old geopolitical tool used for several purposes (e.g. nation building, territorial expansion, market strategy). The challenge of this strategically engineered migration does not lie necessarily in the volume of people mobilised, as it may take only a few people to be stranded at the border to create a humanitarian crisis. As an attractive destination for migration and because of its geographical position, the EU has been and is likely to remain a target of instrumentalisation of irregular migrants.

SO WHAT? – Impact on the EU

The increasingly unstable and hostile international environment amplifies the risk of unfriendly countries resorting to the instrumentalisation of irregular migrants to destabilise the EU. In the context of the continued war in Ukraine, the risk is that the instrumentalisation of migration becomes the '[new normal](#)' at the EU's eastern borders. As part of its relentless hybrid attacks against the EU, Russia is reported to be preparing to launch [new flights](#) from North Africa and the Middle East to Kaliningrad – a Russian exclave bordering the EU. Beyond Russia, the EU's resolve to co-opt third countries in the fight against irregular migration, including using negative incentives (suspension of visas, trade restrictions on non-cooperative countries), may be met with instrumentalisation tactics aimed at resisting EU demands, securing concessions, or extracting more resources.

The instrumentalisation of irregular migrants is usually part of a broader campaign or strategy of [hybrid warfare](#). Unlike in a military confrontation, where an attacker may use bullets or missiles to try to breach the borders, in situations of instrumentalisation migrants themselves become ammunition in an undeclared attack against borders. This cynical tactic puts the receiving country in a difficult situation. As caving in to external pressure is often politically costly and morally problematic, the country under attack is faced with a dilemma between taking resolute action to protect its borders and treading carefully to safeguard the fundamental rights and alleviate the suffering of the individuals trapped in between borders.

Relying heavily on containment measures may be unfeasible, costly, and legally problematic. Even before the Belarusian attempt to instrumentalise irregular migrants, tensions at the eastern borders had pushed several Member States to build [fences](#) at their borders with Belarus and Russia. In October 2021, 12 Member States sent a [letter](#) to the Commission asking for funds from the EU budget to build 'physical barriers as a measure for protection of the EU external borders', arguing that this was in the interest of the whole EU. Such requests have been [reiterated](#) recently by several Member States. While they appear to be effective border protection measures, it is [disputed](#) whether physical barriers can prevent irregular migration. As shown by recurrent [incidents](#) at the fences surrounding Spanish Ceuta and Melilla, border fences also do not protect against instrumentalisation of irregular migrants by third countries. Moreover, sealing off external borders may undermine the EU's legal obligations to provide international protection to those in need.

In 2021, the EU used a combination of [measures](#) – including sanctions, carrier blacklisting, visa restrictions, diplomatic pressure, humanitarian assistance and border measures – to fend off Belarusian attempts to instrumentalise migration. The crisis also triggered a new legislative [proposal](#) aimed at establishing a permanent EU tool to deal with irregular migrants in situations of instrumentalisation. However, there are concerns that reinforced border security and emergency measures to tackle instrumentalisation may come at the expense of migrants' [rights to due process](#),

most importantly the right to apply for asylum and the prohibition of non-refoulement. More broadly, strong containment measures tend to weaken the EU's standing as an international actor that sets norms and values and abides by norms. This may be exactly what the perpetrators of instrumentalisation are hoping for in order to publicly 'embarrass' the EU, weaken its unity and undermine its credibility as an actor promoting democracy and fundamental rights globally.

The Belarusian case demonstrated once more the need for a comprehensive EU asylum and migration system that caters for all aspects of migration, including the risk of instrumentalisation. Delays in reforming the existing rules and in implementing border management policies allow perpetrators to [exploit vulnerabilities](#) in the system and to sow instability in the EU by exacerbating divisions over responsibility for asylum and popular anxieties about migration. Recent developments, such as unprecedented solidarity with Ukraine and gradual progress on the pact on migration and asylum, are encouraging. However, a renewed focus on [cooperation with third countries](#) aiming to [outsource migration control](#) and international protection is risky, as it may 'render the EU hostage to the whims of foreign political forces'. An additional complication is that Member States maintain a complex web of bilateral and multilateral migration arrangements with third countries that fall outside the EU framework, and might thereby amplify risks of instrumentalisation of migrants that might not be mitigated through a comprehensive EU approach.

WHAT IF? – Scenarios

Whereas cases of instrumentalisation of irregular migrants are difficult to predict, they will most likely continue to occur, given the increasingly unstable international environment. The scenarios below capture four possible developments of this risk through the lens of its implications for the EU's external borders and possible policy responses.

Figure 10 – Possible scenarios for the instrumentalisation of irregular migration

		Impact	
		Low	High
Probability	High	Scenario 2 Stressed borders (Moderate risk)	Scenario 4 Hardened borders (High risk)
	Low	Scenario 1 Friendly borders (Low risk)	Scenario 3 Collapsed borders (Moderate risk)

Scenario 1: Friendly borders

In the most positive scenario, calm and order is restored at the EU's external borders. This could be the result of improvements in the international environment – e.g. the end of the war in Ukraine, the replacement of authoritarian regimes with democracies in the EU neighbourhood – combined

with swift and effective reform of the EU migration and asylum policies. A fair and balanced approach on cooperation with third countries on migration and border management would allow the EU to rely on these countries without becoming vulnerable to undue pressure. The risk of instrumentalisation remains, but the EU would have developed an orderly approach to tackle it, combining clear rules, appropriate measures across different policy areas and effective coordination mechanisms. Adequate monitoring and foresight tools (early warning systems) would allow the risk of instrumentalisation to be identified early and a policy response to be activated before crises escalate at the borders, thus preventing the violation of migrants' rights and reducing human suffering. Irregular migrants who eventually arrive at the borders would be dealt with according to clear and fair rules.

Scenario 2: Stressed borders

In the absence of significant changes both externally and internally, the EU borders are likely to remain under stress. Hostile neighbours will try to find new vulnerabilities (e.g. Kaliningrad, new sea routes) and exploit divisions in Europe triggered by popular anxieties about migration. The slow or partial reform of EU asylum and migration policy would leave policy gaps to be filled by ad hoc, uncoordinated, emergency measures. This would likely result in containment measures that will prioritise border security over migrants' rights. A failure to address the needs and grievances of third countries (and of their nationals) in EU external policy on migration (such as a doubling-down on the use of negative incentives to tackle irregular migration) would further alienate these countries and amplify the risk of instrumentalisation of irregular migration.

Scenario 3: Hardened borders

In the context of a deteriorating international environment, the EU will become a constant target of instrumentalisation of irregular migrants along the eastern borders and other migratory routes (in the Balkans and the Mediterranean). This would force the EU to take swift action before managing to reform its migration and asylum system. With disagreements persisting on asylum and migration reforms, the focus will fall on the few aspects on which a majority of Member States seem to agree, namely reinforcing borders and security. This would lead to increasing investment in border security, erecting border fences wherever possible, possibly with EU funding (once the Commission eventually agrees to use the EU budget to finance them). Heavily fenced, securitised and technologised borders will create formidable obstacles to those seeking international protection, worsening the situation of irregular migrants. The EU will continue to externalise its asylum policy by creating asylum reception centres in third countries, which will further alienate these countries and thus heighten the risk of instrumentalisation of migration.

Scenario 4: Collapsed borders

In a last and most dramatic scenario, the EU's external borders will disintegrate to allow Member States to take full control over their national borders. Multiple and repeated hybrid attacks against the EU borders, including attempts to instrumentalise irregular migrants along different migratory routes, would amplify divisions between Member States. Under pressure from powerful anti-immigrant parties, they would call for Treaty reform to reappropriate powers in the area of migration and borders. Together with the external border, the Schengen area without internal border controls will be dismantled. This would undermine freedom of movement across the EU and generate significant economic costs (a weaker European single market) as well as important social and political costs. The risk of instrumentalisation of migration will remain, but it will be dealt with separately and with varying success by the Member States.

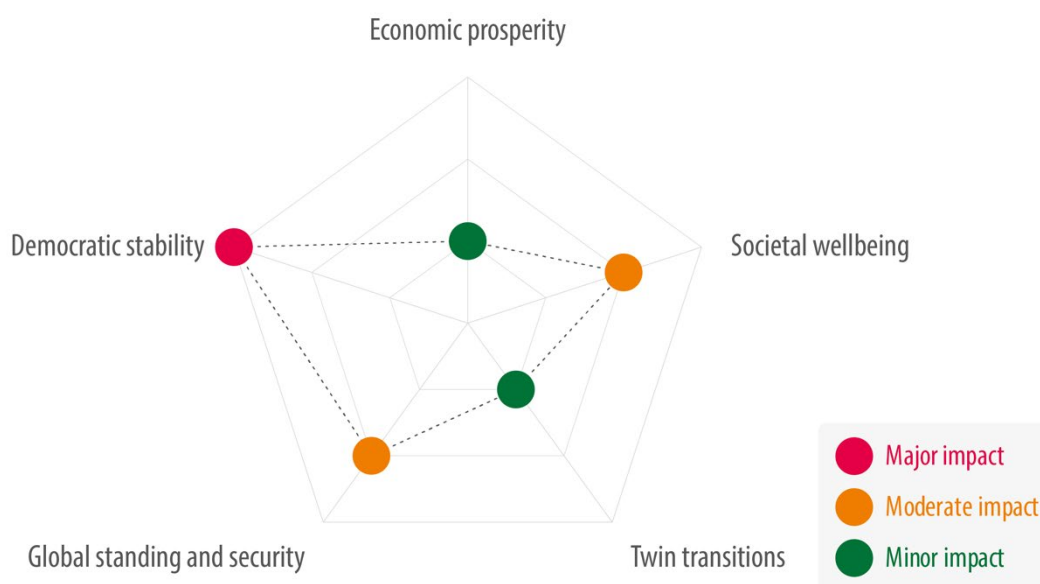
WHAT NEXT? – What could be done?

Addressing cases of instrumentalisation of irregular migrants typically requires a combination of tools and approaches that go beyond the scope of migration and border policies. The Belarusian crisis allowed the EU to develop a [toolbox](#) to tackle cases of instrumentalisation of irregular migrants and to test a new EU crisis management system, the [Migration Preparedness and Crisis Blueprint](#) (Blueprint network). These [positive developments](#) are a good starting point for developing a comprehensive approach to address future situations of instrumentalisation.

Effective management of external borders and a well-functioning EU asylum and migration system, based on clear, fair and enforced rules, would remove vulnerabilities that make instrumentalisation of irregular migrants an attractive tactic for hostile governments. Moreover, enhanced migration cooperation with third countries, in a way that takes into consideration the interests and challenges faced by these countries, could also diminish the risk of instrumentalisation.

Whereas strengthening borders is crucial for tackling instrumentalisation, this needs to comply with the EU's legal obligations to protect human rights, in particular the right of people in need to apply for international protection. At operational level, improving coordination between existing EU crisis mechanisms will be essential. This may entail establishing a dedicated structure to deal with this challenge to ensure adequate monitoring, early warning, knowledge sharing and operational coordination, while guarding against the risk of duplication and policy domain bias (e.g. by considering various aspects related to migration, security, foreign affairs, and humanitarian aspects).

Figure 11 – Charting the potential impact of the weaponisation of irregular migration



Source: EPRS.

References

- Dumbrava C., [Walls and fences at EU borders](#), EPRS, European Parliament, October 2022.
- Dumbrava C., Luyten K. and Orav A., [EU pact on migration and asylum: State of play](#), EPRS, European Parliament, December 2022.
- Fakhry A., Rácz A. and Parkes R., [Migration instrumentalization: A taxonomy for an efficient response](#), European Centre of Excellence for Countering Hybrid Threats (Hybrid CoE), 2022.
- Greenhill K., [Weapons of mass migration: Forced displacement, coercion, and foreign policy](#), Cornell University Press, 2010.
- Hahn H., [Keeping a cool head: How to improve the EU migration crisis response](#), European Policy Centre (EPC), October 2022.
- ICMPD, [Migration outlook 2023](#), International Centre for Migration Policy Development, 2023.
- Mentzelopoulou M-M., [Instrumentalisation in the field of migration and asylum](#), EPRS, European Parliament, November 2022.
- Moreno-lax V., Allsopp J., Tsourdi E. and de Bruycker P., [The EU approach on migration in the Mediterranean](#), European Parliament, Policy Department for Citizens' Rights and Constitutional Affairs, June 2021.
- Peerboom F., [Protecting borders or individual rights? A comparative due process rights analysis of EU and Member State responses to 'weaponised' migration](#), European Migration Papers, 2022.
- Pichon E., [The external dimension of the new pact on migration and asylum: A focus on prevention and readmission](#), EPRS, European Parliament, October 2021.

Extreme weather events: Droughts and water scarcity

Liselotte Jensen and Antonio Albaladejo Román

WHAT? – What is at risk?

In their sixth assessment report (AR6), the Intergovernmental Panel on Climate Change (IPCC) [evaluated](#) that high to very high risks linked to climate change could occur already from 1.2°C global warming, i.e. at a lower warming level, meaning sooner, compared to the earlier AR5 report. At around +2°C, risk levels, specifically those associated with extreme weather events, move from high to very high. Moreover, Europe is the [fastest warming continent](#) in the world, with temperature increases more than twice the global average over the past 30 years according to the World Meteorological Organization (WMO), a trend that is expected to continue.

No matter the type of extreme weather event, it can pose a threat to our health, economies and ecosystems. Risks and vulnerabilities depend on the specific event, its timing and where it occurs. While extreme weather events also include storms, heavy precipitation, heatwaves and cold spells, this section focuses on the risks associated with droughts and water scarcity.

Climatic conditions are already leading to water stress, primarily in southern Europe, but expanding into central and western Europe. Water stress is the general term for drought and/or water quantity, quality or accessibility, negatively impacting the availability of water resources. According to a [2021 report](#) from the European Environment Agency (EEA), 20% of Europe's territory and 30% of its population experience water stress on an annual basis, figures that are expected to rise with further warming.

SO WHAT? – Impact on the EU

Droughts affect our ecosystems and several economic sectors directly (some examples are presented below). During dry spells, water levels in rivers and lakes decrease, as do the moisture levels across various ecosystems, reducing their resilience to other threats. If water reservoirs are not able to replenish during the seasons in which they normally would, this can have a cascading effect on water availability and exacerbate the impact of droughts throughout the year. However, reduced rainfall is not the only driver of water stress.

The Alps, often referred to as the water towers of Europe, feed key European river systems and provide freshwater resources across the region from their melted snow runoff in summer. With glacial retreat [linked](#) to global warming, especially [noted](#) in the Swiss Alps, the reduced ice cover and increased temperatures lead to reduced accumulation of snow and consequently reduced runoff. According to the AR6, [projections](#) for 2050 show a 25% reduction in both winter and summer water flow from the southern European Alps. With droughts becoming more frequent and water supply from the Alps declining, while temperatures keep rising, [over-abstraction](#) from groundwater resources is likely to increase. This in itself increases risks of drawing in polluted or saline water, in the case of coastal aquifers especially, causing further water stress and water scarcity.

Agriculture is one of the human activities most affected by extreme weather events, especially by droughts and water scarcity, which costs the EU an estimated €2 billion to €9 billion [each year](#). Water

availability in particular is crucial for agricultural production, which consumes around [40%](#) of all water used in Europe. Environmental factors, such as heat, sunlight, soil humidity, and precipitation levels, have a direct effect on crop yields and their nutritional value, impacting the whole agri-food chain and influencing food prices. The year 2022 clearly illustrated the interlinkage between water stress and food affordability in the EU (and overall EU food security), when significant climate-induced [reductions](#) of agricultural yields in Europe, combined with high energy prices and commodity shortages resulting from the war in Ukraine, led to price increases of basic staple goods.

For the energy sector, the most direct impact is on hydropower, where water levels determine energy production. For example, due to persistent drought, hydropower production was severely [impacted](#) across southern Europe in 2022 compared to the previous year. In addition, most thermal and nuclear power plants require water as a cooling agent; in Europe, the energy sector accounts for [28%](#) of water use. According to a recent report, [87%](#) of global electricity production is dependent on water access. The report further notes that nuclear plants in southern France are likely to be faced with the largest percentage increase in consecutive dry days, increasing the need to find [alternative cooling solutions](#). As water taken from rivers to cool power plants is released at a higher temperature, limits are set for the volumes that can be discharged in relation to the water levels, in order to protect wildlife and ecosystems in rivers. This is a frequent limiting factor that forces the southern French nuclear plants to [reduce production](#) when water levels in rivers are low.

Only [1.5% of the total annual economic losses](#) linked to droughts are from impacts to inland water transportation. However, this threat is likely to increase in the future, as the intensity and frequency of such extreme events rise. For example, the 2018 drought resulted in Germany halting transport on its rivers due to low water levels. This had [cascading effects](#) on supply chains, as not only did inland shipping transport stop but production of industrial commodities had to stop due to a lack of transport, eventually having a severe impact on overall economic output.

Biodiversity is also impacted; the [resilience of ecosystems](#) declines, augmenting the threat of wildfires, and species migration or increased mortality. The collapse of specific ecosystems can further trigger destabilisation of water systems, leading to the loss of groundwater and eventually causing desertification.

As the European Parliament's 2022 [resolution](#) on the consequences of drought, fire and other extreme weather phenomena outlines, the above are just some examples of the economic impacts of droughts and water scarcity. Ultimately, the availability of clean and safe drinking water is also at risk.

WHAT IF? – Scenarios

The latest 10-year average [assessment](#) by the WMO puts the average global temperature¹ at 1.14°C above pre-industrial levels. The United Nations Environment Programme (UNEP) [2022 emissions gap report](#) saw no credible scenario for staying below 1.5°C warming, stating that policies in place could lead to a 2.8°C increase before 2100. As UNEP Executive Director Inger Andersen states in the report: 'We had our chance to make incremental changes, but that time is over. Only a root-and-branch transformation of our economies and societies can save us from accelerating climate disaster.'

The increase from the 1.5°C target would further reduce crop production across Europe and exacerbate the differences between southern and northern Member States. Even the most optimistic climate [projections](#) point to lower agricultural yields of key crops in most of Europe due to water stress. During the next decade, maize crops (key to animal nutrition) are likely to decline across Europe, initially across southern Europe. The Joint Research Centre estimates that a 1.5°C

increase in Europe would cost [€42 billion](#) annually in welfare losses. If global temperatures hit the 2°C mark, the estimated total [welfare loss](#) for the EU would reach €83 billion per year. Droughts could be [twice](#) as frequent in parts of the Mediterranean basin and Atlantic coast; without adaptation and mitigation, an additional 13 million citizens could be affected by water scarcity in southern Europe.

Below are scenarios for how Europe, faced with such warnings, might choose to react to mitigate the threat and adapt the continent to the increased impacts linked to water stress.

Scenario 1: Incremental changes as impacts increase

Farmers struggling with simultaneous droughts and heatwaves increase irrigation and nutrient use to protect crops. Over-abstraction decreases the quantity and resilience of remaining groundwater resources, which are increasingly contaminated due to the diffuse pollution from farming land. This in turn affects surrounding communities and other business sectors such as tourism. The lack of precipitation leads to low water levels across key river systems, causing disruption to supply chains and energy production. Due to demand pressure, prices go up, leaving the average citizen at risk.

Following years of similar sectoral and subsequent economy-wide impacts, various stakeholders start to [adapt](#) in order to safeguard their businesses and mitigate the impact on the economy. Farmers engage with crop experts to find more resilient crops suitable to southern Europe. The energy sector seeks to build up more renewable energy, not relying on water as a driver or a cooling agent while researching ways to reduce its water footprint, encouraged by policymakers' decision to further limit warm water discharge into rivers and to increase the tax per cubic metre of river water used.

Years go by, with ever-increasing losses, before action is taken. Over-exploitation of water sources does irreversible damage to aquifers and water reservoirs, driving further aridity in parts of Europe.

Scenario 2: An urgently transforming society aware of the looming threat

Heeding the warnings, and with the gruelling estimates of the scale of annual welfare losses, the EU and its Member States decide to rapidly transform key sectors and adjust economic drivers to mitigate the human and financial impact of water stress.

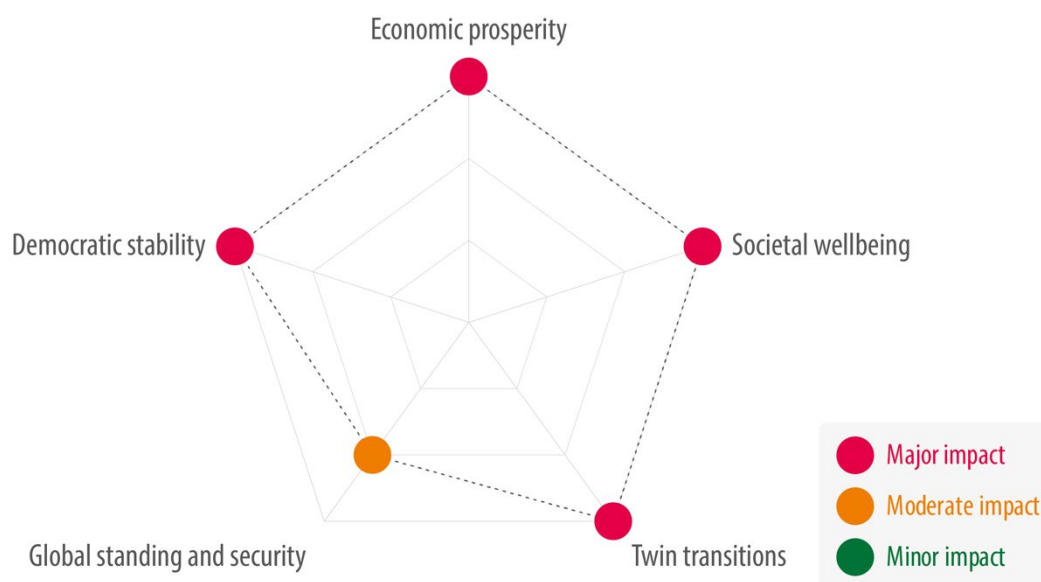
Sustainability and resilience become the driving principles of agricultural policy. The use of pesticides and fertilisers is greatly reduced to prevent water pollution and biodiversity loss. Incentives for organic farming and nature restoration are expanded, as is the financing of research into and use of drought-resistant crops. Dietary changes and reduced food waste limit the need for intensive agriculture. Through adaptation and water optimisation, the EU maintains and even expands its agricultural output, particularly in the north and north-east. Improved water management and adaptation within agriculture increase the overall resilience against droughts and water scarcity, reducing impacts on other sectors. At the same time, strong circular economy policies are also implemented to ensure the appropriate reuse of water resources in a cascading manner. This prioritises per sector the type and quantity of water resources available, depending on climatic conditions and societal needs; industrial innovation regarding water is incentivised by taxing water use.

Scenario 3: Business as usual – temperatures hit and surpass 2°C

Within Europe, the increasing water stress leads to local and inter-regional conflicts as communities, farmers and industry try to protect water resources and limit others' access. Unauthorised makeshift miniature dams and ditches, set up on a frequent basis, divert water from rivers in attempts to contain water. Tensions rise as such actions increase impacts on downstream ecosystems, communities and industries alike.

Globally, famine increases due to failed crops in many areas and the export limits set by European leaders on EU agricultural commodities. The price of food skyrockets as low water levels on shipping routes start to further impact supply chains. Climate migration increases from outside the EU, especially from the Sahel, but also within Europe, from southern to northern Europe. While desertification forces farmers to abandon their lands, the tourism industry starts to falter as well under the extreme heat and insufficient freshwater supply, combined with frequent power outages as power plants shut down. With the internal market in freefall and an 'each to their own' attitude rising across the continent, the EU struggles to agree among Member States how to address the multiple crises and starts to disband.

Figure 12 – Charting the potential impact of droughts and water scarcity



Source: EPRS.

WHAT NEXT? – What could be done?

Within the EU, several pieces of legislation already exist in relation to water resources. In particular, the Water Framework Directive (WFD) ([2000/60/EC](#)) is essential, as its purpose is to protect water resources, ensure sustainable use and mitigate against droughts. However, the implementation of the WFD is not running as [seamlessly](#) as needed to deliver on the 2027 targets. In a 2019 [fitness check](#), concluding there was no need for a recast of the Directive, the Commission stated that 'given that currently more than half of all European water bodies are under exemptions, the challenges for Member States are more than substantial'.

Whether or not the WFD is sufficiently prescriptive and yet flexible enough to integrate new developments since it was adopted in 2000, delivering its ambitions is far off. One area to consider

would be to focus more on the demand side, decreasing the pressure on water systems to allow them to meet quality and quantities under sustainable conditions as prescribed by the WFD. Demand-side measures should focus on the whole economy; for agriculture, this would include ensuring implementation of new irrigation technologies, changing to crop species that are resilient and require less water, and increasing the costs of excessive water use. Reducing overall food production could be achieved by changing diets and seriously addressing food waste, while ensuring fair food prices for farmers. Furthermore, research should get from lab to market faster, to ensure a stable energy supply where only hydropower would be dependent on water levels, avoiding altogether the negative impacts on biodiversity from power plants' warm discharge water. Setting lower limits on the water footprint of industries in general, and industrial water symbiosis, where water cascades from one plant to the next using nutrients or waste heat from the previous factory, should be standard practice rather than best practice.

Satellite systems help monitor developments of water flows during periods of drought, allowing for early warnings and planning. Perhaps such tools could also be used to develop policies to implement a trans-European network – for water – using an ecosystem approach to apply foresight and planning. Such efforts could help prioritise water resource use for transport, energy production, farming or human consumption on an ecosystem level, rather than being based on national capacities to implement the WFD.

Finally, new business opportunities exist through the innovative reuse of nutrient flows in [sewage and wastewater](#), with the potential to reduce fertiliser needs in agriculture and produce bioenergy from sludge, lowering pollution pressure on water resources and further diversifying energy supply.

References

- ETH Zürich, [A historical perspective on glacial retreat](#), 2022.
- European Environment Agency, [Europe's groundwater – a key resource under pressure](#), 2022.
- European Environment Agency, [Beyond water quality – Sewage treatment in a circular economy](#), Report No 05/2022, 2022.
- European Environment Agency, [Water use in Europe – Quantity and quality face big challenges](#), 2018.
- European Environment Agency, [Water resources across Europe – confronting water stress: an updated assessment](#), 2021.
- Hugonnet R., McNabb R., Berthier E. et al., [Accelerated global glacier mass loss in the early twenty-first century](#), *Nature* 592, pp. 726–731, 2021.
- IAEA, [Climate Change and Nuclear Power 2022](#), 2022.
- Intergovernmental Panel on Climate Change, [Sixth Assessment Report](#), 2023.
- Joint Research Centre, [Analysis of climate change impacts on EU agriculture by 2050](#), 2020.
- Joint Research Centre, [Climate change and Europe's water resources](#), 2020.
- Joint Research Centre, [MARS Bulletin: Crop monitoring in Europe](#), Vol. 30 No 9, September 2022.
- Joint Research Centre, [Drought in Europe August 2022](#), 2022.
- Joint Research Centre, [Impacts of climate change on droughts](#), PESETA IV, 2020.
- Joint Research Centre, [Welfare loss from climate change impacts](#), PESETA IV, 2020.
- Joint Research Centre, [Mapping and assessment of ecosystems and their services](#), 2020.
- Marvel K., Droughts and Floods, in *The Climate Book*, Thunberg G. ed., Penguin Books, 2022.
- Moss T., Bouleau G., Albiac J. and Slavikova L., [The EU Water Framework Directive Twenty Years On: Introducing the Special Issue](#), *Water Alternatives* 13(3), pp. 446-457, 2020.
- OECD and the Nuclear Energy Agency (NEA), [Climate Change: Assessment of the Vulnerability of Nuclear Power Plants and Approaches for their Adaptation](#), NEA No. 7207, 2021.

Rounce D. et al., [Global glacier change in the 21st century: Every increase in temperature matters](#), *Science* 379, pp. 78-83, 2023.

United Nations Environment Programme, [Emissions Gap Report 2022: The Closing Window – Climate crisis calls for rapid transformation of societies](#), 2022.

Water Framework Directive (WFD) ([2000/60/EC](#)).

World Meteorological Organization, [Temperatures in Europe increase more than twice global average](#), Press release, 2 November 2022.

¹ In climate science, the average temperature at global level is referred to as 'global mean temperature' or GMT.

Biodiversity loss or collapse

Jurgita Lekaviciute

WHAT? – What is at risk?

Biodiversity, or [biological diversity](#), is the variety of life on Earth, within species, between species and of ecosystems. Biodiversity provides many ecosystem services to people, such as food, climate regulation, nutrient cycling, fresh water and clean air. However, biodiversity is declining globally and in all regions of the planet, posing a significant threat to the ability of ecosystems to provide these essential services.

Around [1 million](#) species (out of an estimated 8 million) are threatened with extinction. The most recent findings (2022) show an average global decline in the wildlife population of [69% between 1970 and 2018](#), with the largest overall global decline being 83% in populations of freshwater species. Biodiversity loss also means that we are losing, before discovery, many of nature's chemicals and genes that have already provided enormous health benefits to humans. Healthy biodiversity means healthy people, food security and water availability, so biodiversity loss has fundamental consequences for our society, economy and human health and well-being. Along with climate change, biodiversity loss is one of the greatest environmental risks of our century.

More than half of the world's economic output depends on nature. While public awareness and active campaigning on behalf of nature [continues to grow](#), many people still lack an understanding of biodiversity loss, and there is a need to help citizens make the link between the importance of nature and their own existence. The World Economic Forum's [Global Risks Report 2023](#) shows that climate and nature-related risks lead the top 10 risks, in terms of severity, that are expected to manifest over the next decade. The risk of 'biodiversity loss and ecosystem collapse' was not seen as a pressing concern in the short term, but it is accelerating in perceived severity, rising to fourth place over the 10-year period.

The direct [drivers of biodiversity loss](#) are changes in land and sea use, direct exploitation of organisms, climate change, pollution and invasion of alien species. The identified indirect drivers are the growing population, economic growth, international trade, technological development, urbanisation, consumption patterns, and drivers related to institutions and governance (e.g. economic incentives associated with unsustainable practices). Climate change, biodiversity loss, and pollution are [highly interconnected](#) and mutually reinforcing.

The results of a recent scientific study [about the role of climate change, land use change and coextinctions on vertebrate losses](#) (2022) predict a dramatic end-of-century loss of diversity. Depending on the climate change scenario, by 2050 local ecosystems will have lost, on average, between 6% and 10.8% of their vertebrate species. By 2100, this rises to an average loss of 13-27%. The scientists also observed a faster decline in diversity between 2020 and 2050 than afterwards. This suggests that the next few decades will be crucial for the future of biodiversity.

SO WHAT? – Impact on the EU

More than any other continent, [Europe's biodiversity](#) has been shaped by human activities and is under constant pressure from human production and consumption. Changes in ecosystem services

that are essential to human life affect livelihoods, incomes and local migration, and can even cause or exacerbate political conflict.

In Europe, the Natura 2000 network of protected areas is a fundamental pillar of EU policy instruments for nature conservation, designed for the long-term survival of rare and threatened species and for some rare natural habitat types, covering almost [one fifth](#) of the EU's terrestrial land area and around 10% of the EU's seas. Despite significant efforts, [the latest European Environment Agency \(EEA\) assessment](#) shows that the vast majority of EU habitats (81 %) and species (63 %) have poor or bad conservation status. Only 9% of these habitats show an improving trend and 36 % continue to deteriorate at the EU level; only 6 % of all species assessments show an improving trend in conservation status, while more than a third are still deteriorating. Among the most affected species in the EU are pollinators. According to the [European Red List](#), one in three bee, butterfly and hoverfly species is declining, and one in ten bee and butterfly species, and one in three hoverfly species is threatened with extinction. Yet, [76 % of terrestrial ecosystems](#) are outside the scope of the EU's Habitats Directive, which provides the basis for the Natura 2000 network. Many are under pressure from human activities, including the increasing impact of climate change and of invasive alien species.

The Joint Research Centre's [EU Ecosystem Assessment](#) (2021) shows increasing impacts of climate change on ecosystems, such as rising land and sea surface temperatures and increased frequency and intensity of extreme droughts. Invasive alien species are observed in all ecosystems, with very high pressure on grasslands and urban ecosystems; not only do they pose a major and increasing threat to Europe's native flora and fauna, but they also cause billions of euros of damage to the European economy each year. In addition, pressures from overfishing and marine pollution are high, leading to the degradation and loss of marine biodiversity and habitats. The combination of these pressures and their possible interactions with climate change pose a serious threat to the EU's biodiversity with major consequences for the EU's economy.

Three main causes to be considered in the EU are described below.

Growing demand and competition for land: There is increasing demand for land for urbanisation, conversion for housing, settlement or recreation, infrastructure and the production of renewable energy and biofuels. This increases pressure on soils and biodiversity, in addition to pressure from intensive agricultural and forestry practices, industrial pollution and, increasingly, climate change. With the EU's increased greenhouse gas reduction target for 2030, the need for renewable energy is growing. Although renewable energy infrastructure can be 'nature positive' due to its role in mitigating climate change, [green energy sources](#) can also cause environmental degradation such as habitat loss, noise and electromagnetic pollution, introduction of invasive species and changes in animal migration patterns. It is therefore essential that climate change mitigation and biodiversity policies are developed and implemented in a coherent and coordinated manner to avoid or minimise further impacts.

Multiple environmental crisis and systemic risks: [Environmental systems](#) underpin societal needs, such as water use and food production. The pressures that humans exert on them have led to a variety of systemic environmental challenges, such as biodiversity loss and ecosystem degradation, climate change and increased pollution loads. Biodiversity loss and climate change are not only environmental issues but also economic, ethical, security and social issues. They have to be addressed together and along with the 17 UN Sustainable Development Goals (SDGs). If we do not succeed in conserving and restoring biodiversity, [progress towards 80%](#) of the assessed targets of SDGs related to poverty, hunger, health, water, cities, climate, oceans and land will be undermined. The [Global Risks Report 2023](#) highlights that, together, biodiversity loss, climate change, pollution, natural resource consumption, and socioeconomic factors form a dangerous combination that can

lead to the collapse of ecosystems, with far-reaching economic and societal consequences, such as loss of crop yields and nutritional value or water scarcity.

The undervaluation of nature – the financing of biodiversity: According to the [Dasgupta report](#), the prosperity of recent decades has come at the expense of nature, which threatens the prosperity and well-being of present and future generations. The value of nature and the goods and services it provides are not reflected in market prices, and governments invest more in exploiting nature than in protecting it; however, the financing of biodiversity has received increasing attention in recent years. Preserving biodiversity and nature requires a fundamental shift in business models, transparency and financial investment; due to its complexity, biodiversity loss is still less understood by investors than climate risk. Metrics and regulation remain challenging because, unlike carbon, there is no single metric for biodiversity. This is because biodiversity can be measured at different levels (genes, species, and ecosystems) [with metrics representing different facets of biodiversity](#) (e.g. the diversity of a species set can be measured by the number of species it represents but also by the ecological functions it ensures and the evolutionary history it holds) and because the value of biodiversity depends very much on the local context. There are several examples of such biodiversity assessment methods, such as [the Corporate Biodiversity Footprint](#) tool to assess biodiversity footprinting, which uses the metric of mean species abundance. Another example is the Danish [Green GDP and Green Reform models](#) to assess biodiversity loss, greenhouse gas emissions and air and water pollution in order to meet politically-set environmental and climate targets.

It is also important to consider societal and cross-sectoral implications.

Biodiversity has important **recreational, aesthetic and identity value**. We identify our countries with specific landscapes, such as orange trees in Spain or lakes and forests in Finland. Public awareness of biodiversity and the benefits of nature is growing. Agro-ecology and sustainable agricultural practices are gaining attention, as are behavioural changes such as switching to more plant-based diets or reducing overall consumption to reduce individual ecological footprints. Indigenous knowledge, awareness of nature and its benefits, and environmental education are also becoming more important. There is growing recognition in recent [reports](#) and [policies](#) of the need for an inclusive 'whole-of-society' approach that empowers individuals to act and that recognises the values and knowledge systems that can guide us on a more sustainable path.

The drivers and consequences of biodiversity loss [are mainly linked](#) to a range of **economic sectors and sectoral policies**. [Agricultural activities](#) are the most common pressure group across habitats and species in the EU; food production is highly dependent on biodiversity and its loss threatens [food systems](#), putting food security at risk. The decreasing abundance and diversity of pollinators and other beneficial organisms is likely to reduce yields and make crops more vulnerable to pests, pathogens and invasive alien species in the long term. Human health is directly threatened, as [biodiversity loss leads to unpredictable epidemics](#); [other sectors](#) affected by biodiversity loss include tourism, transport, spatial planning, trade, energy and the financial sector, including insurance.

WHAT IF? – Scenarios

Various future scenarios, models and analyses have been developed by international bodies (the [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services \(IPBES\)](#), the [Intergovernmental Panel on Climate Change \(IPCC\)](#)) and researchers ([Leadley et al., 2022](#), [Leclère et al., 2020](#)) to analyse the loss of biodiversity and forecast the future development of this risk. They identify some common trends and issues; for example, there is a growing understanding that biodiversity and climate need to be considered together. Biodiversity loss and climate change are both cross-cutting issues, for which strong synergies in intersectoral policies and regulatory

frameworks could contribute to the [transformative societal change](#) that is needed to achieve ambitious goals for biodiversity, climate mitigation and good quality of life. The IBPES [documented](#) the need for transformative change and responses that simultaneously address a nexus of sustainability goals.

How the EU acts will determine what impacts or cascading effects might occur. Implementation of legislation and citizen engagement will also play a role. The four scenarios below suggest how the EU could respond to the impacts of biodiversity loss, taking into account different drivers and cross-cutting issues. [The scenarios are not forecasts](#), but rather images of possible future developments.

Scenario 1: Ostrich scenario (underestimating biodiversity loss as a problem)

Despite various initiatives by communities and a few examples from economically richer EU countries, biodiversity continues to decline. The EU has adopted many relevant laws to halt biodiversity loss, but failure to implement them rapidly and efficiently is still a major limiting factor. The unstable geopolitical situation, the continuous need for renewable energy sources and the difficult economic situation do not help and divide opinion among EU countries on the need and the means to target biodiversity loss. Global warming continues, exceeding 1.5°C, and fire-prone areas are expanding across Europe, threatening biodiversity and carbon sinks. The trend of increasing species extinction is accelerating, with pollinating insects in particular in decline, affecting the reproduction of many edible plants. Overfishing and pollution of the oceans are affecting fish populations worldwide, leading to fish depletion and price increases. Some EU coastal areas are depleted of fish and the economic activity of fishermen is severely affected. Combined with climate change, the loss of biological life makes people more vulnerable to disease, affects food security and generally impoverishes the Earth.

Scenario 2: Eagle scenario (strong 'green' governments)

The EU and Member State governments adopt the necessary legislation to protect biodiversity and provide the means and funding to implement it, as agreed at [COP 15](#) of the UN Convention on Biological Diversity. Global warming has been limited to 1.5°C, pollution from (micro)plastics is also decreasing due to strict environmental requirements, and there are signs of improved conditions for ecosystems and certain species, such as pollinators. Invasive species are also strictly regulated. Strengthening biodiversity-related provisions in trade agreements gives trade policy an important role to play; the true value of nature is ensured by integrating biodiversity financing into financial flows and removing incentives, including subsidies, that are harmful to biodiversity. Companies have no choice but to integrate biodiversity loss and climate change issues into their operations. Citizens have changed their consumption habits, moving away from over-consumption and reducing meat consumption as the market offers many alternatives. More sustainable means of transport are also favoured, such as bicycles or public transport, as these are promoted by national governments and communities, and urban and transport planning has been adapted accordingly.

Scenario 3: Bee scenario (community power)

National governments fail to implement relevant legislation on biodiversity and climate change and EU citizens are affected by the consequences of worsening climate conditions. Depending on the region of the EU, some will experience annual droughts (in southern Europe), while floods and heavy rainfall will increase in western and central Europe. This affects crops and therefore the food system, biodiversity, and also people's mental health. National governments expected support from the EU, but the EU did not have the capacity to make significant changes to the system. Therefore, citizens are mobilising through social networks, local and regional communities to solve the problems of habitat degradation and biodiversity loss. Environmental education and awareness of the benefits of nature are flourishing, and most community members want to be part of the sustainable

transition. People have understood the harmful consequences of over-consumption and have changed their behaviour by switching to local consumption, sustainable farming practices and regenerative agriculture, creating 'green jobs' in tourism, recreation, agro-forestry and sustainable agriculture. Intergenerational support within communities for various services is also an important element.

Scenario 4: The Black Swan scenario (a major event comes as a surprise)

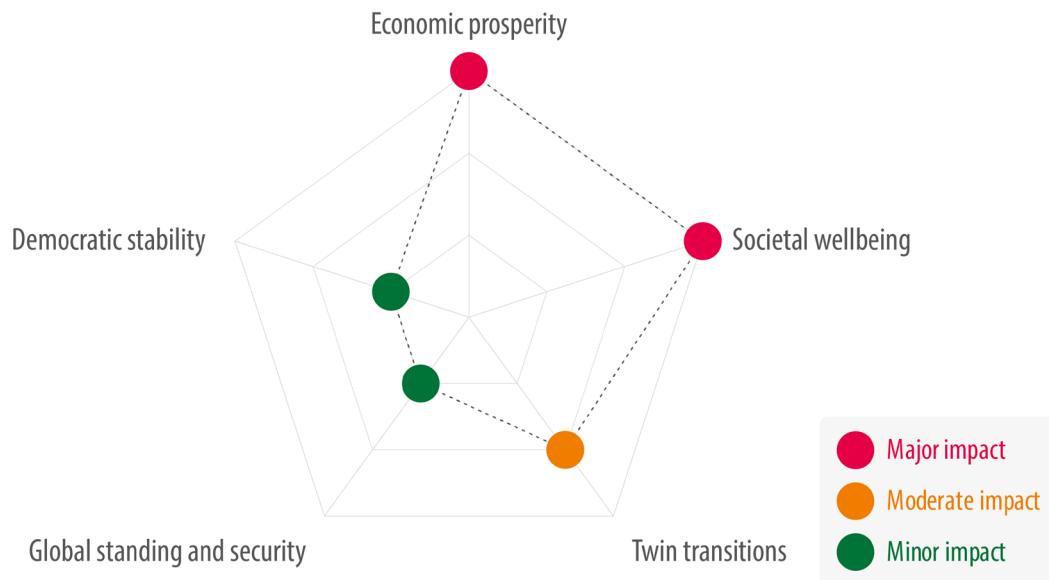
This event could be a major conflict/war between two States. Even if we have some experience of such major disruptions, they still affect the whole of society, the economy and well-being. In this scenario neither climate change nor biodiversity targets are met. Global warming continues, exceeding 1.5°C, and extreme weather events, such as droughts and water scarcity, and fire-prone areas are expanding across Europe, threatening biodiversity. The unstable geopolitical situation and the difficult economic situation divide the positions of EU countries on the need and the means to target biodiversity loss. However, a major event could make the situation worse; attention would shift even further away from the environment, as there would be an urgent need to deal with a new problem. The mental health of society deteriorates and fears about the future increase.

WHAT NEXT? – What could be done?

There is an urgent need for transformative change and system-wide reorganisation, encompassing economic, social, political and technological factors, to solve the interlinked biodiversity and climate crises. This means that [society will need](#) to rethink global production and consumption systems, current economic models and standards of living, and their unequal distribution. Significant additional conservation efforts and food system transformation are needed to reverse current trends in biodiversity loss, and it is important to promote sustainable agriculture that supports the conservation of genetic diversity.

Because we live in a globalised world, it is also important to strengthen international cooperation, the alignment of local, national and international efforts towards sustainability, and policy measures such as the expansion of protected area networks. There is a need to integrate biodiversity issues across different sectors and policies, and to support the development and management of a range of nature-based solutions (NBS) to deliver biodiversity benefits. A better understanding of the economic value of biodiversity and of the financing of biodiversity are other important issues that will need attention in the future. So will the overall implementation of the biodiversity targets set out in the EU Biodiversity Strategy for 2030 and agreed at [COP 15](#).

Figure 13 – Charting the potential impact of biodiversity loss



Source: EPRS.

References

- Convention on Biological Diversity (CBD), [Nations Adopt Four Goals, 23 Targets for 2030 In Landmark UN Biodiversity Agreement](#), Official CBD Press Release, Montreal, 19 December 2022.
- CBD, [Convention on biological diversity](#), Secretariat to the Convention on Biological Diversity, Rio de Janeiro, 1992.
- Dasgupta P., [The Economics of Biodiversity: The Dasgupta Review](#), 2021.
- Eurobarometer survey: Stronger EU action to protect nature, [An overwhelming majority of Europeans are concerned about the loss of biodiversity and support stronger EU action to protect nature](#), Press release, 6 May 2019.
- European Commission, [EU Biodiversity Strategy for 2030: Bringing nature back into our lives](#), May 2020.
- European Commission Staff Working Document, [Drivers of food security](#), January 2023.
- European Environment Agency (EEA), [Drivers of change of relevance for Europe's environment and sustainability](#), 2020.
- EEA, [The European environment – state and outlook 2020](#), 2019.
- EEA, [State of nature in the EU: Results from reporting under the nature directives 2013-2018](#), 2020.
- Gasparatos A. et al, [Renewable energy and biodiversity: Implications for transitioning to a Green Economy](#), Renewable and Sustainable Energy Reviews, Vol. 70, 2017, pp. 161-184.
- Iceberg Data Lab, [Corporate Biodiversity Footprint](#), April 2022.
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), [The global assessment report on biodiversity and ecosystem services](#), 2019.
- IPBES, [Biodiversity and climate change](#), IPBES-IPCC workshop report, 2021.
- IPBES, [Summary for policymakers of the regional assessment report on biodiversity and ecosystem services for Europe and Central Asia of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#), 2018.
- IPCC, Summary for Policymakers: Intergovernmental Panel on Climate Change, [Climate Change 2022: Impacts, Adaptation and Vulnerability](#), 2022.
- IUCN, [The IUCN Red List of Threatened Species](#), Version 2022-2.

Joint Research Centre, [Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment](#), 2021.

Keesing F. and Ostfeld R., [Impacts of biodiversity and biodiversity loss on zoonotic diseases](#), The Proceedings of the National Academy of Sciences (PNAS), Vol. 118, No. 17, 2021.

Leadley P. et al., [Achieving global biodiversity goals by 2050 requires urgent and integrated actions](#), *One Earth*, Vol. 5, Issue 6, 2022, pp. 597-603.

Leclère D. et al., [Bending the curve of terrestrial biodiversity needs an integrated strategy](#), *Nature* 585, 2020, pp. 551-556.

Pollock L., Thuiller W. and Jetz W., [Large conservation gains possible for global biodiversity facets](#), *Nature* 546, 2017, pp. 141-144.

Strona G. and Bradshaw C., [Coextinctions dominate future vertebrate losses from climate and land use change](#), December 2022.

University of Copenhagen, [Green breakthrough: New models calculate our impact on nature and climate](#), January 2023.

Van Woensel L., [Guidelines for foresight-based policy analysis](#), EPRS, STOA Study, 2021.

World Economic Forum, [The Global Risks Report 2023](#), January 2023.

WWF, [Living Planet Report 2022 – Building a nature-positive society](#), Almond R. et al, 2022.

Increase in antimicrobial-resistant infections

Luisa Antunes and Clément Evroux

'Antimicrobial resistance is a ticking time bomb...arguably as important as climate change.'

[Professor Sally Davies](#), UK's Chief Medical Officer

WHAT? – What is at risk?

Introduction

Penicillin, first [discovered](#) in 1928, contributed to the success of [Allied troops](#) in the Second World War and ushered in a new era for medicine. The period between the 1940s and 1960s witnessed a '[golden age](#)' of antimicrobial development, where the impact of serious conditions such as tuberculosis, pneumonia and diarrhoea could finally be mitigated, thus contributing to an increase in quality of health and global life expectancy.

However, the **abuse** and **misuse** in consumption of wide-spectrum antimicrobials has led to a progressive [increase](#) in antimicrobial-resistant infections, with [35 000](#) deaths in the EU each year (more than HIV/AIDS and malaria deaths combined), and [€1.1 billion](#) worth of losses to healthcare systems. The past [20 years](#) have seen the [emergence](#) of microbes resistant to [all available](#) antimicrobial classes.¹ By 2050, AMR could cause [10 million](#) deaths worldwide, surpassing cancer as the second largest killer; it could also cause [up to 3.8 %](#) of global gross domestic product (GDP) to be lost.

Antimicrobial resistance

Antimicrobial resistance (AMR) is a global, multidimensional phenomenon occurring in humans, animals and [environmental ecosystems](#). It is the ability of microbes, e.g. bacteria, viruses, fungi and protozoa, to survive in the presence of drugs designed to kill or inactivate them (antimicrobials: antibiotics, antivirals, antifungals and antiprotozoa). At patient level, AMR hampers the effective treatment of microbial infections, leading to prolonged, severe disease and, in some cases, death. At community level, it amplifies the risk of infection outbreaks, epidemics and pandemics. Antimicrobials have different mechanisms of action: polymyxins target the cell membrane; penicillins, cephalosporins and carbapenems disrupt the bacterial cell wall; tetracyclines, aminoglycosides and macrolides impede protein synthesis; rifampicins inhibit transcription; quinolones inhibit enzymatic changes in the DNA; sulfonamides inhibit a metabolic process. As such, they do not have the same efficiency and specificity against all microbes.

Risk factors

Risk factors include those that can be addressed through effective EU policy action, either legislative or non-legislative, and direct (investments and strategies targeting AMR and/or public health governance) or indirect (economic and climate). Risk factors also include partially- or non-controllable events (e.g. geopolitical, external policies, exposure to [pathogen X](#)).

➤ **Research & development (R&D)**

In the past 30 years, the R&D pipeline [has mostly dried up](#), with no new classes having entered the market, while existing antimicrobials have become less effective. Only six out of the 27 antimicrobials currently [in development](#) that address WHO priority pathogens are [innovative](#). Behind this lies a [paradox](#): in more recent decades, the [marketisation](#) of healthcare has created an [oligopolistic](#) market structure in an area considered to offer low return on investment ([unmet medical need](#)), due to the need to restrict use ([antimicrobial stewardship](#)). Notable [exceptions](#) include Norway and Sweden, with regulatory policies driven towards public health needs in place since the 1930s; coincidentally, both countries also have some of the [lowest](#) AMR rates worldwide.

The intensification of [intellectual property](#) protections in recent decades has also impacted the R&D of new antimicrobials, from drug discovery stage, raising the cost of publishing and accessing science data, through to market entry stage, imposing a [market power](#) on medicine costs that increases prices, delays availability and hampers access to antimicrobials.

➤ **Public health**

Concerted [EU and Member State action](#) in recent decades has led to a comprehensive decrease in [agricultural](#) and [clinical](#) antimicrobial consumption. However, the relative use of both 'broad spectrum'¹² and 'last resort'¹³ antimicrobials has increased. This points, respectively, to a misuse of antimicrobials and to the inefficiency of first-line antimicrobials. Transmission of resistance, rather than consumption of antimicrobials, might be [the main factor](#) in the development of AMR. AMR affects EU regions very differently: the overall burden of AMR infections is highest in [southern and eastern](#) Europe, [particularly](#) in Greece, Italy and Romania, and is strongly correlated with reduced public [expenditure](#) on good-quality public [healthcare](#).⁴ Worsening healthcare conditions lead to longer patient hospital stays, which foster transmission. Lack of diagnostics and infrastructure often force preventive prescriptions of antimicrobials, increasing the use and misuse of antimicrobials.

➤ **Economic**

The 'father' of modern pathology, Rudolf [Virchow](#), argued that politics is medicine on a large scale, and highlighted the importance of socioeconomic factors in driving disease. The [World Bank](#) defined AMR containment as a global public good. Austerity policies drove a [tendency](#) towards the privatisation of health, with negative impacts for both healthcare and health [R&D](#). Mounting inflation and looming recession could now lead to further public health [budget cuts](#), higher costs of goods and labour, and medical staff [shortages](#), diverting needed services from AMR. Tackling the main [social determinants of health](#) by reducing poverty and economic inequality, ensuring basic standards of living, education and health, could have a [direct impact](#) on the burden of infection and the spread of AMR.

➤ **Societal**

Sociodemographic changes (an ageing population, overpopulation, urbanisation) affect AMR levels, by leading to a more vulnerable population, which puts further strain on healthcare systems. Demographic concentration in [urban centres](#) requires basic urban infrastructure (food production, water treatment and waste treatment systems), with a direct impact on health levels. Globalisation, with an intensification of [international travel](#) and international [food trade](#), accentuates the incidence of infectious diseases, and therefore AMR. The erosion of the [social contract](#) and of [social cohesion](#) creates further tensions that

undermine trust in perceived sources of authority (e.g. scientists and governments), as during the COVID-19 pandemic.

➤ **Environmental**

Multiple factors (such as biodiversity, wildlife and land use) influence the interplay between hosts, microbial pathogens, parasites and vectors. [Global warming](#), extreme weather events, transmission of arthropod vectors, [deforestation](#), biodiversity loss and ecosystem degradation can change patterns of existing diseases and drive antimicrobial abuse, as well as leading to the emergence of new pathogens for which no effective antimicrobials are known. In addition, nature has been a [source](#) of medical compounds for millennia; biodiversity loss affects the availability of antimicrobials.

Antimicrobial [environmental contamination](#) can occur through waste towards agricultural soils or water. The soil ecosystem acts as a reservoir of antimicrobial-producing bacteria and a vector for the dissemination of new resistance genes.

➤ **Geopolitical**

Local and global governance [strategies](#) have a [direct impact](#) on global access to pharmaceuticals, influencing international cooperation on R&D and open data sharing. The EU is a [net importer](#) of antimicrobials, with [India](#) and China among the main exporters, and is currently facing a [disruption](#) in the supply chains of over [3 200 pharmaceuticals](#). Future threats (cyberattacks, extreme weather events, or a new infection outbreak that reaches epidemic or pandemic levels) could influence AMR levels.

SO WHAT? – Impact on the EU

Problem statement

Despite increased policy action and awareness at Member State, EU and international levels, AMR keeps rising. It is emerging as a [global threat](#) to human, animal and environmental health, presenting multidimensional risks to healthcare, the global economy, climate policy and geopolitical balances, which can further tip the risk one way or another. Direct causes of increased resistance include the abuse and misuse of antimicrobials; the disinvestment and inefficiency of public healthcare; and a crisis in the global AMR governance system that cannot answer market failures in the R&D of new medicines.

Impacts at multiple levels

The immediate impact of AMR is felt at the **healthcare** level, where it places increased pressure on healthcare systems (incidence, deaths, length of stay in hospital and healthcare costs). The WHO has [declared](#) AMR a top 10 global public health threat. AMR affects [medical procedures](#) (such as standard surgeries, dental implants, Caesarean sections, cancer treatments and organ transplantations) and complicates the overall management of [leading](#) non-communicable diseases (e.g. cardiovascular diseases, dementias and tumours). If left unaddressed, AMR could push humankind back to a pre-antimicrobial era, where patients died from minor infections.

The second impact of AMR is at **economic** level, leading to higher healthcare expenditure and an economic burden exceeding [€1.1 billion](#) a year. An AMR epidemiological crisis would see increased health inequalities between EU Member States and worldwide, affecting primarily low-income countries, including extreme [poverty](#).⁵ It could disrupt international trade and supply chains, threaten workforce productivity and assiduity, weaken consumption, and increase prices.⁶

At **societal** level, AMR can impact [migrant](#) and displaced communities resulting from humanitarian crises generated by increased socioeconomic inequity, conflict and environmental pressure, for instance putting pressure on existing healthcare difficulties in [refugee camps](#). The worsening of socioeconomic conditions could lead to a mistrust in perceived sources of authority, the growth of unscientific beliefs, as seen with [vaccination hesitancy](#), and a more unstable socio-political matrix overall. Other societal issues that can be impacted by AMR include [mental health](#); generational divisions; and increased pressure on agriculture and healthcare workers and [vulnerable groups](#), including children, women, [racialised people](#), migrants, and LGBT people.

At **environmental** level, the pharmaceutical industry, with its [pharmaceutical waste](#), is [more polluting](#) than the car industry. Indirectly, the emergence of another pandemic would lead to an urgent need to invest in health crisis response, diverting financial and political attention from engaging in deeper reforms in favour of climate action, as already seen for [COVID-19](#).

At **geopolitical** level, AMR could intensify existing tensions, thereby contributing to national strategies directed towards isolationism, protectionism and issues in global cooperation.

WHAT IF? – Scenarios

Scenario 1: Catastrophic

The most **catastrophic scenario** would see a slow return to a 'pre-antibiotic era', where most if not all main human infections are resistant to antimicrobials. This could occur following a serious disinvestment in public healthcare, possibly due to external pressure such as prolonged global war or a major global recession, where agendas need to be reprioritised. The modern-day levels of globalisation would foster a faster-than-ever transmission of resistant infections, increasing the frequency of pandemics. We would ultimately see an increase in [child mortality](#), foodborne diseases, septicaemia, non-meningococcal meningitis, [pneumonia](#), syphilis, influenza, and [tuberculosis](#). Climate change could also contribute to raising the levels of [cross-border health threats](#), including [malaria](#). In such an apocalyptic scenario, AMR would lead to a reduction of [3.8%](#) in annual global GDP (similar to the 2008 crisis) and push more than [28 million](#) people into extreme poverty by 2030, especially in low-income countries.

Nevertheless, the increase in AMR levels could also have positive consequences. It could incentivise research into other therapeutic solutions such as vaccines, the development of which (e.g. vaccines for smallpox, rabies, diphtheria and influenza) predates the discovery of modern antimicrobials such as [penicillin](#). Another type of [alternative treatment](#) could include biotechnological innovations based on RNA biology (e.g. [iRNA](#), [CRISPR](#)), [antivirulence drugs](#), [antibiotic adjuvants](#) and [herbal medicines](#). It could also foster investment in infection prevention and control, including access to quality healthcare, infrastructure, hygiene, diagnostics, and investment in health promotion, sport, education and demographic changes (urban decentralisation).

Scenario 2: Do nothing

In a **do-nothing scenario**, no changes would be applied to present EU and global AMR governance, leading to a progressive worsening of the current situation, with AMR evolving to become the [second largest cause of death](#) by 2050 and annual global GDP reducing by [1.1%](#). In this scenario, AMR would be directly responsible for pushing [7 million](#) people into extreme poverty by 2050.

Scenario 3: Slight improvement

A third scenario would be that of a **slight improvement**: with more investment dedicated towards R&D and other legislative and non-legislative actions, global AMR levels could revert to those of the

'golden years' of AMR development, between 1940 and 1960, where all infections (e.g. tuberculosis, gonorrhoea, typhoid, syphilis) could be effectively treated with antimicrobials. Estimates suggest that expenditure of €0.2 trillion could return cumulative global benefits of [€10-27 trillion](#), especially in middle- and high-income countries. An investment of €1.5 per capita per year in AMR policies would have returns of [€1.4 billion](#) in the EU/EEA. However, it is unclear whether a doubling down on [public health spending](#) without challenging the current R&D system would be sufficient to address the issue of access to effective antimicrobials and, ultimately, revert AMR.

Scenario 4: Optimistic

The **most optimistic scenario** is that in which AMR is no longer an issue. That could result from the implementation of legislative and non-legislative measures, including major structural reforms that reprioritise unmet medical needs, and an increase in global cooperation. Such a scenario would need to be accompanied by improved global standards of living and reduced socioeconomic inequity between world regions. Coupled with the concomitant investment in AMR prevention and control, theoretically the impact of virtually any infectious disease for which an antimicrobial drug exists could be mitigated under this scenario. Realistically, however, principles of natural selection dictate that AMR will never be fully eradicated, but at best managed, since microbes carry intrinsic resistance genes that are [transferred horizontally](#) to other microbes in the same ecosystem.

WHAT NEXT? – What could be done?

Health is recognised as a **human right** by the United Nations [Universal Declaration of Human Rights](#) and the EU [Charter of Fundamental Rights](#). AMR is an [indicator](#) of the United Nations Sustainable Development Goals (SDGs) and closely interwoven with several other SDGs⁷ meant to reduce socioeconomic disparities and alleviate poverty by 2030. However, there is persistent underinvestment in public health [across EU Member States](#). Tackling AMR requires concerted action in the human, animal, agricultural, economic and environmental health sectors ('One Health'), as a broad public health issue that calls for infection prevention, control and mitigation strategies aimed at addressing health inequities, and strengthening health systems.

Prevention

Since transmission is a main driver of AMR, effective strategies could focus on reduced exposure to infection through **infection prevention and control** measures. This includes modernising existing medical infrastructure and equipment, investing in healthcare personnel to address workforce shortages, enhancing primary healthcare and community health settings, and monitoring the enforcement of existing legislation.

Investing in [vaccination programmes](#) reduces pressure on antimicrobial use. Simple [hygiene](#) measures are the first line in reducing [hospital-acquired infections](#). The Organisation for Economic Co-operation and Development estimates that applying [simple measures](#) – including hygiene, antimicrobial stewardship, diagnostics and awareness campaigns – would save, in a year, about [€3 for every €2](#) invested.

Faster [diagnostic tests](#) could further help to hinder AMR infections at their inception. This includes taking an integrated 'One Health' approach to **monitoring and surveillance** of antimicrobial use in the human, agriculture and fisheries sectors, which reinforces the [environmental](#) component and turns to novel mechanisms, such as [wastewater monitoring](#), [metagenomics](#) and [AMR gene sequencing](#). Overall, environmental governance needs to be integrated into social and economic governance in order to tackle AMR.

Research and development (R&D)

Research into novel technologies for [vaccines](#), antimicrobials and diagnostics, including antibiotics [designed by artificial intelligence](#) (AI) and DNA tools (genetic diagnosis, gene therapies) could be more effective than developing new antimicrobials. Vaccines contribute to disease mitigation and [eradication](#), showing [low resistance](#). With the innovation in RNA technologies and [medical AI](#), [new vaccines](#) against [cystic fibrosis pathogens](#) and [tuberculosis](#) could soon be developed, [relieving pressure](#) on AMR.

Political decisions need to be made on structural reform of the pharmaceutical system's current organisation, where the system of [push/pull](#) incentives has not been sufficient to ensure novel antimicrobials and repair existing market failures. Proposed solutions include redefining public-private partnerships, [revising](#) intellectual property protections and exclusivities, reinforcing existing EU science networks with a focus on open data sharing, and even establishing a [public EU R&D body](#).

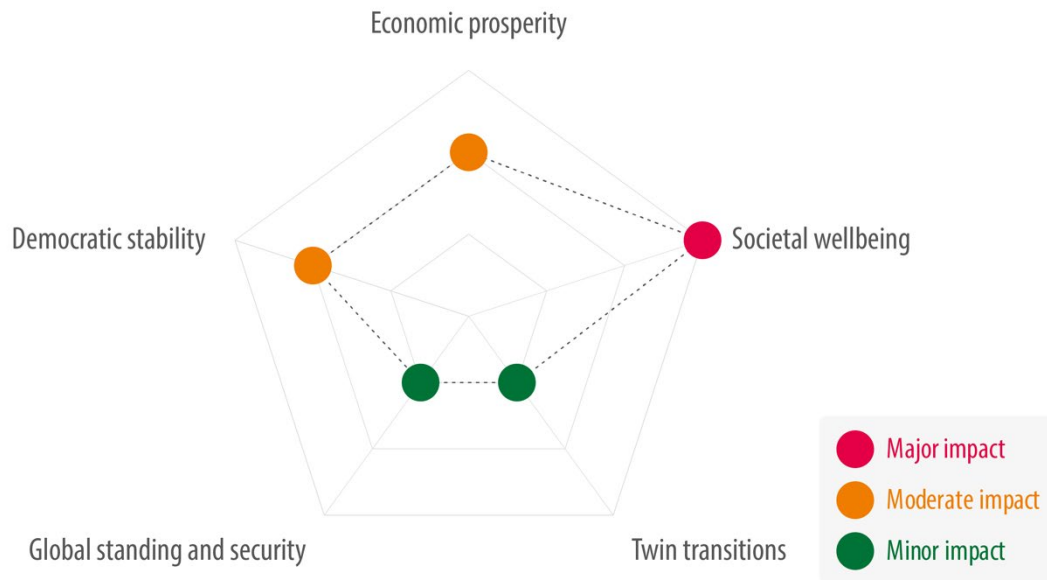
Socioeconomics

AMR and public health are interlinked with other sectors. Solutions will not come without comprehensive investment in alleviating **social and economic inequalities**, striving to [guarantee](#) good housing conditions, education and jobs. Universal access to affordable, quality essential antimicrobials, including among poor and marginalised populations across and beyond EU Member States, should be prioritised. [Environmental conditions](#), such as urban health, outdoor pollution and climate change, will play an important role in AMR governance in the decades to come.

The **geopolitical** context also has an impact on AMR governance. Globally, the highest AMR levels are found in [sub-Saharan Africa](#), with [24 direct deaths](#) per 100 000 people. Tuberculosis, malaria and Ebola are but a few cross-border threats that could affect the EU, depending on new environmental, economic and geopolitical balances, and AMR cannot be contained without engaging in a global discourse. According to the World Bank, investing in [universal antimicrobial access](#) and access to safe [water and sanitation](#) would reduce the [5.7 million deaths](#) that are due to treatable bacterial infections (e.g. cholera, dysentery, typhoid) in low- and middle-income countries, and prevent AMR [dissemination](#). The development of vaccines against tuberculosis and malaria are a [critical need](#) for the WHO.

Taking action on AMR will involve both **international cooperation** and open **strategic autonomy** (e.g. fostering domestic production and ensuring a diversification of supply chains). A possibility is the [negotiation](#) of a global R&D pharmaceutical framework, including binding government obligations to invest in R&D, equitable distribution across countries, and pooling patents on essential medicines. Of note, a few private, not-for-profit investors have started dominating the R&D sector. However, the growing 'silent' [involvement](#) of private actors and millionaire 'philanthropists' in global health politics could be regarded with concern as to its [normative](#) power' to exert illegitimate or undemocratic influence and set priorities on global policy agendas.

Figure 14 – Charting the potential impact of antimicrobial resistance



Source: EPRS.

- ¹ Bacterial resistance to antibiotics is currently the leading antimicrobial threat. In the EU, the highest number of AMR-attributable deaths is caused by six main pathogen–drug [combinations](#): third-generation cephalosporin-resistant *Escherichia coli*, methicillin-resistant *Staphylococcus aureus* (MRSA), third-generation cephalosporin-resistant *Klebsiella pneumoniae*; and carbapenem-resistant *K. pneumoniae*, *Acinetobacter baumannii* and *Pseudomonas aeruginosa*. There is an [increasing resistance trend](#) for all drugs, in particular carbapenem resistance in *A. baumannii*, a worrying scenario given that carbapenems are considered a [last-resort](#) class of antibiotics. Non-bacterial AMR [includes](#) antiviral drug resistance in immunocompromised HIV/AIDS patients, drug-resistant malaria parasites, and drug-resistant *Candida* (a fungal infection).
- ² An antibiotic that acts against the two major bacterial groups (Gram-positive and Gram-negative) or against a wide range of disease-causing bacteria.
- ³ The last treatment option for a patient infected with a pathogen resistant to all available antimicrobials.
- ⁴ [Access](#) to medical services; investment in human resources; diagnostics and infrastructure; affordable antimicrobials, therapeutics and cures; and persistence of substandard or [falsified](#) antimicrobials.
- ⁵ By 2030, [51 million](#) additional people are predicted to live in extreme poverty compared with pre-pandemic levels.
- ⁶ COVID-19 caused a contraction of the global economy in 2020, with debt increasing by [13 %](#). The global economy is predicted to slow down to 2.3 % growth by 2024.
- ⁷ SDGs 1, 2, 3 and 6.

Security of energy supply in Europe

Alex Wilson

WHAT? – What is at risk?

The International Energy Agency (IEA) defines energy security as 'the uninterrupted availability of energy sources at an affordable price'. Securing adequate energy supplies at the best possible price is a key responsibility of all governments, including the 27 EU Member States. In addition, guaranteeing **security of supply at Union level is an explicit EU competence**, according to Article 194(1) of the Treaty on the Functioning of the European Union (TFEU). However, Article 194(2) TFEU leaves it up to individual Member States to choose their energy mix, structure their general energy supply, and determine the conditions for exploiting their energy resources. In practice, this means that security of supply is a common endeavour for Europe, where national choices have to consider their potential implications on neighbouring countries and the EU energy market.

Security of supply is a very important dimension of EU energy legislation, particularly where this concerns electricity and gas markets. In fact, the EU has a greater role in regulating electricity and gas markets than the supply of energy sources such as coal and oil. Since the adoption of the [European Green Deal](#) (December 2019), greater efforts have been made to align EU energy legislation with the EU's commitments under the Paris Climate Agreement. Recent legislative proposals are seeking to adapt Europe's energy markets so that they can help to deliver on the overarching EU goal of climate neutrality – defined as net zero greenhouse gas (GHG) emissions – by 2050, as well as the intermediate goal of a 55% reduction in GHG emissions by 2030. Yet the Russian invasion of Ukraine in 2022 shook the whole framework underlying Europe's energy policies, and has since led to an unprecedented rupturing of economic and energy relations between the EU and Russia. This has brought security of supply concerns to the fore of EU policymaking, as was evident from the Commission's [REPowerEU plan](#) (May 2022) to end Europe's dependence on imported fossil fuels from Russia. The REPowerEU plan is careful to align security of supply goals with the EU's climate action objectives, arguing these are actually complementary, since the best long-term way to reduce dependence on fossil fuels is to make energy efficiency savings and promote the use of clean and renewable energy sources that can be more locally produced.

Security of supply is a constant risk to be managed by the EU. It has important ramifications for the design of EU electricity and gas markets, affecting the speed of the transition away from fossil fuels and the capacity to integrate higher and higher shares of renewable energy. It opens a whole discussion about imported vs. locally generated energy sources, and touches on questions of EU industrial policy, especially where this concerns critical raw materials, the location of supply chains, and the development and commercialisation of new energy technologies. The current crisis has also reopened a political debate in many EU Member States about whether to continue (or in some cases to start) exploiting nuclear energy as a stable baseload energy that is domestically produced, but which produces nuclear waste and often relies on foreign technologies. In the short term, EU action has focused on the immediate problem of how to end Europe's dependency on Russia as its leading energy supplier, and how to manage the risk of shortages of critical fuel sources in the event of a complete interruption of energy supplies from this increasingly hostile state. This consideration is particularly pertinent for gas markets, where some Member States have been historically dependent on Russian pipeline supplies, but also impacts oil and coal markets, as well as nuclear energy.

SO WHAT? – Impact on the EU

The Russian invasion of Ukraine in 2022 brought home the very concrete risks that Europe faces in securing its future energy supplies. The escalating brutality of the Russian invasion and the huge loss of life and infrastructure in Ukraine make it very unlikely that Russia will become a trading partner of the EU again in the foreseeable future. This raises questions about how the EU can diversify its energy supplies sufficiently over the next 5-10 years to cut out Russia entirely as an energy supplier. The EU continues to want to meet its ambitious climate goals, while maintaining secure and affordable energy supplies. Reconciling these distinct but potentially complementary goals is at the heart of the Commission's REPowerEU plan.

Russia was the [leading supplier](#) of natural gas, oil and coal to the EU in both 2020 and 2021. It had developed close energy ties with EU Member States, and partly owned an extensive network of gas and oil pipelines serving European markets, as well as storage facilities. This situation changed completely over the course of 2022, as EU sanctions on Russian energy supplies of coal and oil took effect with an [embargo on Russian coal](#) since August 2022, and an [embargo on over 90% of Russian oil](#) from 5 December 2022 (crude oil) and 5 February 2023 (refined oil products). The oil embargo was accompanied by measures to [cap the maximum prices](#) that Russia could charge for its crude oil and refined oil products on global markets, thereby [limiting the revenues to the Putin regime](#). Since oil and coal are traded on global markets and obtained from a wide range of suppliers, the EU embargo has not posed a significant risk to their security of supply and has been managed so far without particular difficulties.

The situation is rather different for gas, with a large number of EU countries heavily reliant on Russian supplies, often through pipeline routes that are to some extent controlled by Russian companies. In 2022, Russia 'weaponised' its pipeline gas exports to Europe, sharply reducing volumes of supply on different pipeline routes, and possibly causing the [detonation of the Nord Stream pipelines](#) to Germany. The Commission's [Quarterly Report on European Gas Markets](#) finds that, in Q3 2022, pipeline gas imports fell by 96% via Belarus, by 85% via Nord Stream 1, and by 63% via Ukraine compared to Q3 2021. This was only slightly compensated by an increase in supplies on Turk Stream (+21%) and an increase in Russian LNG imports (+4.5 bcm – billion cubic meters). Total gas imports from Russia were down by 64 bcm, with no sign of an imminent recovery as relations between Europe and Russia continue to deteriorate.

The EU's immediate response to Russia's 'weaponisation' of its energy supplies has been to rapidly [scale up its imports of liquefied natural gas](#) (LNG) from a wide range of supplier countries, [fill in gas storage](#) to very high levels and, where necessary, seize control of Russian-owned storage facilities, and [sharply reduce gas consumption](#) by businesses and consumers as a means to counter the serious risk of insufficient gas supplies during the winter heating period. These actions, combined with a mild winter (2022-2023), mean that so far security of gas supply has been fully guaranteed – a tangible success for Europe. Yet energy security risks have by no means disappeared: future winters may well be colder and it could become steadily more difficult for gas storage to be filled, especially in the event of a complete interruption of Russian energy supplies and/or a resumption of [higher Chinese and Asian demand for LNG](#) as part of the post-COVID economic recovery. This makes it extremely important for Europe to curb its energy consumption and promote clean and renewable forms of energy, thus lowering the EU's dependence on all third-country fossil fuel suppliers and ultimately enhancing its autonomy in the energy field (see [2020 EPRS study on strategic autonomy](#)). This approach is consistent with a [2022 report](#) from the International Renewable Energy Agency, which argues that the clean energy transition offers the only long-term pathway to greater security of supply, as well as a [2022 report](#) from the IEA which concludes that

'renewable energy has great potential to reduce prices and dependence on fossil fuels in the short and long term'.

Globally, investment in renewable energy production is accelerating, with the IEA forecasting an increase of +8 % in 2022, following on from record capacity additions in 2021. The EU starts from a pioneering position in terms of promoting renewables, having comfortably [exceeded its 20% target for 2020](#), while ongoing negotiations over [revising the Renewable Energy Directive](#) should lead to a new target in the range of 40-45 % by 2030. Yet ambitious targets need to be met by progress on the ground, and here the picture is more mixed, with the [latest Eurostat data](#) noting a slight fall in the share of renewables in 2021. A bigger challenge for future investments in renewables is that recovery from the COVID-19 pandemic and the subsequent invasion of Ukraine have led to very high inflation, which central banks are trying to combat by raising the cost of borrowing through repeated interest rate rises. This has made new investments in renewable energy projects more costly, even if governments have sought to compensate via greatly expanded tax credits and other fiscal incentives (approach taken by the US with its [Inflation Reduction Act](#)), or by relaxing obligations on state aid and reorienting existing EU funding mechanisms towards investment in clean energy (approach taken by the European Commission with its [Green Deal Industrial Plan](#)). Other actions that would expand renewables investment in Europe could come from accelerated and simplified permitting procedures and removal of bottlenecks. Such actions lie at the heart of the [REPowerEU legislative proposal](#) to revise the Renewable Energy Directive.

While the challenging transition to clean and renewable energy sources is a necessity for both climate action and security of supply, it is equally important for Europe to curb the amount of energy that it uses through enhanced energy savings and energy efficiency measures. This can directly reduce the EU's dependence on imported fossil fuels and strengthen its security of supply. The EU comfortably [met its 2020 target](#) for 20 % improvements in energy efficiency, but largely due to the effects of the COVID-19 crisis in lowering energy use, rather than permanent shifts in business and consumer behaviour. To increase the level of ambition around energy savings, the EU institutions are currently negotiating a [reform of the Energy Efficiency Directive](#) that would aim for up to 45 % efficiency improvements by 2030. The feasibility of these medium-term goals has been reinforced by considerable short-term progress in curbing energy consumption, as discussed in the Commission's [Save Energy plan](#). The subsequent [Council Regulation 2022/1369 of 5 August 2022](#) on coordinated demand-reduction measures for gas set Member States a voluntary 15 % target for reducing their gas consumption between 1 August 2022 and 31 March 2023, a target that could become mandatory in an emergency situation. Helped by a mild winter and some demand destruction in industry because of high gas prices, the EU delivered a sharp reduction in gas consumption over a short timeframe, with Eurostat noting that EU gas consumption was [down by over 20 %](#) in the period August-November 2022 (compared to the same months in 2021), and in 18 Member States it was reduced by more than the 15 % target.

The EU has promoted comparable energy saving efforts in electricity markets. [Council Regulation \(EU\) 2022/1854 of 6 October 2022](#) commits Member States to a binding 5 % reduction in peak electricity consumption over the winter period, alongside a broader voluntary 10 % reduction in overall electricity consumption, as a means to curb the use of gas and coal for electricity consumption, and to lower energy prices for consumers. The latter [rose to extremely high levels](#) in 2022, in part because the costliest energy sources at the time (gas and coal) set the wholesale electricity price, even in energy markets reliant on a range of energy sources. This is consistent with the [merit order principle](#) that underpins the EU's single energy market and which [may in future be reformed](#). Security of supply is closely linked to affordability of energy, especially for vulnerable citizens at risk of [energy poverty](#). The Council Regulation therefore establishes a framework for EU Member States to obtain additional revenues that can mitigate the costs of high energy prices for

their consumers, by setting out the details of a revenue cap on inframarginal electricity generators (i.e. those producing energy at a cost below the price of the marginal fuel that is most expensive) whenever wholesale electricity prices exceed €180 per Megawatt/hour (MWh), and by defining the terms of an EU-wide solidarity contribution on fossil fuel producers reaping excess profits from high energy prices in 2022 and 2023 (see [EPRS briefing](#)). Subsequent emergency legislation at EU level has sought to improve the functioning of [gas markets](#) by means of improved market regulation, joint purchasing, the development of a new EU gas index and a temporary market correction mechanism that may cap very high gas prices. These actions should be considered alongside an array of national measures to support consumers during this period of exceptionally high energy prices, as compiled in a [dataset](#) prepared by the Bruegel think tank.

WHAT IF? – Scenarios

Scenario 1: Seizing the moment, improving security of supply and boosting climate action

There is a strong possibility that the EU can manage its security of supply risks over the next 5-10 years, building on the progress it has made over the past year under the REPowerEU plan and associated measures to diversify supply, boost renewables and curb energy consumption. Expanding its LNG capacity through the construction of new import terminals, as well as improvements in gas interconnection projects (e.g. overcoming notorious bottlenecks like the France-Spain interconnection), will lead to near zero reliance in future on Russian pipeline gas. The ultimate aim is for EU gas markets to reach a level of diversified supply and integration into global markets comparable to coal and oil markets. The EU would continue to make strides in eliminating any form of dependency on Russia as a coal or oil supplier, with the development of new oil supply routes meaning that all 27 EU Member States could be free of Russian oil imports within the next 2-5 years. This diversification of supply would be consistent with the EU's sanctions policy on Russia and its geopolitical goals.

Supply diversification would be accompanied and reinforced by permanent energy efficiency improvements and an acceleration in the construction and approval of clean and renewable energy projects, ensuring that EU security of supply actions are fully compatible with its ambitious climate goals, and that Europe makes use of the current crisis to double down on the clean energy transition. This would involve higher levels of public and private investment, as well as accelerated permitting processes over the coming years. Citizens would see a positive relationship between the clean energy transition, security of supply, and their own quality of living, leading to a virtuous and self-reinforcing policy cycle.

Scenario 2: Struggling to cope with high energy demand, stalling the clean energy transition

A more pessimistic scenario may emerge if Europe faces unmanageable peaks in energy demand, for example through cold winters that require high levels of gas consumption for domestic heating. High energy prices have very little upside for the EU, given that all of its Member States are now net energy importers and its own [domestic energy production](#) has been in secular decline for decades, mostly due to the shrinking production of fossil fuels. A series of cold winters could make the EU unable to fill in its gas storage capacities, leading to rationing and demand destruction in industry, especially if Russia completely halts its gas exports to the EU or otherwise uses its blackmail potential in the energy field. Strong economic growth in Asia and Latin America could raise LNG prices and divert supplies away from Europe, since both regions lack a dense gas pipeline network and have tended to command a premium for LNG supplies. Fossil fuel prices often rise and fall together (e.g.

during the energy price crisis of 2022, or the COVID-19 pandemic crisis in 2020), so high prices for all fossil fuels would lead to a huge strain on European consumers. EU governments are likely to struggle to find more resources to finance the necessary support for consumers suffering a further blow to their standard of living.

Another major rise in energy prices would also entrench high levels of price inflation, leading to a sustained period of high interest rates that could scupper many renewable energy projects or major programmes for energy efficiency improvements, which tend to have relatively high upfront costs and may need government guarantees to be commercially viable. Member States would struggle to provide the necessary financing for clean energy projects in a context of strained budgets and competing demands for government funding, making it more difficult for the EU to complete the clean energy transition and reach the goal of climate neutrality by 2050. Fiscal inequalities across Member States would lead to a weakening of the single market, as wealthier countries provide far more support to their consumers and businesses through cost of living payments and state aid to businesses. Given the urgency of protecting their own citizens with limited financial resources and avoiding social unrest, Member States could prove unable to reach agreement on additional EU funding to support citizens through the energy crisis.

Scenario 3: Muddling through the crisis, limited progress on all fronts

A third scenario is one of muddling through, whereby the EU responds as best as possible to a series of unpredictable energy crises, but without truly future proofing its energy supplies or fully delivering on the clean energy transition. Europe would struggle with volatile energy prices, with a cycle of boom and bust in energy markets leading to investor uncertainty and failing to provide consistent price signalling for supply diversification and the transition to renewables. The latter would suffer from high upfront capital costs and the limited fiscal resources of Member States, which might agree to new funding streams at EU level but not on a sufficient scale to be a game changer that can compete with what is on offer in alternative markets such as the US. The EU would remain vulnerable to peaks in energy demand and its economy would cope, but struggle to thrive, in an energy market characterised by the complete interruption of energy supplies from Russia. The EU would only partially deliver on the goals of the 'Fit for 55 package' by 2030, due to limited public and private funding, perennial bouts of high inflation, high capital costs for renewable energy projects, and growing political contestation over green projects. The latter could become a complicating factor if citizens perceive that scarce resources are being prioritised for the 2050 goal of net zero greenhouse gas emissions, rather than improving their immediate living standards.

WHAT NEXT? – What could be done?

Policymakers need to accept that security of energy supply risks in the EU have become endemic and difficult to manage, but they are also not continuous or easy to predict. Energy markets are impacted very suddenly by shifts in the geopolitical environment or signs of weakness in the global economy. Policymakers need to acknowledge that the EU and its Member States remain quite vulnerable as net energy importers at a time of considerable global uncertainty, in which energy markets react to global trends that the EU has few levers to influence. These include the energy policy choices of developed and developing economies; the trajectory of inflation, interest rates and macroeconomic stability in global markets; and major geopolitical tensions with or unexpected events in producer countries. Energy policies can be subordinated to other strategic priorities, such as global security or solidarity within the democratic world, and this can trigger a certain amount of turmoil in energy markets that needs to be well managed. Energy policies should not become an obstacle to the EU promoting democratic values in Europe as well as further afield, but policymakers should be cognisant of the complex trade-offs that exist when relying for supplies on any third

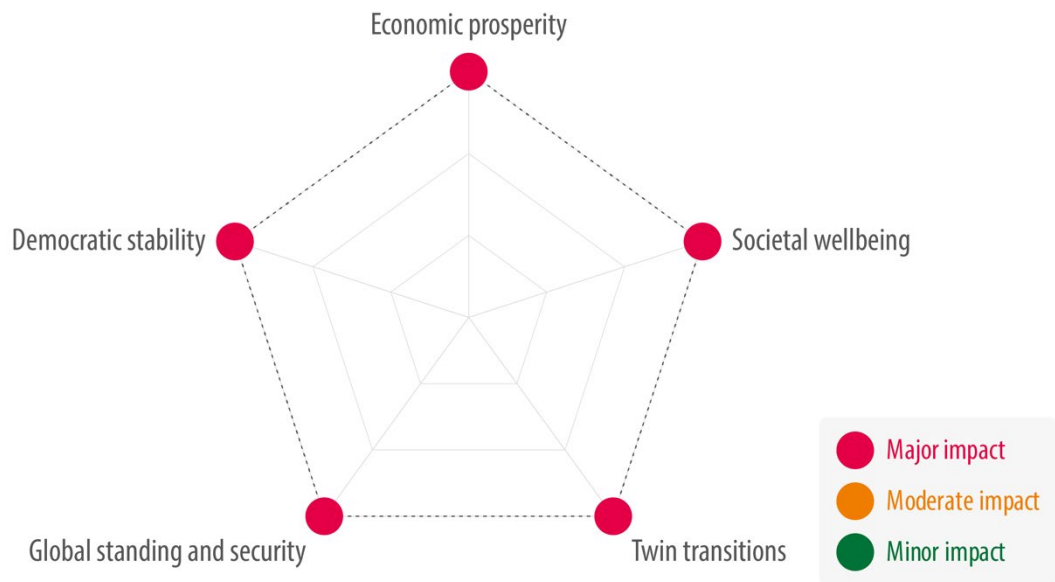
country (not only Russia). Energy policies must be sensitive to environmental considerations, urgently adapted to meet ambitious climate action goals, and better explained to citizens who in such difficult times are highly concerned about their own standard of living.

The EU needs to consolidate a policy framework that can address energy supply crises in future. This framework can build on existing EU legislation such as the 2017 regulation on [security of gas supply](#); the 2019 regulation on [risk preparedness in the electricity sector](#); and the 2009 Council Directive on [minimum stocks of crude oil and/or petroleum products](#). Yet the EU and its Member States must also prepare for more improvised action where risks materialise that were not foreseen in plans. EU policymakers should not be lulled into false complacency when no major risks materialise for a period of several years, since major unforeseen events can occur with a huge impact on energy markets, such as the Russian invasion of Ukraine in 2022. They must be vigilant in monitoring global energy trends and adjusting their level of internal preparation to meet a wide range of potential risks coming from numerous, unanticipated angles.

Whereas security of energy supply is a pre-requisite for a functioning market economy, the over-or-under regulation of national energy markets can lead to distortions and perverse incentives that risk undermining solidarity across the broader EU single market. National leaders need to respond to the most urgent concerns of their citizens and work towards an affordable and predictable level of energy pricing – which constitutes an indispensable element of security of supply – yet they must also be aware of the contagion effects of unilateral actions on neighbouring markets as well as the negative feedback loops from uncoordinated policy actions. It is therefore imperative that EU policymakers recognise the risks of broader market distortion in their efforts to protect energy consumers and develop green industries, and seek to develop suitable EU funding instruments to compensate Member States with lower fiscal capacity and more challenging clean energy transitions. Furthermore, the transition away from fossil fuels towards clean and renewable energy must remain embedded as a core component (and not just a complement) to any future security of supply actions, continuing the approach undertaken in the REPowerEU plan.

Eliminating dependency on third countries and strengthening strategic autonomy in the energy field remain laudable goals that need to be pursued in a consistent and clear-eyed manner, with the full recognition that any quick fixes in the short term do not guarantee medium- or long-term stability. The promotion of renewables must be accelerated, also for security of supply reasons, and this will inevitably require more creative thinking about how to reduce the capital costs for governments and investors, while not increasing the relative financial burden on vulnerable citizens and taxpayers, all the while making full use of industrial and technological developments. Immediate financial support to mitigate the high cost of energy for (vulnerable) citizens needs to be balanced with an awareness that the most certain way to reduce energy costs are strategic investments to curb consumption, improve efficiency, and accelerate the transition to cheaper renewables. Improved dialogue with citizens and stakeholders on energy policy choices should help to build a broader basis of support for ambitious long-term actions towards a more secure energy supply.

Figure 15 – Charting the potential impact of energy supply disruption



Source: EPRS.

Elevated sovereign debt in Europe

Martin Höflmayr

WHAT? – What is at risk?

The European continent has been facing a series of interacting shocks, primarily caused by the COVID-19 pandemic and Russia's war on Ukraine. These external shocks have changed not only geopolitical, but also economic realities to such an extent that they can be characterised as a [polycrisis](#) – a term coined in the late 1990s by French philosopher Edgar Morin – meaning disparate shocks that interact so that the aggregated challenge to the economy and society as a whole is bigger than the sum of the individual shocks. The reaction to the polycrisis was for governments to try to counter-balance the detrimental economic prospects, particularly for real incomes and investment activity.

Taking advantage of the continued application of the [general escape clause](#)¹ of the Stability and Growth Pact (SGP),² Member States have run significant fiscal deficits since the advent of the COVID crisis. Consequently, the containment of the pandemic led to a heavy deterioration in public finances, with the EU's public deficit peak reaching -6.7 % of gross domestic product (GDP) in 2020, followed by -4.6 % in 2021. Since then, government deficits have declined substantially, as the policy response led to an [unexpectedly](#) strong post-COVID economic performance. However, the Russian invasion of Ukraine put a premature halt to the economic recovery, and again governments were prompted to intervene. On the back of rising energy bills, eroding the purchasing power of households and companies, governments reacted with extensive fiscal measures, [amounting](#) to 1.2 % of GDP in 2022 and 1 % in 2023. Overall, the [fiscal expansion](#) from 2020 to 2022 amounted to 3.75 % of GDP in the eurozone.

Despite governments' continued expansion of their support for households and firms to counteract the polycrisis, two factors led to a substantial decrease in the [debt-to-GDP ratio](#) (henceforth, the **debt ratio**) from its COVID-induced peaks: inflation and real GDP growth. The decrease in the debt ratio is largely due to an increase in GDP outweighing the increase in government deficits in absolute terms. This trend continued despite expansionary fiscal efforts during 2022.³ Additionally, in the short term a period of high inflation can reduce the debt ratio, as higher prices increase the denominator of the debt ratio, whereas higher interest rates only gradually affect the numerator through higher interest expenditure due to the rather long maturity of government debts (see next section). This debt-decreasing '[snowball](#)' effect is particularly strong in high-debt Member States.⁴

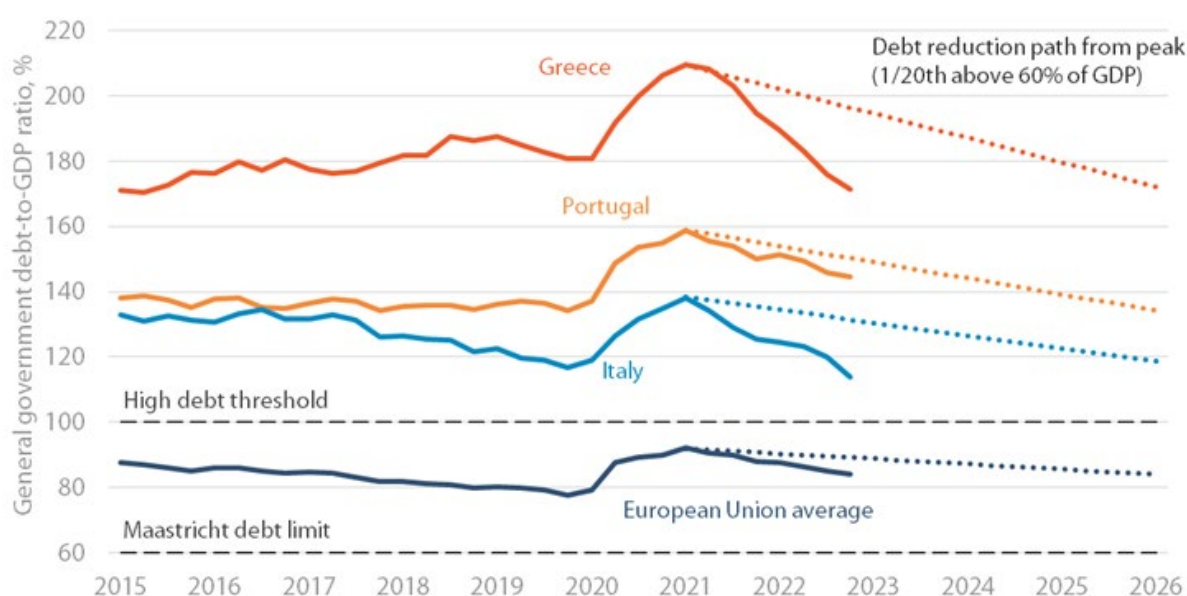
However, recent analysis shows that, in the longer term and conditional on the monetary policy reaction, a [negative impact](#) on economic activity from an adverse supply shock may outweigh the positive impact of higher inflation on debt ratios. While the euro area debt ratio increased by 15.7 percentage points during the COVID pandemic, from a debt ratio of slightly below 84 % to almost 100 % in the first quarter of 2021, the debt ratio declined by 6.6 percentage points. As shown in Figure 16, the debt levels decreased significantly, even beyond the 1/20th debt reduction rule enshrined in the current SGP, due to the large post-pandemic growth rebound.

[Sovereign debt](#), a country's gross government debt obligation, remains substantially above pre-COVID levels, and while the debt trajectory is declining, refinancing conditions have become less favourable – interest rates are now set higher to fight record high inflation rates. Thus, the current

[fiscal guidance](#) emphasises the need for debt reduction through gradual fiscal consolidation; however, according to the [IMF](#), fiscal consolidation, on average, does not reduce debt ratios.

At the same time, an increase in public investment is necessary for the green and digital transition and, in particular, for energy security. A substantial part of public investment has been and continues to be supported by EU financing – for instance, through the [REPowerEU](#) initiative – including making use of the Recovery and Resilience Facility ([RRF](#)) and other EU funds, which could alleviate pressure on national fiscal budgets. Nevertheless, high debt ratios in Member States may become an element of macroeconomic instability, particularly in an environment of high geopolitical uncertainty and tighter financing conditions, emphasising the importance of an [appropriate economic governance framework](#) that strengthens debt sustainability and simultaneously promotes sustainable and inclusive growth in Member States.

Figure 16 – General government gross debt, EU and selected countries, 2015 Q1 to 2022 Q3, % of GDP



Source: [Eurostat](#).

SO WHAT? – Impact on the EU

Generally, accumulated sovereign debt limits governments' capacity to respond to economic challenges. In an economic environment marked by a substantial interest rate shock, governments are increasingly financially vulnerable and exposed. Risk factors affecting the sustainability of public finances include the decline in potential growth, mooted convergence progress between countries, additional risks resulting from the interaction between bank and sovereign risks ([doom loop](#)), the risk of financial fragmentation, and insufficient public investment to support the twin digital and green transition. The recent inflationary surge could aggravate those risks, because a strong reaction by the European Central Bank ([ECB](#)) and a rapid increase in nominal policy rates could lead to significantly higher refinancing costs.

Meanwhile, governments are running larger fiscal deficits, and are focusing on support for the economy and cushioning the impact of high energy prices against the backdrop of slowing growth, high inflation, eroding real incomes and elevated post-pandemic debt levels. The combination of debt sustainability and sufficient public investment is juxtaposed with a growing [divide](#) between

fiscal and monetary policy objectives. Yet both policies, [aligned](#) or not, have a crucial impact on sovereign debt levels and their sustainability.

The impact of fiscal policies on sovereign debt levels is governed through the fiscal framework that is meant to keep public finances on a sustainable path. Since 1998, the year after the two main regulations of the SGP entered into force, EU Member States have been [compliant](#) with numerical fiscal rules in just over half of the cases, with stark and persistent differences across countries. Importantly, lower compliance tends to go along with higher debt ratios; countries with very high debt ratios (higher than 90 %) exhibit an average compliance score of 33 %, as opposed to 67 % for low-debt countries (debt ratio below 60 %).

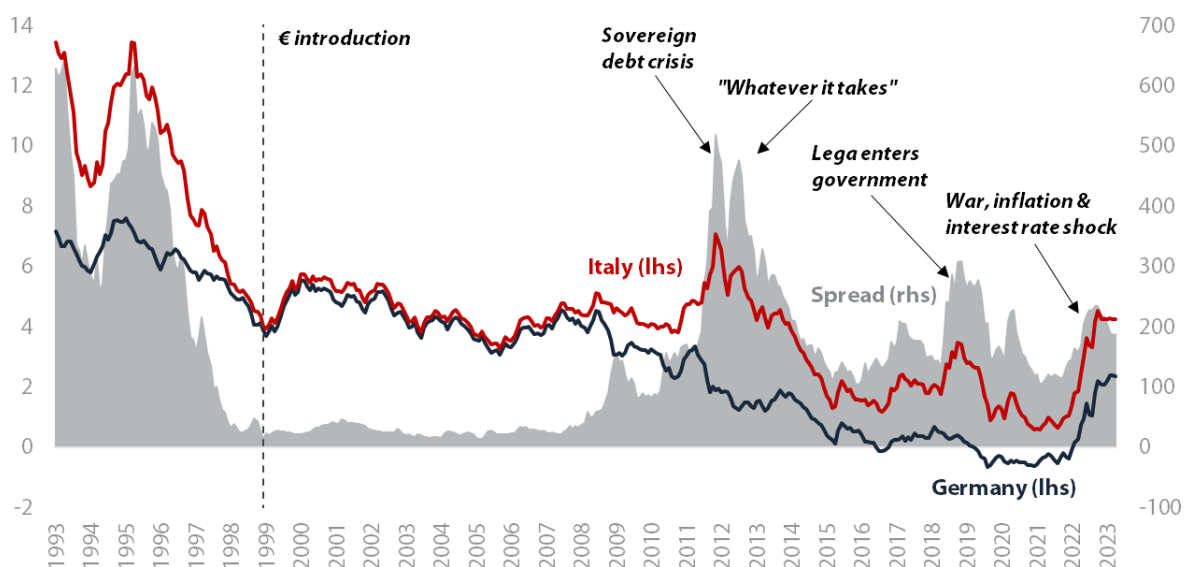
Against this backdrop, the Commission's assessment of euro-area countries' [2023 draft budgetary plans](#) makes a distinction between Member States with low or medium debt ratios, which should take a fiscally neutral stance, and Member States with high debt ratios, which should ensure a prudent fiscal policy and limit expansionary fiscal policies. However, the fiscal framework has been applied to a limited extent since March 2020, due to the activation of the [general escape clause](#); the clause allows Member States to undertake appropriate budgetary measures in the face of [exceptional circumstances](#). The European Fiscal Board (EFB)⁵ [criticised](#) the decision to extend the clause to 2023, which was based on purely [qualitative](#) and undifferentiated EU fiscal guidance.

In the context of heightened economic and geopolitical uncertainty, on 26 April 2023 the European Commission published a [package of three proposals](#) to revise the EU's economic governance framework, shaped by the trade-off between reducing higher and more dispersed public debt levels and the need for sustained public investment. At the core of the proposal are bilateral debt reduction plans, based on a debt sustainability analysis, concluded between the Commission and each Member State. However, since the escape clause will be [deactivated](#) as of 2024, there is limited time to reach a political consensus.

The ECB has played a crucial role in stabilising the European [sovereign debt market](#) since the [sovereign debt crisis](#). The sharp rise in inflation throughout 2021 and 2022 has put pressure on the ECB to meet its price stability mandate and, to bring back inflation from record-high levels to 2 %, the ECB has followed the [synchronised tightening cycle](#) of central banks around the world. On the one hand, it has increased the policy rate at an unprecedented pace and set out arrangements to [reduce](#) the holdings of securities by the EU's central banks. On the other hand, the ECB will [reinvest](#) the maturing principal revenues under the pandemic emergency purchase programme until at least the end of 2024, with the flexibility to counter market fragmentation.⁶ Both policies create a potential trade-off with the objective of debt market stability. Furthermore, the ECB added another instrument to its toolbox, the transmission protection instrument (TPI),⁷ through which 'the Eurosystem will be able to make secondary market purchases of securities issued in jurisdictions experiencing a deterioration in financing conditions not warranted by country-specific fundamentals, to counter risks to the transmission mechanism to the extent necessary'.

Nevertheless, the expectation of continued higher policy rates and the ending of asset purchases, combined with slower growth and high levels of debt, increases the [risk](#) of a crisis and has led to concern about widening sovereign debt spreads between Member States.⁸ The yield spread between German and Italian sovereign bonds, a gauge of financial stability in the EU, has increased since mid-2021 but narrowed slightly towards the end of 2022 (see Figure 17).

Figure 17 – Secondary market yields of government bonds, 1993-2022, maturities of close to 10 years, % per annum, period averages (lhs); Yield spread between German and Italian bonds (rhs)



Source: ECB [statistical data warehouse](#).

This, in turn, created concern about financial fragmentation, since rising interest rates will have an effect on the borrowing capacity of Member States and their debt sustainability. The [ECB](#) calls for a safe and sustained exit from this crisis while remaining attentive to fiscal sustainability, as, for several countries that already entered the pandemic period with high government debt-to-GDP ratios, the largest deficits are projected for 2022-2023. Interest payments should rise more gradually because much of the current debt that will prevail in the coming years was issued in the low interest environment of the last decade, as the average [maturity](#) of outstanding debt in the euro area is around [8.1 years](#).

However, looking further ahead, government borrowing costs will eventually increase as the debt stock is likely to be refinanced in a higher interest rate environment. Furthermore, the composition of government debt holdings can also play a crucial role in [sovereign debt sustainability](#). Several Member States relied heavily on the ECB's bond purchase programmes, exposing the ECB to large sovereign debt in its balance sheet. This is particularly pertinent, as the ECB [announced](#) that it would accelerate its quantitative tightening. At the same time, large domestic holdings of sovereign debt can also have a destabilising effect, as they generate [feedback loops](#) between the public and private sectors during crises.

WHATIF? – Scenarios

With the EU's fiscal framework to be updated (scenario 3), monetary policy focused on its price stability mandate (scenario 1), and an uncertain economic growth path ahead (scenario 2), there are various scenarios that could shift the trajectory of sovereign debt risks in substantially different directions.

Scenario 1

To counter record high inflation rates, the ECB has increased interest rates at an unprecedented pace. A continued tightening of monetary policy and the end of asset purchases, combined with slower growth expectations and high levels of debt, may have serious consequences for sovereign

debt sustainability. This is a particularly worrying scenario since, so far, [sovereign bond yields](#), the interest rate that a national government pays to service its outstanding bonds, have already increased substantially since the ECB started the tightening cycle. Institutional investors are becoming more averse to holding riskier assets and pay close attention to the sustainability of public debt. While in a low-inflation environment the ECB's price stability objective was aligned with the objective of stabilising debt markets, the current high-inflation environment creates potential [trade-offs](#).

With this in mind, the ECB established the [TPI](#). This tool allows the ECB, for instance, to purchase the sovereign debts of Member States experiencing a deterioration in financing conditions not warranted by country-specific fundamentals. Should such conditions emerge, however, some [questions](#) remain, such as: 1) How fast can this programme be activated? 2) How would the eligibility criteria be assessed? 3) Will TPI purchases be consolidated with other purchasing programmes? 4) Will TPI programmes be [sterilised](#), i.e. offset by the withdrawal of equivalent monetary amounts from the economy? Importantly, the ECB will have to justify whether the TPI is in compliance with the principle of [proportionality](#).⁹ As a consequence, this puts additional significance on the reform of the EU's fiscal rules and surveillance, and highlights the importance of the ongoing EU [economic governance review](#).

Scenario 2

One major relationship on which public debt sustainability is heavily dependent is that between the average interest rate that governments pay on their debt and the growth rate of the economy. The [interest-growth differential](#) (i-g) has been negative for many Member States since the global financial crisis, as interest rates have been persistently low.¹⁰ Evidence suggests that [fiscal policy is more effective](#) when the interest-growth differential is negative, although the [institutional architecture](#) of the euro area affects this differential, particularly for countries on the periphery. However, during spells of negative differentials, Member States tend to [reduce their fiscal efforts](#), partly offsetting debt reduction, particularly in highly indebted countries. Importantly, high debt levels can worsen the balance between i and g, as a higher supply of government bonds leads to higher yields and ultimately higher average interest costs. This is particularly relevant for highly indebted countries, as increasing the debt-to-GDP ratio disproportionately increases their borrowing costs.¹¹

In spite of recent increases in interest rates, average interest costs are still projected to remain below growth rates for some time. The two main reasons for this are 1) the increase in maturities of existing debt stock, and 2) the high levels of inflation; although the latter increased more than bond yields, it also spurred nominal government revenues. However, over the medium term, both [factors](#) are expected to fade; while the debt stock is rolled over with [higher marginal borrowing rates](#) (raising i), inflation is expected to fall closer to the inflation target (lowering nominal growth, g).

Scenario 3

Policymakers and academics commonly agree that the current EU economic governance framework is [complex](#), exacerbates economic cycles and has not contributed to the debt sustainability of Member States. Since the general escape clause was activated in March 2020, fiscal indicators have seen unprecedented swings, making a fiscal framework to support efficient use of public resources appear all the more pertinent. The ongoing [discussion](#) on the EU's economic governance framework has been accelerated by the Commission's [package of three proposals](#) to revise the EU's economic governance framework. The reform proposals are shaped by the trade-off between reducing higher and more dispersed public debt levels after several years of unprecedented fiscal challenges on the one hand, and the need for sustained public investment to support the EU's common priorities on

the other. The proposed framework broadly follows the [orientation](#) outlined at the end of 2022. Debt sustainability would be ensured through stricter fiscal surveillance by the Commission, based on a country-specific fiscal adjustment path anchored to a debt sustainability analysis (DSA) framework.

While positive assessments have been made regarding certain elements in the orientation, it also prompted some criticism: specifically, the Commission's role and discretion in setting out a [debt reference path](#), its assessment framework, determining which investments and reforms will be accepted in the [fiscal-structural plans](#), and the remaining [reliance](#) on unobservable indicators in the [DSA](#). Furthermore, it is worth noting that the Commission's orientations do not consider a role for the European Parliament in the fiscal framework or the surveillance process. However, finding common ground on an effective fiscal framework might prove politically difficult, particularly since the escape clause is to be [deactivated](#) by 2024, which leaves little time for reaching a consensus. Without rules to contain the deficit bias in fiscal policy and provide guidance on and coordination of budgets, there would be uncertainty that would be prone to having a detrimental impact on government finances and government debt sustainability.

WHAT NEXT? – What could be done?

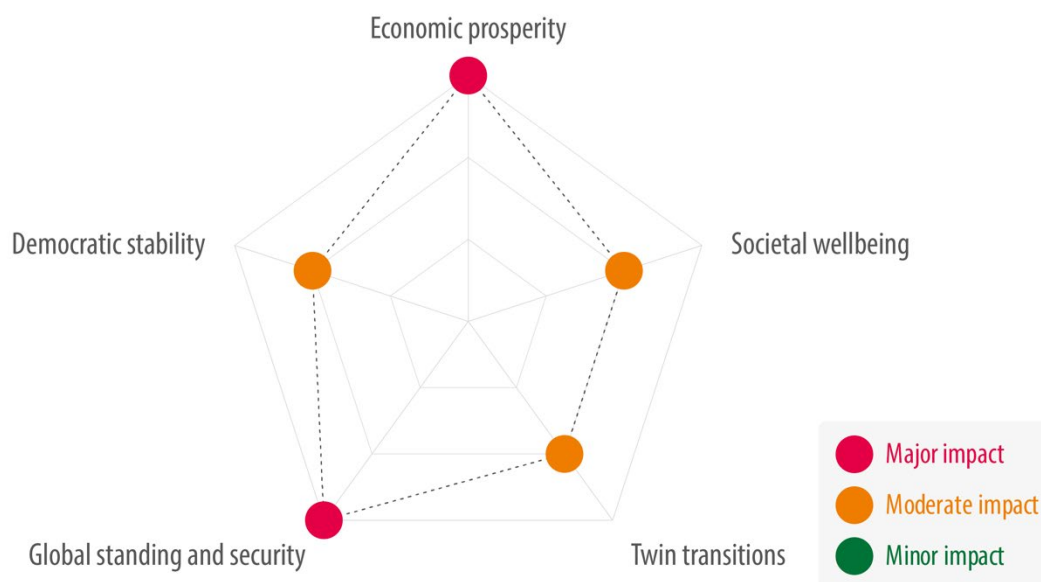
How we think about public debt (sustainability), fiscal policy and its role in the economy has changed drastically in the light of the recent polycrisis, and an effective and well-designed [economic governance framework](#) is crucial to address the challenges ahead. Confronted with significant [investment](#) needs – for instance, to support the twin transition and enhance the competitiveness of Europe's net-zero industry – fiscal rules need to cater for sufficient public investment while also ensuring that sovereign debt is sustainable. Within this remit, the NGEU/RRF has reinvigorated the discussion around a [central fiscal capacity](#) and a [joint debt instrument](#). Arguments for a central fiscal capacity have been made to reduce the risk of a second sovereign debt crisis, in particular for [macroeconomic stabilisation](#) and [counter-cyclical](#) fiscal policy coordination.

The EU's sovereign bond market is fragmented, with different sub-markets, and market participants' perceptions about the relative risks of these sub-markets is subject to change over time. Thus, the fragmentation of sovereign bond markets can raise the risk of bank-sovereign doom loops, high sovereign debt costs in bad times, and flights to safety within the EU. As a result, according to recent [estimates](#), the costs of EU-issued bonds could become twice as high as initially estimated at the start of the EU's 2021-2027 budget cycle. For EU sovereign bonds to be a truly [safe asset](#), they need favourable regulatory treatment to continue and permanent EU debt issuances to ensure market liquidity. Furthermore, proposals for a [European debt agency](#) outline the advantages of common debt issuance to separate the problem of preventing debt crises from the need for monetary stability.

During the COVID pandemic, both monetary and fiscal policy announcements had a pronounced effect on [sovereign bond yields](#) – in particular, high debt countries benefited from monetary policy intervention, owing to unprecedented flexibility in implementing bond purchases, while the EU's fiscal policy announcements lowered yields more uniformly. The current inflationary environment may mark a new macroeconomic phase, in which high natural interest rates,¹² once again, reopen the possibility of a self-fulfilling spiral in sovereign debt yields. It is unclear whether the first line of [defence](#), the flexibility in reinvesting redemptions as part of the PEPP portfolio, together with the new anti-fragmentation tool (TPI) is sufficient in an upheaval triggered by a [sovereign debt crisis](#). Evidence suggests that central bank [balance sheet expansions](#) substantially reduce the economic costs of a crisis in the short term, contributing positively to a faster return to trend inflation, trend real GDP growth, and avoiding high unemployment. In the long term, such central bank

intervention makes financial boom-bust episodes considerably more likely, as the subsequent systemic crisis draws significantly closer after major balance sheet expansion. Thus, central bank liquidity support in the event of financial distress does appear to give rise to [moral hazard](#), a situation where market participants increase exposure to riskier assets, trusting that the central bank would step in eventually.

Figure 18 – Charting the potential impact of a sovereign debt crisis



Source: EPRS.

References

- Bletzinger T., Greif W. and Schwaab B., [The safe asset potential of EU-issued bonds](#), European Central Bank, Research Bulletin No. 103, January 2023.
- Bouabdallah O., Checherita-Westphal C., de Vette N. and Gardó S., [Sensitivity of sovereign debt in the euro area to an interest rate-growth differential shock](#), European Central Bank, Financial Stability Review, November 2021.
- Bouabdallah O., Hynes W., Kostka T., Schumacher J. and Valenta V., [Fiscal policy: from free to affordable lunch](#), European Central Bank, The ECB blog, January 2023.
- Colard F., Habib M., Panizza U. and Rochet J., [Assessing debt sustainability in the euro area](#), CEPR Column, January 2023.
- Corsetti G. and Codogno L., [Shifts in expectations may undermine debt sustainability](#), CEPR Column, November 2022.
- European Central Bank, [Fiscal policy implications of euro area countries' 2023 draft budgetary plans](#), ECB Economic Bulletin, Issue 8/2022, January 2023.
- European Commission, [Fiscal policy guidance 2023](#), March 2022.
- European Commission, [Communication on the 2023 Draft Budgetary Plans: Overall Assessment](#), COM(2022) 900, November 2022.
- European Commission, [Recommendation for a Council Recommendation on the economic policy of the euro area](#), (COM(2022) 782, November 2022.
- Lorenzoni G., Giavazzi F., Guierrieri V. and D'Amico L., [Future challenges to European sovereign debt markets](#), CEPR Column, December 2022.
- Taylor A. and Schularick M., [Geneva 24: Debt: The Eye of the Storm](#), CEPR Press, February 2022.

-
- ¹ The activated general escape clause does not suspend the procedures of the EU Stability and Growth Pact, but allows the Commission and the Council to depart from the budgetary requirements that would normally apply.
 - ² The Stability and Growth Pact (SGP) is a set of rules designed to ensure that countries in the EU pursue sound public finances and coordinate their fiscal policies. It chiefly relies on government total outstanding debt to GDP being below 60 % of GDP and the annual government budget deficit being below 3 % of GDP. The activated '[general escape clause](#)' does not suspend the procedures of the SGP, but allows the Commission and the Council to depart from the budgetary requirements that would normally apply.
 - ³ [Expansionary fiscal policy](#) is commonly defined as government spending that increases aggregate demand.
 - ⁴ The so-called 'snowball effect' explains the impact on the debt-to-GDP ratio of, on the one hand, real GDP growth and inflation (measured with the GDP deflator) and, on the other, interest rate expenditure on the annual accumulation of debt. See also [Fiscal policy: from free to affordable lunch](#), The ECB Blog, European Central Bank, January 2023.
 - ⁵ The [European Fiscal Board](#) is an independent advisory body of the European Commission which evaluates the implementation of the EU fiscal framework.
 - ⁶ For the purchases of public sector securities under the [PEPP](#), the benchmark allocation across jurisdictions is the Eurosystem capital key of the national central banks. At the same time, purchases are conducted in a flexible manner based on market conditions and with a view to preventing a tightening of financing conditions that is inconsistent with countering the downward impact of the pandemic on the projected path of inflation.
 - ⁷ The transmission protection instrument allows the EU's central banks to counter risks to the transmission mechanism, the process through which central bank decisions affect the economy, if a country experiences a deterioration in financing conditions not warranted by country-specific fundamentals. In such a scenario, and subject to an assessment by the ECB based on certain criteria, central banks can make secondary market purchases of securities.
 - ⁸ In '[Self-fulfilling crises in the Eurozone: An empirical test](#)', *Journal of International Money and Finance*, Volume 34, April 2013, pp. 15-36, Paul De Grauwe and Yuemei Ji show that a significant part of the surge in the spreads of the peripheral eurozone countries during 2010-2011 was disconnected from underlying increases in the debt-to-GDP ratios and fiscal space variables, and was associated with negative self-fulfilling market sentiments that became very strong after the end of 2010. In an updated version, '[The fragility of the Eurozone: Has it disappeared?](#)', De Grauwe and Ji highlight that, during the pandemic, the new governance of the eurozone prevented a new sovereign debt crisis, despite the fact that the pandemic shock was similar to the financial crisis of 2007-2008.
 - ⁹ Nevertheless, compared to the Outright Monetary Transaction ([OMT](#)), this is a shift from [conditionalities](#) deriving from the EU stability mechanism programme and based on fiscal and debt sustainability criteria.
 - ¹⁰ Paulo Mauro and Jing Zhou show that $r-g < 0$ is usually the case (see '[Can we sleep more soundly?](#)', IMF Working Paper, March 2020).
 - ¹¹ The sensitivity of i and g on the existing debt stock is explained in [Mian et al \(2022\)](#). [Estimates](#) for the eurozone find a 10 percentage point rise in the debt-to-GDP ratio is consistent with a 20 basis point increase in yields for issuers with a relatively low debt stock. For highly indebted countries, the same increase in the debt ratio translates into a 65 basis point increase in yields.
 - ¹² The natural rate of interest is the interest rate consistent with maintaining economic growth at its trend rate while also keeping inflation stable. Also called the 'neutral rate', this interest rate is an unobservable variable that can only be estimated. See, for instance, Brand C., Bielecki M. and Penalver A., [The natural rate of interest: estimates, drivers, and challenges to monetary policy](#), ECB Occasional Paper Series No 217, December 2018.

Rising challenges to China's growth performance

Ulrich Jochheim

WHAT? – What is at risk?

Over the past decade, China has [contributed](#), on average, as much as one third of global GDP growth (and in 2009 – in the context of the Global Financial Crisis – its growth contribution was paramount). It has become the second biggest economy in the world based on exchange rates and the biggest based on purchasing power parity. In spite of rising political and commercial [tensions](#), in particular with the United States, the country is still strongly involved in global trade (and supply chains) and in the global financial system. It [accounts](#) for almost a fifth of global production (and more than a quarter of world carbon emissions) and has become the world's [second biggest goods importer](#). As recently [pointed out](#) by the IMF, for every increase in Chinese growth by 1 percentage point, growth in other countries increases by around 0.3 percentage points.

However, developments in 2022 paint a relatively bleak picture of the state of the country's economy: according to China's statistical office, 2022 [GDP growth](#) in China was only 3 %, the lowest growth rate since the country's reform and opening up in 1978. In the second half of 2022, China's economy suffered from a worsening external environment, the consequences of the very strict zero-COVID policies (which were only [lifted](#) on 7 December) and the '[catastrophic](#)' developments in the real estate sector (which still accounts for at least 20 % of China's recent growth performance).

China's statistical office also [confirmed](#) that China's population has decreased by 0.85 million compared to 2021, the first officially confirmed decline in population in the recent past (although the decline might actually have [set in earlier](#)). As pointed out by the [Lowy Institute](#), for example, 'China's past population policies mean substantial demographic decline is essentially locked in over the coming decades, with little ability for policy to materially alter the outlook'.

The country's rising indebtedness is another structural challenge, with [China's debt-to-GDP](#) ratio for the entire private sector at the end of 2022 amounting to around [284% of GDP](#), with the corporate component of this debt the highest in the world. Economic growth has also been strongly reliant on capital investment: on top of very high housing investment, China's growth has relied on government-induced infrastructure growth that is now [reaching its limits](#). Since capital accumulation has accounted for three-quarters of China's growth in recent years, this has major implications for China's future economic prospects.

With the growth input from both input factors (labour and [capital](#)) losing in importance, 'whether China can sustain rapid economic growth will largely be determined by what happens with **productivity growth**', as pointed out by the Lowy Institute.

Following the sudden lifting of restrictions, it is generally expected that consumption and therefore growth in 2023 will benefit from the likely reduction in forced saving (due to the frequent lockdowns), which also explains the February 2023 upward revision to China's 2023 growth rate to 5.2 % by the [IMF](#).

However, the challenges mentioned above (problems in the real estate sector and declining returns on fixed investment in general, the decline in population, the very high indebtedness across sectors) will without doubt constitute a major drag on the country's medium-term economic performance.

What is more, while a serious economic and/or financial crisis in China might be considered positive [by some](#), based on a zero-sum approach, we can anticipate certain negative repercussions both globally and for the EU, as outlined below.

SO WHAT? – Impact on the EU

A structural and strong slowdown in China's medium-term growth performance would have considerable negative effects on the EU, first of all through the direct trade channel (less demand by Chinese customers for EU imports, particularly for producers of luxurious products, including cars). In 2021, China accounted for around 10% of all [extra-EU exports](#) by the EU (compared to 13% that went to the UK and 18% to the US).

Furthermore, the indirect trade effect could be equally important, with growth in countries very closely linked to the Chinese economy (in 2020, 27% of all Japanese exports went to China and Hong Kong, as did 31.8% of all [South Korean exports](#)) also likely to decelerate considerably. In 2021, [32%](#) of all EU exports went to Asia (including ASEAN) and Oceania ([Australian exports](#) to China were 42% of the Australian total in 2021, but the share declined to 'only' 30% in 2022). A structural slowdown in Chinese growth would probably reinforce the negative effects on countries in north-east Asia which also face strong headwinds from demographics.

On top of these 'real' effects, a crisis in China is also likely to be transmitted through financial channels. A [recent study](#) by the European Central Bank (ECB) cites the serious liquidity crisis of Chinese real estate developer Evergrande in the autumn of 2021 as an example. Reports about its pending collapse triggered a fall in global equity prices, credit spreads widened and 'indicators of investor uncertainty rose steadily against a backdrop of flight-to-safety considerations'. The study also cites two previous publications by the ECB which underlined 'that China's weight and systemic relevance in the global financial system is increasing', indicating the relevance of such internal economic developments beyond China.

The message is that a more serious real estate crisis in China than that of the autumn of 2021 could lead to serious '[financial contagion](#)', defined as a situation where sudden large losses in one country, one sector or one particular asset spread out across the economy and increase the risk of subsequent large losses in the same as well as in other countries, sectors or assets. In many cases this leads to a '[flight to safety](#)', meaning that investors buy bonds (safer investments) and currencies considered as very safe, while selling stocks and selling currencies of countries, often emerging economies, considered as less safe in times of crisis.

While a much lower medium-term growth rate for China would only show its effects on EU businesses, employees and consumers in a gradual way, a financial crisis would hit investors, companies and employees almost immediately.

Conversely, a situation where China clearly raises its growth potential through strong productivity growth rates might strongly impact on China's foreign and security policies, potentially raising even more the dangers surrounding Taiwan. Various plausible renditions of such differing scenarios are discussed below.

WHAT IF? – Scenarios

China's medium-term economic performance – assuming that mass immigration to compensate for domestic population decline is not a very likely option for cultural reasons – will be primarily determined by two factors: the degree to which [political risks](#) – both domestic and external – impact on economic policymaking; and whether China can strongly improve [productivity growth](#), given that it remains well below the global productivity frontier. With these two key uncertainties as axes, one can imagine the following four scenarios.

Scenario 1: Unstoppable China

The domestic political risk for business activity in China seems to have declined following the annual Central Economic Work Conference (CEWC) (which in 2022 took place on 6 December). As [analysed](#), for example, by the Asia Society, the policy decided upon during that meeting has 'sufficiently changed' compared to 2021 'to demonstrate a deliberate shift in policy emphasis', with less emphasis on the role of ideology and more on the importance of the private sector in particular. Regarding the external political risks, following the confirmation of Xi Jinping as the undisputed leader of China and its Communist Party at the 20th Party Congress in October 2022, the original 'wolf warrior', Zhao Lijian, was [removed](#) as speaker of China's foreign ministry, signalling an overture to the West. Even before that event, China made attempts to [re-normalise](#) its relationship with Australia. Chinese diplomats have recently also started to make friendly overtures towards European and Japanese counterparts, and there are some signs that the Chinese side wants at least to stabilise the relationship with the US (including making former ambassador to the US [Qin Gang](#) the new foreign minister).

At the same time – under this scenario – China manages to translate its strong support for innovation into rising productivity growth: not only did the 20th Party Congress establish a Politburo where at least one in four members have a [background in natural sciences](#), but China is rapidly raising expenditure on research and innovation in an attempt to leapfrog its competitors. Assuming that these efforts produce the desired effects – China has, for example, made [great advances](#) in artificial intelligence in the recent past – and that these are translated into processes and products, productivity growth would pick up again.

Based on these developments, assuming that a stable international environment continues into the 2030s and that the next Party Congress in 2027 confirms the described overall orientations, China's growth rate could reach 5 % per year on average at the end of the 2020s and in the early 2030s.

This scenario would probably still be conducive to rising exports from most EU countries, although Chinese products are increasingly challenging the privileged position enjoyed by European companies in well-defined sectors, a development which is already visible in the car industry and particularly in the market for electronic vehicles. Furthermore, given that, in this scenario, the size of the Chinese middle class will soon be bigger than that of the G7 (including the EU), EU companies will increasingly transfer activities to China, a trend which would also be pushed by the country's successful innovation policies. Europe would then risk falling further and further behind on innovation, thus limiting its long-term growth potential. There would also be a serious risk that imports from China would continue to increase strongly, leading to further rising trade deficits (and, in the long run, pressure on the euro exchange rate). China would very likely further raise its imports of all kinds of commodities, including energy and raw materials, increasing price pressures and causing inflation for the EU.

Scenario 2: Coping against all odds

The shift in the 2022 CEWC report mentioned in scenario 1 might represent 'only a partial correction in the Party's post-2017 economic policy course'. As clearly stated by the [Asia Society](#): 'the Chinese official class will remain cautious about giving effect to **tactical political changes**, in case the political winds blow in a different direction in a few years. Finally, the entrepreneurial class itself may also remain cautious for the same reason.' On foreign policy, too, 'the clear division between foreign policy and the military establishment would be reinforced'. The US would continue to try to [limit China's technological](#) catch-up/leapfrogging by persuading its allies in Europe and Asia to follow strictly its policy of hindering China's technological rise. Faced with strong headwinds, Western companies – while not fully retreating from the still very important Chinese market – would intensify their de-risking strategies, with technologically very advanced ones obliged to shift parts of their business out of China.

Against all odds, however, China manages to raise its productivity growth considerably, meaning that, in spite of the rising (domestic and international) risks for business, GDP growth is still around 3 % on average in the medium term. In this case, and also depending on the growth performance of China's main competitors (the US, Europe, Japan and South Korea), the leadership could turn again to the disdainful 'wolf warrior' approach of the recent past, trying to compensate for declining legitimacy, deriving from weakening prosperity, by promoting nationalism.

Such a scenario would probably imply lower increases in demand by China and third countries strongly linked to its economy, combined with significant de-risking by many Western companies. This would mean that, in the medium term, growth in the EU will be weaker, while Chinese exporters would still become ever more serious rivals for their European business counterparts.

Scenario 3: Failing in innovation

This scenario assumes that the domestic and international risks recede, creating a favourable environment for business and innovation. However, somewhat surprisingly under these favourable conditions, China does not manage to repeat the success of South Korea and of Taiwan (which at a similar stage of development managed to overcome the '[middle income trap](#)'). The rise in expenditure on innovation, for example, does not produce the desired effects, not least due to widespread corruption and waste of resources, as in the case of [semiconductors](#). Furthermore, China's youth no longer sees the usefulness of working as hard as their parents did ('[lying-flat generation](#)') and [gender discrimination at work](#) continues. For all these reasons, China does not manage to fully catch up technologically with its main competitors.

However, given the huge domestic markets, successful policies to raise the currently very low rate of consumption and to reform the pension system, combined with the favourable business conditions, means that the medium-term growth rate would still be higher than 2 %.

This would be a somewhat benign scenario for Europe, at least in the medium term, as the reorientation of the economic model towards domestic consumption would allow for an ongoing rise in European exports to China, while the country's inability to raise productivity growth strongly would reduce the attractiveness of China as an investment destination. China would probably not overtake the US as the world's biggest economy in exchange-rate terms and the increase in its military expenditure would remain limited.

Scenario 4: Repeating Japan's lost decade(s)

This scenario – while being something of a sub-scenario to the previous one – deserves particular attention (because its consequences could be potentially much more important for the EU). When

the first signs of its real estate problems appeared around 1990, Japan was [perceived](#) as an extremely dynamic and competitive economy, with some claiming that the country would soon be the 'number 1' globally.

Pretty obvious signs of over-valuation of the real estate market were [ignored](#), and it actually took some years for policymakers to fully understand the severity of the challenges. Furthermore, Japan's problems have been reinforced by the [accelerating](#) demographic decline that [started in 2009](#) and which pushed Prime Minister Kishida to [declare](#) that the country risked no longer functioning normally as a society. Against this background, the 2022 IMF [medium-term projections](#) for Japan show GDP growing at around 0.5 % per year approaching the end of this decade.

In this scenario, China would face a risk environment not conducive to business, combined with a failure to increase productivity growth. The structural factors which befell Japan (real estate and banking crisis, high indebtedness and fast demographic decline) would then ensure that China's medium-term growth would not be higher than 1 % per year on average.

WHAT NEXT? – What could be done?

A [recent study](#) comparing how major jurisdictions (including China) have tried to increase their 'economic security' shows that the global focus of measures in the short-term is likely to be on further strengthening supply chain resilience, economic coercion, screening of outbound investments and the institutionalisation of the economic security agenda. According to the same study, these are all issues where the EU has not taken any measures at all or where its measures have only been 'moderate' (e.g. supply chain resilience).

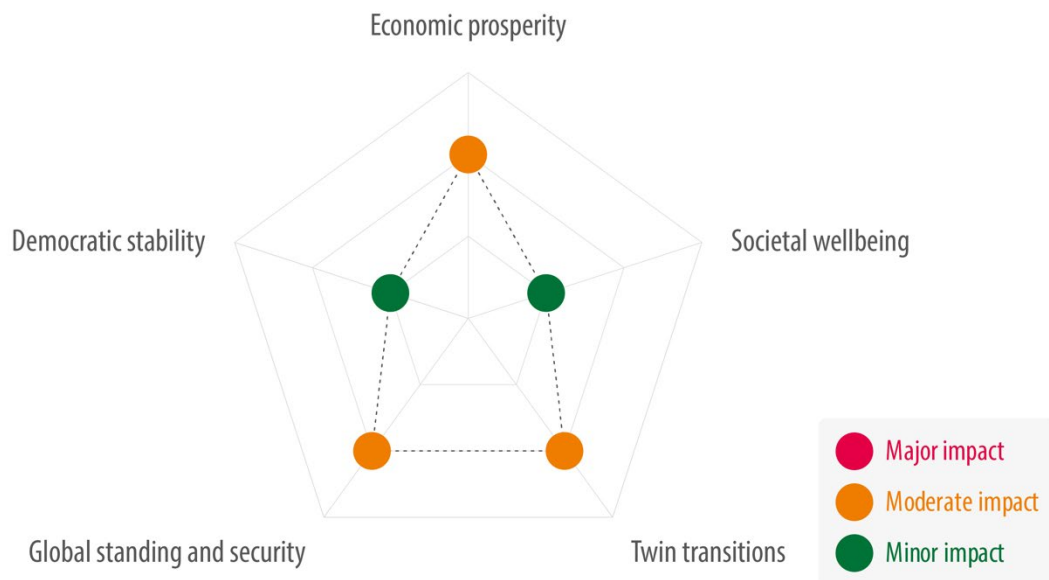
At the same time, however, the EU's possibilities to influence strongly the other dimensions mentioned above (domestic political risk in China and Chinese policies to promote productivity growth) are relatively limited.

Therefore, assuming that the EU does not want to rely dangerously on the 'lazy' scenarios 3 and (to some extent) 4, the main focus has to be on reinforcing the resilience of the EU's economies: this means increasing market competition to reduce likely inflationary pressures (from scenarios 1 and 2) and making the EU more attractive as an investment location (to avoid a business and/or brain drain). Flexible markets coupled with adequate social protection and efficient regulation should ensure that these factors are not trapped in traditional sectors and facilitate the adaptation of improved processes, new techniques and new products. These measures would not only allow the EU to prepare in the best way possible for potentially challenging developments in China, but would, independently of these, raise the prosperity of its citizens.

So that it can better face the potentially very negative effects of a serious financial crisis in China (which could result in scenario 4), the EU should ensure, in particular, that financial regulations – which have been considerably improved since 2008 – also cover new methods of finance like cryptocurrencies, which have gained in prominence since 2008.

While this analysis has not elaborated much on the potential foreign policy impacts of the different (economic) scenarios presented above, the risks outlined here have a clear link with the risks highlighted in other chapters of this report (Taiwan, Russia, disinformation and security of the internet and climate change/biodiversity, in particular).

Figure 19 – Charting the potential impact of challenges to China's growth



Source: EPRS.

References

- Asia Society Policy Institute (ed.), [China's Political-Economy, Foreign and Security Policy](#), 2023.
- Apostolou A., Al-Haschimi A. and Ricci M., [Financial risks in China's corporate sector: real estate and beyond](#), ECB Economic Bulletin, Issue 2/2022.
- IMF (ed.), [People's Republic of China: 2022 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for the People's Republic of China](#), 3 February 2023.
- Rajah R. and Leng A., [Revising down the rise of China](#), Lowy Institute, 14 March 2022.

Critical raw materials supply shock

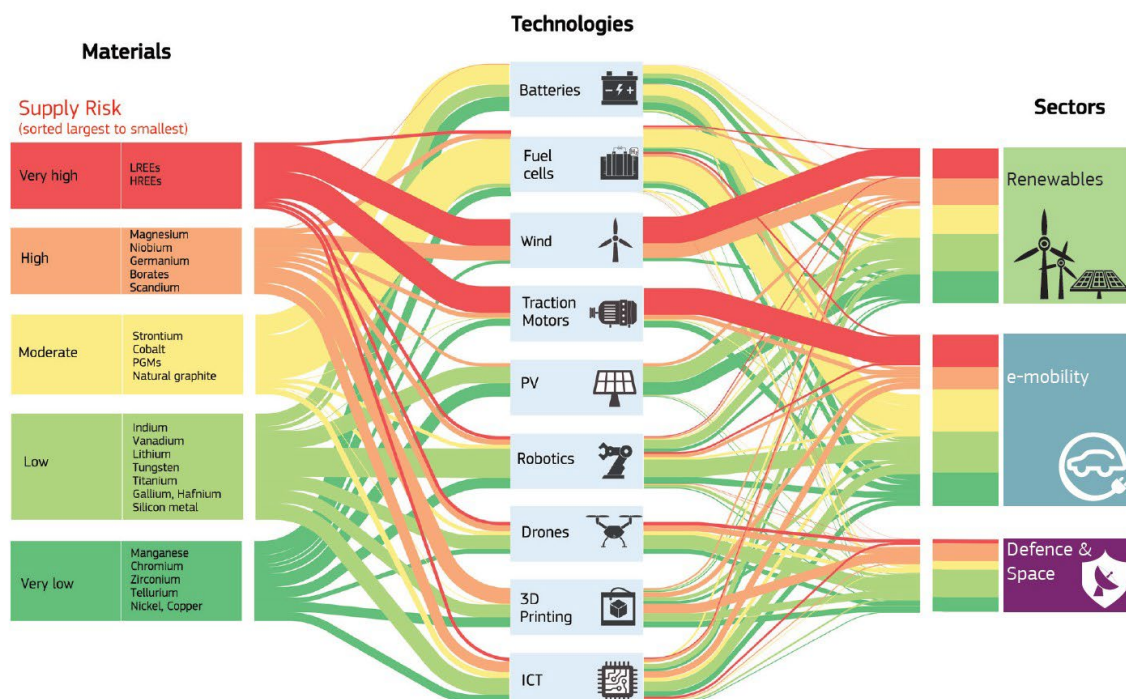
Guillaume Ragonnaud

WHAT? – What is at risk?

Over the course of history, humans have used an increasing range of the 118 known elements (in particular, metals) to foster technological innovation. Today, a wide range of key technologies in all industries rely on the unique physical properties of some specific raw materials. For instance, a smartphone contains up to 50 different kinds of metals, such as [indium](#) in its touch screen, or silicon in the many chips it contains. Permanent magnets made of 'rare earth elements' (REE – a family of 17 elements) are indispensable in the health sector for magnetic resonance imaging, and in low carbon technologies such as wind turbines (generators) and electric vehicles (motors). The importance of raw materials for the defence sector across the air, sea and land domains should not be overlooked: tantalum is used in warheads, and natural graphite is widely present, for example in the body of fighter jets and in combat identification equipment in tanks.

In this context, the EU's ambition to become a climate-neutral economy by 2050, its ability to sustain its [green and digital transitions](#), and to achieve strategic autonomy, all rely heavily on reliable, secure and resilient access to a wide range of raw materials. They constitute the foundation of all the supply chains for the key technologies needed to reach these goals.

Figure 20 – Flows of raw materials and their supply risks for nine technologies and three sectors



Source: [European Commission](#), 2020. LREE: Light rare earth elements. HREE: Heavy rare earth elements.

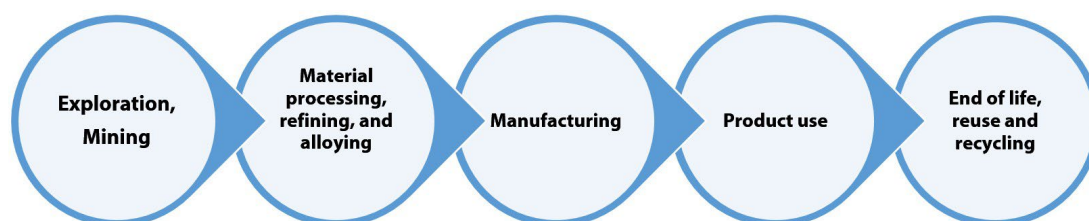
The transition to the 'net-zero age' is [materials-intensive](#). An electric car requires on average six times the mineral inputs of a conventional car; an onshore wind plant requires nine times more mineral resources than a gas-fired power plant of the same capacity. Demand for critical raw materials (CRMs) is expected to skyrocket in the coming years, to varying degrees depending on the CRM concerned. According to the [International Energy Agency](#) (IEA), the transition to reach net-zero globally by 2050 would require six times more minerals in 2040 than today. Concerning individual CRMs, even in a less ambitious scenario (consistent with meeting the Paris Agreement goals) of climate stabilisation at 'well below 2°C global temperature rise', the IEA estimates that demand for lithium would grow globally by 42 times by 2040 compared to today, graphite by 25 times, cobalt by 21 times, and nickel by 19 times.

In 2020, the [European Commission](#) estimated that, to reach climate-neutrality by 2050, taking into account only the renewables and e-mobility sectors, the EU would need up to 60 times more lithium and 15 times more cobalt in 2050, compared to current levels. Furthermore, demand for REE used in permanent magnets could increase ten-fold by 2050. In the defence sector, recent pledges by Member States regarding [higher defence spending](#) will require more CRMs to materialise. In addition, a number of still unknown key technologies may emerge in the future, using specific CRMs, while, conversely, some technologies using specific CRMs may become obsolete due to innovation; these two types of events could impact the typology of future CRM needs. In this context, it is still uncertain whether supply will keep up with the expected demand trajectories for these CRMs.

Since 2011, the Commission has drawn up, every three years, a list of raw materials that are considered 'critical' for the EU due to their considerable economic importance and very high supply risk. The 2020 list included [30 CRMs](#). In 2023, the Commission proposed an amendment to this list, which would now include [34 CRMs](#).

A wide range of risk factors make the EU vulnerable to supply shocks. The EU's import reliance on CRMs is extremely high, reaching 100 % in some cases (e.g. for borate, REE or platinum group metals). Geographically speaking, the EU is highly dependent on CRM imports from China (for several CRMs, in particular REE), Russia, Turkey (borate) and the Democratic Republic of Congo (cobalt), and the diversity of suppliers has been [decreasing](#) globally over the past few years.

Figure 21 – The different stages in the CRM supply chain



Source: EPRS, based on [United States Government Accountability Office](#), 2022.

The dependencies on CRM imports exist at diverse stages of the supply chain (Figure 21), where the supply of CRMs is often more concentrated than that of fossil fuels. For instance, primary supply of lithium, cobalt, graphite, REE and platinum group metals are highly concentrated, which represents a risk for market stability (Figure 22). Interestingly, the concentration of natural reserves is generally smaller than the concentration of actual production; the level of concentration can even be higher in the processing stage (Figure 23).

Figure 22 – Country concentration for production and reserves of some CRMs, using the [Herfindahl-Hirschmann-Index \(HHI\)](#)

CRM	Concentration index (HHI) production	Concentration index (HHI) reserves
Nickel	1 522	1 547
Lithium	3 300	2 247
Cobalt	4 713	2 998
Graphite	4 760	1 896
Rare earth oxides	4 928	2 138
Platinum Group Metals	5 377	8 167

An HHI of more than 2 500 is considered to show a highly concentrated market and a risk for market stability.

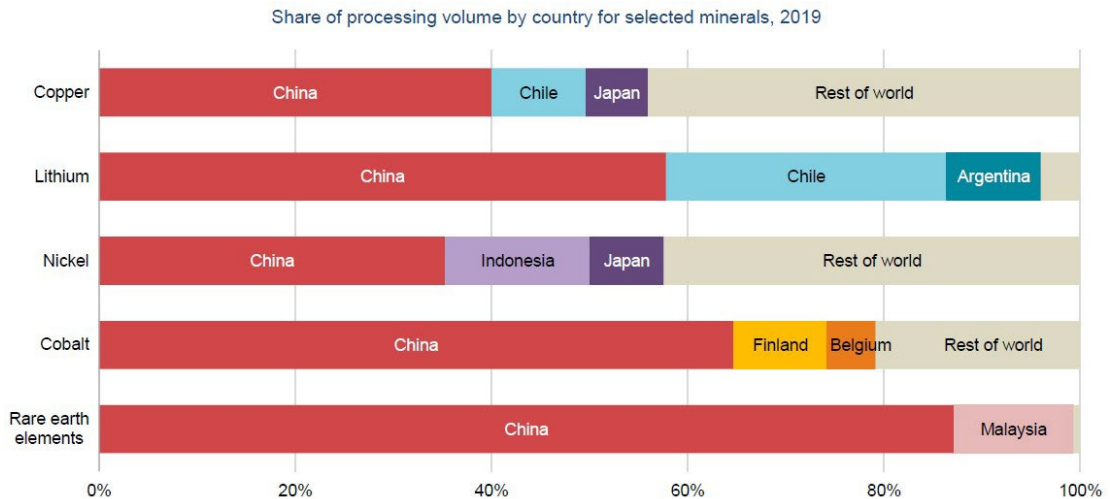
Source: [TNO, TU Delft, VWA and Bruegel](#), 2022.

China has a very strong market position for a range of CRMs (in particular, along the whole supply chain for REE).

CRM global supply chains are complex, and vulnerable to disruptions due to natural disasters, logistical issues, unfair trade practices (export restrictions, dumping, low environmental or health and safety standards), geopolitical tensions or armed conflicts. Furthermore, the risk of price shocks is high, due to the specificities of CRM markets. They are often small compared to other bulk commodities such as steel, and while demand is elastic, supply is inelastic as investments to increase production have long lead times. In addition, CRM production-related supply-side risk includes 'coproduction dependency': some CRMs are obtained as a [by-product](#) of one or more host metals from geological ores (e.g. nearly all indium production occurs as a by-product of zinc). This means that the production of CRMs generally depends on the dynamics of different and larger commodity markets,

which contributes to the [inelasticity](#) of CRM markets. CRM markets also lack transparency: they are characterised by a small number of participants, asymmetric information between market participants and observers, and incomplete information on production, prices, trade flows and inventories.

Figure 23 – Share of processing volume by country, 2019



Source: [International Energy Agency](#), 2022.

Another supply-side risk relates to the negative environmental and social impact of CRM production in many countries (sometimes including conflict minerals, forced labour and organised crime), which could jeopardise the necessary scaling up of CRM production. This situation is also a source of reputational risk for users of CRMs. For instance, cobalt is often associated with child labour. Moreover, environment-related events, such as floods, droughts or other natural disasters, represent a direct risk for CRM production; climate change has accentuated this risk. In addition, the generally negative image of mining in Europe represents a [difficulty](#) for the launch of mining projects aimed at increasing domestic supply. Skills shortages may also affect the CRM value chain if domestic production is to expand in the coming years.

There are still knowledge gaps regarding the vulnerabilities of CRM supply chains. EU-level coordination on monitoring and risk management is still [insufficient](#) to anticipate, prevent and address disruptions to the supply of CRMs.

SO WHAT? – Impact on the EU

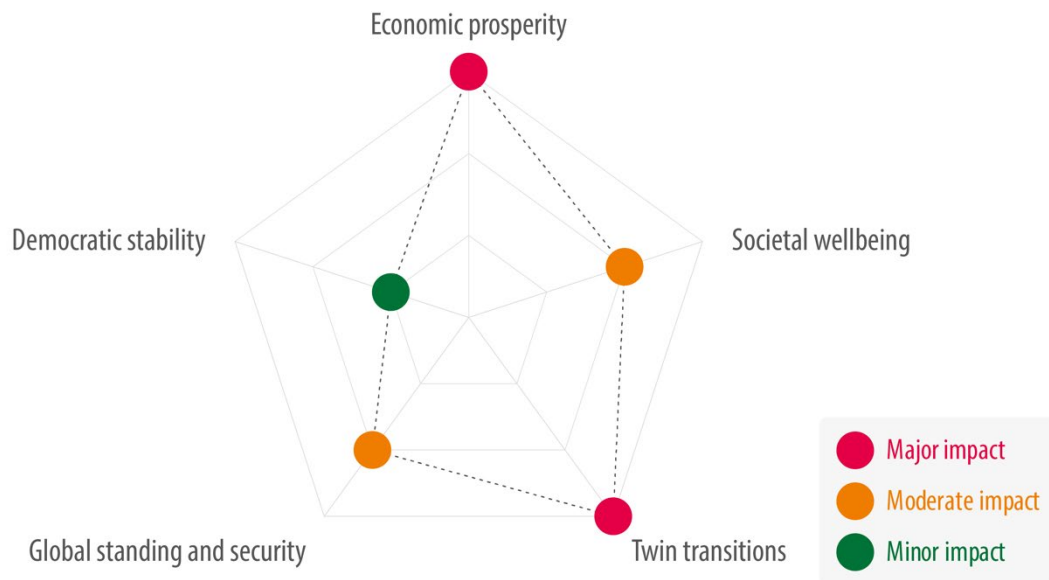
Usually considered to be strategic '[enablers](#)', CRMs could, on the contrary, become key bottlenecks for the EU on its way to achieving its strategic goals. CRM shortages would dramatically undermine the EU's freedom of action and slow down, or even put a stop to, its great aspirations to industrial transformation.

The EU would replace its historic reliance on fossil fuel imports from a few supplying third countries, with an even stronger reliance on other CRM-producing third countries, as many markets for CRMs are more concentrated than those for oil or natural gas. Without the needed primary or secondary (i.e. recycled) CRMs, the EU's technological and manufacturing base would be seriously weakened. The EU would miss the opportunities stemming from the transition to the 'net-zero' and digital age, in terms of technological development, economic growth, jobs, climate and other environmental benefits, and industrial breakthroughs. Its economic resilience and global competitiveness would also be negatively affected, and CRM supply shortages could block production lines for key goods (the 'physical inaccessibility' problem).

Volatile and/or high prices could affect prices in the whole supply chain of many industries, in an already strained context marked by higher energy prices and intensifying global competition. Surging raw material prices could jeopardise the cost reductions of clean technologies obtained over the past few years thanks to innovation and economies of scale; the rapid cost reduction trends seen over the past decade were already mostly [reversed](#) in 2021, for products ranging from batteries to solar panels and wind turbines. This would have a major impact on the volume of investment needed for clean energy transitions in the EU. As a result, some industries may have to delocalise their plants to CRM-rich countries, as the EU would lose its global attractiveness as an investment location, in particular because businesses would face a high risk of losing access to the CRMs they need. Impacts could be felt differently across Member States, though, depending on their industrial specialisation and national action on the supply of CRMs.

Importantly, CRM shortages would also be a source of critical military vulnerability for the EU. History has shown that, without the key materials needed for their defence industries, countries have been forced to make performance trade-offs that contributed to their [defeat](#) on the battlefield. As other major global actors have also engaged in the twin transition, and military expenditures have reached a [record level](#), the magnitude of the impact of CRM shortages could be increased by fierce competition between countries and industries (usage conflicts, within and between industrial sectors) for access to the same CRMs, and result in even larger problems.

Figure 24 – Potential impact of a critical raw material supply shock



Source: EPRS.

WHAT IF? – Scenarios

Scenario 1: Starvation

Under this scenario, the EU fails to address its vulnerabilities relating to its CRM supply, because it did too little, too late, was not effective in the action it took, or did not choose the right solutions. Faced with skyrocketing demand for CRMs and growing global competition to capture them, shocks in the supply chain, or weaponisation of its trade dependencies by CRM suppliers using their market power, the EU is decisively weakened by multiple CRM deficiencies impeding the development of a wide range of key industries (including the military sector).

The EU fails to achieve its main strategic goals, such as the transition to a net-zero economy (or may achieve some objectives, but with considerable delays and in a chaotic way), and is not able to rely on a strong defence sector. The EU is also dramatically weakened in its economic development. This situation jeopardises its strategic autonomy.

Events that could contribute to the unfolding of this scenario could, for example, include the decision by a country that has strong market power in one (or several) of the stages of one (or several) CRM supply chains to restrict exports to the EU. This kind of behaviour has been witnessed in recent years: in 2010, China imposed export quotas on REE, following an incident involving fishing boats from Japan and China against the backdrop of a territorial dispute over the Senkaku islands, which led to skyrocketing prices until 2014. Russia's weaponisation of the EU's energy dependence, cutting gas supplies to Europe following the beginning of the war on Ukraine, also has to be kept in mind. Naturally, other countries joining such embargos would reinforce their impact.

This scenario could also take place if the EU decided to proactively cut its supply ties with a specific country or a number of countries, in the context of geopolitical tensions.

Scenario 2: Same risky diet

This scenario takes place as a result of poor EU action to enhance its security of supply. The EU obtains mixed results, depending on CRMs, or on industrial sectors. Some successful measures allow the EU to mitigate part of the risks, but these successes are not sufficient to gain full autonomy. Therefore, the EU would remain highly vulnerable to CRM shortages that could undermine its economy and security, depending on the goodwill of its suppliers.

Scenario 3: CRM-boosted EU

In this scenario, CRMs stop being limiting factors for the EU to achieve its strategic objectives. On the contrary, it is boosted by flawless (reliable, secure, sustainable and affordable) CRM supply. The EU remains among the main global powers of the 21st century, as it is able to stay at the forefront of the technological developments (including in the defence sector) necessary to successfully face the challenges of its own time and thrive globally. The EU holds strong positions in several key stages of CRM supply chains. This results from the quick implementation of strong, decisive measures to improve EU capacity and resilience in these supply chains, enabling it to respond promptly and effectively to any contingencies (e.g. through an optimally designed [critical raw materials act](#), or the leveraging of EU funds under the Global Gateway to construct mining and processing facilities in key developing regions).

WHAT NEXT? – What could be done?

It is worth stressing first that a strategy aimed at achieving full independence from foreign supply seems unrealistic for any country or region in the global supply chain (due, for instance, to the mere distribution of natural CRM endowments); mitigating the risks associated with the supply of CRMs requires a comprehensive approach. The following measures have the potential to strengthen the EU's role and resilience in the global CRM value chain. They may cover different time horizons: short term (e.g. use of reserves) or longer term (e.g. exploration, substitution, or research).

Diversifying the primary sourcing of CRMs, and therefore lowering dependence on individual countries, is key to securing their supply. It could involve the promotion of 're-shoring' (developing domestic CRM supply chains); this could be promoted, for example, by making permitting procedures for CRM projects more efficient, and by expanding public and private (including foreign) investment at different stages in the EU supply chain (not only primary production, but also refining, or processing). Although geopolitical alliances may change over time, another approach could be to strengthen supply relations with like-minded countries ('friend-shoring'), possibly including those that are closer geographically, to reduce logistical risks ('near-shoring').

A dedicated EU CRM supply security monitoring and response body, central to preventing and addressing potential CRM shortages and involving relevant stakeholders, could be set up. It could rely on relevant market intelligence capacities and carry out strategic, economic and technical monitoring of CRM supply chains, assess EU industry's current and future needs, and produce risk analyses to support investment decisions. It could also coordinate national action on the supply of CRMs to ensure their coherence. To support its work, the transparency of supply chains should be improved and information gaps should be urgently addressed (e.g. supply chain events, market trends, stockpiling levels, prices, investments in supply chains, etc.), for instance by establishing an integrated monitoring system. This body could also steer work on the design and setting up of specific contingency planning measures; it could also contribute to designing and implementing mitigating and emergency measures, so that the EU would be able to react decisively if shortages are forecast or identified.

In this context, a system for stockpiling CRMs (or products containing CRMs) could also be set up; reserves accumulated under stockpiling could be released when access to CRMs is difficult or when prices are high. The EU could identify countries and CRMs (such as REE) on which it wants to limit its dependency to be prioritised.

Possible EU funding for specific measures could be assessed according to their added value. Specific financial instruments could also help to address risks linked to market volatility, which limit investment in the sector. The private sector could be actively involved in the EU strategy: for instance, through incentives to reshape their own supply chains or to stock strategic CRMs.

Boosting research and innovation is also a key lever for action to secure the supply of CRMs. The potential range of research topics is considerable, and each stage may be positively impacted by scientific breakthroughs (e.g. making resource extraction or refining processes more environmentally friendly, or finding substitutes for some CRMs).

Achieving a fully circular approach to CRM supply chains would improve resource efficiency at all stages of these chains and contribute to reducing demand for primary CRMs. Measures could, for instance, include improved rules on product design to extend product life and enhance the quality and quantity of recycling (and hence of secondary CRM supply, which is still insufficient).

Concerning the specific case of CRMs for defence, cooperation between the civil and military sectors should be strong, and the potential dual use of CRMs should be addressed. It is important that coherence between research, industrial, EU/national security and CRM strategies is assured through proper coordination.

Promoting higher environmental and social standards could be incentivised through legislation, guidelines (the EU has developed [principles on sustainable raw materials](#)) or certification schemes and the relevance of the methodology used by the EU to define CRMs could be regularly assessed (scope, timeframe of demand taken into account). Securing the availability of an adequately skilled and specialised workforce, as well as preserving knowledge accumulated over time in the sector, is also a key precondition for the EU CRM sector to thrive.

At international level, better cooperation with like-minded countries (e.g. via the G20, G7, [EU-US Trade and Technology Council](#) or CRM-specific forums) could make the supply of CRMs more secure. Promoting [strategic partnerships](#) and stable and diversified trade flows (through trade agreements) could contribute to this objective. Development assistance, for instance through the [Global Gateway](#), could also be used to invest in CRM supply chains in some third countries. Trade policy tools ([Free Trade Agreements](#), [Generalised Scheme of Preferences](#), or [Everything But Arms](#)) could be used as well, but seem to offer [limited leeway](#), particularly as tariffs on CRMs are already quite low.

All governance levels, from local, regional and national authorities to the EU itself, could be mobilised towards securing the supply of CRMs. The involvement of local authorities, for instance, is key to enhancing local acceptance of CRM projects, and could be facilitated, inter alia, by the European Economic and Social Committee and the European Committee of the Regions.

References

- European Commission, [Supply chain analysis and material demand forecast in strategic technologies and sectors in the EU – A foresight study](#), 2023.
- European Commission, [Study on the Critical Raw Materials for the EU 2023 – Final Report](#), 2023.
- European Commission, [A Green Deal Industrial Plan for the Net-Zero Age](#), 2023.
- European Commission, [CRMs for strategic technologies and sectors in the EU – a foresight study](#), 2020.
- European Commission, [Critical Raw Materials resilience: charting a path towards greater security and sustainability](#), 2020.
- European Commission, [Study on the EU's list of critical raw materials](#), 2020.
- European Commission, [Raw materials in the European defence industry](#), 2016.
- European Commission, [Raw materials information system](#).
- HCSS, [Strategic raw materials for defence: Mapping European industry needs](#), 2023.
- International Energy Agency, [Energy Technology Perspectives](#), 2023.
- International Energy Agency, [World Energy Outlook 2022](#), 2022.
- International Energy Agency, [The Role of Critical Minerals in Clean Energy Transitions](#), 2022.
- KU Leuven, [Metals for Clean Energy: Pathways to solving Europe's raw materials challenge](#), 2022.
- Ragonnaud G., [Critical raw materials act](#), EPRS, European Parliament, May 2023.
- Ragonnaud G., [Securing Europe's supply of CRMs: The material nature of the EU's strategic goals](#), EPRS, European Parliament, March 2023
- Systemiq, [How circular economy approaches can increase supply security for critical raw materials](#), 2022.
- TNO, TU Delft, VVA and Bruegel, [Strengthening the security of supply of products containing Critical Raw Materials for the green transition and decarbonisation](#), 2022.
- Trinomics and Artelys, [Resilience of critical supply chains for energy security and clean energy transition during and after the COVID-19 crisis](#), 2021.
- The White House, [Building resilient supply chains, revitalizing American manufacturing, and fostering broad-based growth](#), 2021.

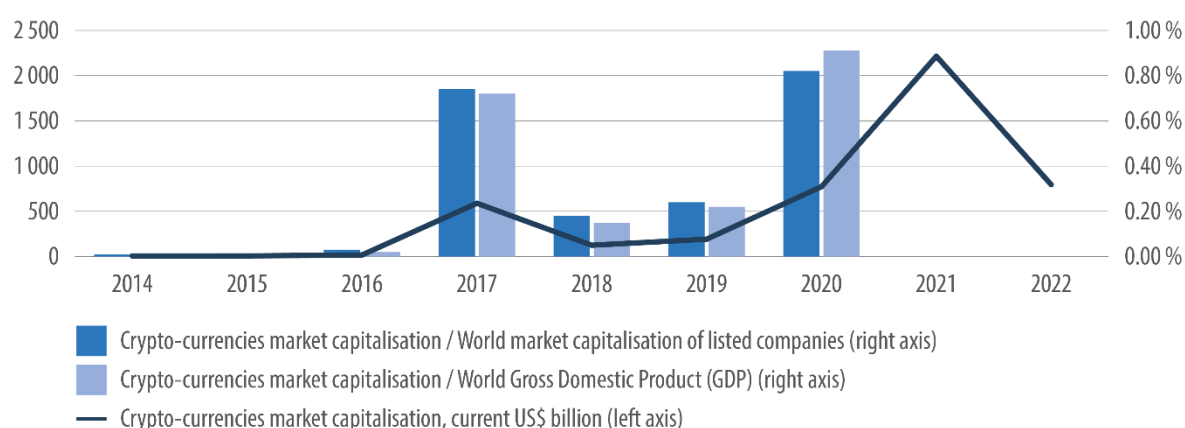
Instability stemming from the financial technology sector

Issam Hallak

WHAT? – What is at risk?

The development of new financial technologies (**Fintech**) has created new [opportunities](#) to build more inclusive and efficient financial services and promote economic development, thanks to a wider range of and facilitated access to financial products. The most notable aspects of Fintech are crypto-currencies – especially crypto-assets – accompanied by booming crypto-based financing, payment instruments and banking services.¹ However, Fintech also creates risks which require close scrutiny, of which the recent [series of failures](#) of major market players² constitute factual evidence; in all instances, crypto-currency clients not only lost value in the assets they held, but were also [unable](#) to withdraw these assets.

Figure 25 – The growing size of crypto-currency markets (includes [bitcoin](#))



Source: [World Bank](#) and [Coinmarketcap](#), author's calculations.

As [FTX](#) activities are being investigated, crypto markets have proved their capacity to expand the same range of financial instruments – e.g. ownership, lending and derivatives – as those in traditional and regulated markets. In his [report](#), FTX's new chief executive officer John J. Ray emphasises that FTX was a 'complete failure of corporate controls' and an 'absence of trustworthy financial information', adding that the system's integrity was 'compromised' and the regulatory oversight abroad 'faulty'. Interestingly, control was highly concentrated in a very small group of 'inexperienced, unsophisticated and potentially compromised individuals'.

The lack of financial literacy and managerial competences of major players in a market that is barely regulated and whose capitalisation reached 1% of world gross domestic product (GDP) in such a short while (see Figure 25) is a source of concern for investor protection and financial stability as a whole. This needs to be addressed.

SO WHAT? – Impact on the EU

The boom in the diversity of innovative and complex Fintech instruments, combined with their rapid expansion, has contributed to the creation of a new environment and the emergence of new risks. The '[burst of the crypto bubble](#)' has shown at least two major potential risks. Firstly, the protection of users – be it a firm, investor or citizen consumers – is at stake: the withholding of assets is not guaranteed at all times, and information provision as well as corporate governance are inadequate. Secondly, the speed of expansion and collapse of crypto markets constitute a potential danger for the 'traditional' financial system. These risks are [acknowledged](#) and, although the general [exposure](#) is currently limited, more sophisticated operators in traditional markets may build on their skills advantage to expand their activities in crypto markets in the future. The interconnectedness between the new and the traditional financial systems is thus expected to grow, and this could take place swiftly and unexpectedly.

These risks are being closely monitored by the EU authorities, though, and the EU legislators have just adopted a pioneering regulation on [markets in crypto-assets \(MiCA\)](#). MiCA is expected to establish a single, sound EU-level regulatory framework for crypto-assets. However, without multilateral global coordination, at least with other major economies, MiCA may not be fully effective. Financially significant third countries, such as the [United States \(US\)](#) and the [United Kingdom \(UK\)](#), have just set regulatory objectives, and the Basel Committee – the main coordination forum on banking regulation – has just adopted banking [prudential standards](#) for crypto markets, with a view to their being implemented by 2025.³

Regardless of its effectiveness, the implementation of MiCA is likely to be a [challenge](#) to the EU's supervisors in the years ahead for at least three reasons. Firstly, MiCA is innovative and the authorities will supervise a market that has little experience. Secondly, the supervisory authorities will have to build up additional capacities and staff with new competences in a very short period. Lastly, the supervision is aimed at market players which are, by nature, opposed to regulation.⁴ Time is also a potential issue: the regulatory technical standards will be defined by the EU financial authorities and the effective full application of MiCA will take up to 18 months. This gives time for systemic shocks to occur, but also new products may be traded in the meantime that require new rules.

In the meantime, the EU has launched the [DLT pilot regime](#) for market infrastructure, which will establish a scheme to trade and settle transactions in financial crypto instruments.⁵ The pilot regime aims to develop solutions for the trading and settlement of transactions in crypto-assets, and to create a new infrastructure aimed at preserving a high level of financial stability, transparency and market integrity.

All in all, the new regulation and the infrastructure put in place will allow the development of crypto-asset players and new technologies. In the long run, this may result in the concentration of activities among a few highly sophisticated market players, thereby posing new competition and macro-prudential challenges.

WHAT IF? – Scenarios

Scenario 1: Systemic risk

While the protection of EU investors and consumers is likely, to a large extent, to be secured by the recently adopted legislation, there are still potential risks for the stability of financial markets, including traditional financial institutions. What if other major (financial) markets or institutions, to which EU financial institutions are exposed, were insufficiently controlled and secured? What if a

financial system collapsed, as after the [Lehman Brothers' collapse](#), but this time with its roots in the crypto market? What if, in the EU, the new regulation was insufficient or poorly implemented due to the lack of EU capacities, or to the reluctance of the major crypto market players to comply with it? Moreover, major concerns remain regarding [contagion](#) from the crypto markets spreading to the 'traditional' banking industry and capital markets.

Scenario 2: Emergence of new technologies and/or crypto-products

Crypto market participants have proved their ability to create new products that are not subject to regulation and/or do not require lengthy investigation to determine their nature. What if new products were created that were outside the scope of the regulations which are being put in place? Given the speed with which these markets develop, compared with that of suitable regulations, there would be a period during which shocks to the financial system could occur, with major consequences.

Scenario 3: Concentration: a threat to competition and EU autonomy

While new technologies are expected to increase competition for the benefit of consumers, in the long run the 'winner takes all' effect may occur in the crypto markets on a global scale. What if, even with sound regulation and solid market infrastructures, markets gradually became highly concentrated, leaving just a few very large global players? How could a sufficient level of competition be maintained? Would large players become 'too big' and/or 'too complex' to fail? Which authority would then be capable of bailing them out? Beyond the competition aspects, would a new large 'stable' crypto-asset have political implications for the sovereignty of nations?

WHAT NEXT? – What could be done?

Firstly, the EU is pioneering EU-scale regulation of crypto-assets – but more needs to be done at the global level. The EU supports global regulatory coordination and encourages international partners to act swiftly. The Basel Committee's new [rules](#), endorsed in December 2022, to ring-fence traditional banks is a first step. The swift reaction in the US and the UK to the recent digital market turmoil shows that other major world financial centres are taking the risks seriously.

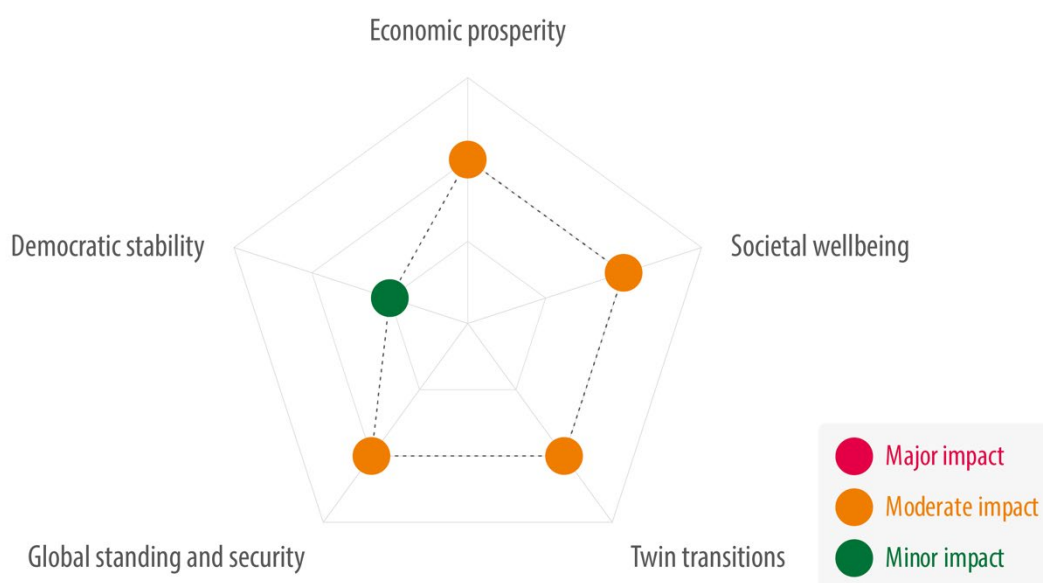
Strengthening cooperation and exchange of information with third countries could provide support to national supervisors in a first phase. Importantly, the coordinated regulation should not leave space for a race to the bottom in its implementation in order to attract crypto-related financial activities. Setting up minimum standards and buffers on crypto-based financial instruments that cover all financial institutions, beyond the banking-orientated Basel Committee, would help secure the new products and ring-fence the traditional players.

However, ring-fencing and constraining the traditional financial players may penalise the latter and favour the emergence of new, large and maybe less sophisticated players in the crypto markets. The potential concentration that may emerge in these markets could have serious impacts on traditional banking, which has proved its [resilience](#) through the various crises since 2008, apparently thanks to robust prudential rules. The risks under this scenario need to be pre-emptively assessed, with the involvement of stakeholders, and defined, examining when and to what extent intervention would be needed. One way to proceed is to put in place monitoring measures to ensure that financial institutions remain independent and assess to what extent a new digital currency, not governed by national central banks, could affect the financial system and the autonomy of nations.

Finally, even though the crypto markets seem to be replicating similar financial instruments to those in the traditional system, new financial products may emerge in the future. In the meantime, the EU should continue its surveillance of all crypto-based financial instruments and ensure they adhere to

the same regulatory environment as traditional financial institutions – in particular, stocks, bonds and derivatives. Similar requirements to use central counterparty clearing houses could be considered in the future for financial institutions that may be interested in regulated crypto markets, so that such a new financial trading platform will be regulated likewise.

Figure 26 – Charting the potential impact of shocks to fintech



Source: EPRS.

- ¹ This work adopts the EU terminology, i.e. 'crypto-currencies' are any 'currency' traded through digital-ledger technology (DLT) – from which blockchains were created – and 'crypto-assets' are crypto-currencies promising a stable value against traditional currencies such as the US dollar, the euro and the British pound.
- ² These failed larger market players include TerraUSD and [Luna](#), [Voyager Digital](#), hedge fund [Three Arrows Capital](#), and [FTX](#), whose failure drew the most media attention.
- ³ In its February 2023 [report](#) on the Commission's proposal to amend the EU banking prudential requirements, Parliament's Committee on Economic and Monetary Affairs (ECON) already included some of these standards.
- ⁴ See, for instance, the case of Binance USD, a major crypto-asset. Paxos, the Binance issuer, had insisted that it was not a 'security', and therefore could avoid market regulation. However, on 13 February 2023 the US Securities and Exchange Commission (SEC) declared it would sue Paxos for not [registering](#) Binance as a security; on the same day, the Department for Financial Services of New York, where Binance was registered, ordered that issuance cease.
- ⁵ The regime follows the '[sandbox](#)' approach, which consists of designing a concrete regulatory framework that provides a structured context for testing innovative technologies, products, services or approaches in a real-world environment.

Strategic and systemic threats to the democratic information sphere

Naja Bentzen

WHAT? – What is at risk?

Introduction

The democratic information sphere is facing unprecedented strategic and systemic threats. The 'infosphere' – the online public space for (democratic) debate where people not only express, but also inform themselves in order to make democratic decisions, on both an individual and a collective level – is being eroded by foreign and domestic anti-democratic forces with a (geo-) strategic agenda. According to a Flash Eurobarometer [survey](#) published in July 2022, 28 % of respondents said they had been exposed to disinformation and 'fake news' very often or often over the past week. A majority of respondents expressed confidence in their ability to spot disinformation and fake news: 12 % felt 'very confident' and 52 % 'somewhat confident'. The level of confidence corresponded with the level of education: the higher the education level, the higher the confidence. It decreased with age: among 15-24 year-olds, 68 % felt confident that they could recognise disinformation, compared to 59 % for those aged 55+.

At the same time, technology companies whose growth and [ad revenue](#) depend on attention and engagement promote divisive content by design. They were created with financial incentives in mind, not with a view to educating citizens or taking responsibility for a sustainable public space for democratic debate. However, in order to sustain success in the long term, these technologies also depend on the trust of users.

Both types of actors mount pressure on traditional media: leading online platforms absorb ad revenue that previously funded traditional news media – resulting in a struggling, cash-strapped global and national media landscape, and creating local [news deserts](#) across the world. This allows foreign geostrategic rivals to exploit media ownership and weaponise their own foreign-facing media to promote anti-democratic messages in the ongoing battle of narratives that was fuelled by the pandemic and further exacerbated by Russia's war of aggression on Ukraine. In parallel, and interlinked with this, increasing crackdowns on media freedom and threats to journalists – a trend also fuelled¹ by the pandemic – along with increasing governmental interference in public broadcasters, including [in Europe](#), continue to mount pressure on independent journalism, negatively impacting the information sphere.²

The boundaries between domestic and foreign actors who engage in information manipulation are increasingly blurred. This trend has become increasingly visible in recent years, including in the context of the deadly insurrection at the US Capitol on 6 January 2021, where domestic actors repeated anti-democratic narratives peddled by influential media corporations and state-sponsored foreign actors about an alleged 'stolen election' to incite the violence. The export of related conspiracy theories from the US to Europe and Latin America – which accelerated during the pandemic – has been accompanied by violence, most recently exemplified in the insurrection in Brasilia on 9 January 2023.³ At the same time, authoritarian state actors seize upon political violence in democracies – which they themselves have fuelled – as 'proof' that democracy is not working.

Geostrategic and financial incentives to spread misleading information also overlap: the infrastructure provided by the leading tech companies is enabling and facilitating the booming business of mis- and disinformation across the world.⁴

The for-profit aspect of media/social media companies is driving content to be targeted according to peoples' interests. This in turn builds echo chambers, limits political discourse in the digital public square, damages democracy, and drives political extremism. In practice, many users no longer actively seek out news or information; news and information are tailored to and targeted directly at them. Quality news and production of reliable information is expensive to produce, and is often [outcompeted](#) by free of charge, emotional content that is pushed with an ideological or financial agenda in mind, and without independent oversight.⁵ At the same time, new and readily available Artificial Intelligence (AI) tools that can produce at a very fast pace – for example, ChatGPT – could be weaponised by authoritarian actors to undermine the global information environment by mass-producing disinformation.⁶

SO WHAT? – Impact on the EU

The impact of information manipulation extends from the individual level to the collective, institutional and international levels, affecting the decision-making of national governments and international organisations. The ongoing battle of narratives between Western-style democracies and anti-democratic authoritarian states has been fuelled by the pandemic,⁷ and further exacerbated by Russia's war of aggression on Ukraine. At the same time, and partly linked to this, in recent years domestic audiences have embraced conspiracy theories that are being pushed by a variety of actors, increasingly blurring the lines between foreign and domestic actors.

A prominent example of the real risks of information manipulation on a national government level is Russia's use of anti-Ukraine and anti-Western narratives to justify its unprovoked invasion of Ukraine. These narratives include claims that Ukraine is not a 'real country' and does not exist, that Ukrainians are '[Nazis](#)' or even 'Satan', and that Ukraine hosts US biological warfare laboratories on its territory.

In recent years, Moscow has invested significant resources in information campaigns targeting Africa, Latin America and other regions of the Global South. An increasingly isolated Kremlin is currently using anti-Western narratives and other hybrid tools to secure its influence, justify its invasion and persuade countries – not least in Africa – to support its actions by blaming the West and Ukraine for the war and the resulting food scarcity.⁸ This has the potential to significantly harm the EU's partnership with Africa, and is already undermining international efforts to counter Russia's war on Ukraine. [Western democracies](#) have accused Russia of using the United Nations as a prime forum for spreading such narratives. For example, in October 2022 Russia used a United Nations Security Council meeting to [accuse](#) Ukraine of preparing to use a 'dirty bomb' (with radioactive material) against Russia. South Africa's [shift](#) towards a more pro-Kremlin stance in the wake of the decision by EU Member States and the US to deliver tanks to Ukraine is one example of the risks of Russian influence weakening unity vis-a-vis Russia in the United Nations.

In the EU, economic concern over the fall-out of Russia's war of aggression on Ukraine, combined with the perception that policymakers in Brussels are corrupt, creates fertile ground for anti-EU narratives. Inflation and budget cuts – affecting groups that already experienced rising inequality in the wake of the pandemic – could further add to the perception that the 'Brussels elite' does not care. Corrosive, targeted anti-democratic narratives about the European Union and the European Parliament – fuelled by the Qatargate scandal and readily peddled by China, Iran and Russia – can contribute to widespread erosion of trust in the European Parliament and the EU more broadly, potentially enabling anti-democratic populists to gain ground in the 2024 European elections.

WHAT IF? – Scenarios

Scenario 1: What if big tech goes rogue?

Thus far, the primary aim of the major tech companies has been to boost profits and growth. Whereas most of the biggest platforms have so far avoided explicit alignment with any specific political agenda – at least seen from the North Atlantic perspective – this could change. Elon Musk's takeover of Twitter is a case in point, given his history of spreading anti-science narratives, and his strong [business ties](#) with authoritarian actors such as Russia, China and Saudi Arabia. Since taking control, he has fired key executives and lowered protections against racist and hate speech and delivered a [string](#) of pro-Republican messages. These have increased [concern](#) about the risks of a major platform taking a highly partisan approach. In a similar way, an existing social media company could decide to work towards boosting a specific partisan, anti-democratic agenda. New platforms – launched by non-democratic states or state actors, or even pushed by anti-democratic non-state actors in a democratic country – could covertly or overtly further an ideological, anti-democratic agenda, exploiting vulnerable audiences. In such a scenario, the social media platforms in question could, for example, customise their algorithms to give preference to anti-democratic or anti-EU views and people. Ultimately, one or more large platforms with an anti-democratic agenda could use its algorithmic power to manipulate the public to vote for anti-democratic actors, foment widespread unrest and/or overthrow elected governments. In this scenario, EU legislation and action would fail to address the risks posed by algorithms to political debate and could ultimately fall victim to weaponisation of the infosphere.

Scenario 2: What if nothing is true – and nobody cares?

While local news deserts have been building across the world, a number of different actors have increased the volume of misleading or deceptive information over the past decade. For example, the Kremlin's propaganda tactics have been described as a 'firehose of falsehoods',⁹ not aiming to convince anyone about Russia's superiority, but rather to create a permanent state of confusion where 'nothing is true and everything is possible'.¹⁰ The pandemic was accompanied by an [infodemic, defined](#) by the World Health Organization as an 'an over-abundance of information – some accurate and some not – that makes it hard for people to find trustworthy sources and reliable guidance when they need it'. New AI tools that can mass-produce text for free – such as ChatGPT – have sparked further concern. By allowing both foreign and domestic information manipulators to effectively 'flood the zone', such weaponised tools can further erode trust in institutions, and indeed in the information sphere itself. News avoidance¹¹ – defined as a 'practice in which people deliberately turn away from the news' – has emerged as a problem, further undermining the economic models of traditional providers of journalism and knowledge. Inflation and austerity could disrupt the output and functioning of universities, archives, libraries and online encyclopaedias, which could lead to a total breakdown of trust in the infosphere and, by extension, in the democratic institutions that failed to protect it. Without trustworthy information, voters become more vulnerable to manipulation and may end up favouring the most entertaining candidate, without knowing – or caring about – the consequences.

Scenario 3: What if meta-conspiracy theories on steroids kill reality?

Just as the lines between foreign and domestic 'disinformants' are blurred, the lines between fiction and reality also appear increasingly murky. During the pandemic, online conspiracy theories contributed to radicalisation and resulted in offline violence around the world. One recent example is the spread of QAnon – a meta-conspiracy theory alleging the existence of a 'deep-state' network, run by global elites – which provides an umbrella narrative for a wide spectrum of related sub-conspiracy theories and played a key role in the US Capitol insurrection on 6 January 2021. QAnon-

related conspiracy theories have been exported to Latin America and Europe – including via social media platforms such as Facebook, Instagram, Twitter, YouTube and TikTok – contributing to anti-lockdown protests in Europe. In 2018, it was [estimated](#) that 66 % of links to popular websites shared on Twitter were generated by automated accounts; in 2020, a [study](#) on the Twitter accounts spreading messages about the coronavirus pandemic showed that 82 % of the top 50 influential retweeters were bots. As the risks of [algorithmic radicalisation](#) became increasingly visible during the pandemic – and as AI-enabled automatised natural language production models such as ChatGPT, as well as video manipulation such as deep fakes, have generated widespread concern – experts warn that the '[Metaverse](#)' planned by a number of tech companies will multiply such risks, affecting people to a similar degree as real-life experiences. Moreover, this hybrid 'reality' would increase the reach of surveillance for profit, further threatening the protection of privacy.¹²

Scenario 4: What if Brussels and Washington achieve a 'transatlantic effect'?

In recent years, much hope in Europe has been attached to the 'Brussels effect' of EU-driven legislation – including through the [Digital Services Act package](#) – as well as measures to reduce the demand side through education while, at the same time, boosting the supply of quality news. Accelerated geopolitical tension with China in the wake of Russia's war on Ukraine – increasing the sense of urgency to create a trustworthy information sphere that works for democracy rather than against it – could result in both the EU and the US agreeing to increase the efforts to advance their shared values in the information sphere (compromising on corporate interests in light of the increased awareness about and pushback against '[commercial determinants of health](#)', including tech companies' role in the mental health crisis by [fuelling addictive behaviour](#)). Whereas the EU's efforts to expand its strategic autonomy to the online sphere and place greater responsibility on (US) tech giants have been eyed with some suspicion in Washington DC, the increasingly visible links between domestic and international security and the strengthening of democratic values at home and abroad contribute to greater awareness about the importance of a sustainable information sphere.

WHAT NEXT? – What could be done?

Strengthen information infrastructure at home and abroad

The EU could significantly bolster the toolbox for countering foreign information manipulation and interference (FIMI), in line with the European Democracy Action Plan. This would include strengthening the information infrastructure both in Europe and in third countries. Both Russia and China have [invested heavily](#) in foreign-facing global news media as well as other elements in the global information infrastructure in recent years, including in Europe. The EU, coordinating closely with democratic allies – including the US, the UK, Canada, Australia, Japan and Norway – can initiate closer cooperation on filling news deserts and knowledge vacuums across the world. Democratic partners could work together to invest in and further develop online platforms that serve to underpin democracy, rather than to undermine it (see below). In addition to supporting media pluralism, freedom and independence in Europe – in line with the [European Media Freedom Act](#) – international cooperation to support local and regional news across the world would be important to counter Russia's and China's media dominance in large parts of the Global South. For example, EU-supported projects such as '[Local Media for Democracy](#)' – which provides financial support to help struggling local and regional media in European news deserts, including through organisational capacity building – could be exported to other continents. In addition, access to European (and UK) news agencies for local news outlets in third countries could reduce their reliance on [free of charge](#) news content from authoritarian state wire services, with China's Xinhua News Agency as a prominent example.

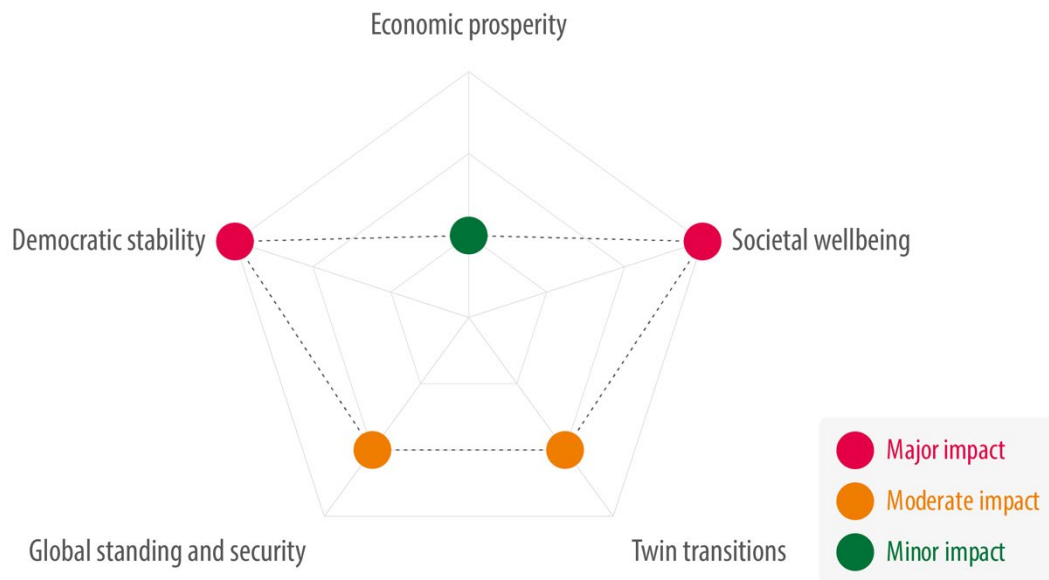
Reduce the demand side for information manipulation

Socio-political divisions and toxic polarisation play a key role in boosting the demand side: [research](#) has found that 'for the lying demagogue to have authentic appeal, it is sufficient that one side of a social divide regards the political system as flawed or illegitimate'. Accordingly, a holistic approach to countering information manipulation and building societal resilience would involve steps to counter economic and societal inequality at home. From this perspective, a security-focused approach would also justify efforts to export the European welfare model to third countries. Greater participation of citizens in democratic processes is one key to continued engagement, and policymakers and democratic institutions will increasingly have to demonstrate that democracy is delivering for the citizens. As information manipulation campaigns from authoritarian state actors continue to grow, a global push for democracy and citizens' participation – for example, in the form of a 'Conference on the Future of Democracy' – could create new shared realities, accompanied by increased efforts to raise awareness about the threats to the democratic infosphere, and to empower all citizens to boost their digital and media literacy. The European and US elections in 2024 could speed up these efforts.

Tech regulation and tech diplomacy in coordination with democratic allies

The vision of a safe, non-intrusive space, where fundamental rights are protected and where everyone has the appropriate tools to shape their own experience – including verified, reliable information, high-quality local media, and transparency about the personalisation tools of online platforms – requires strategic international cooperation. Such close-knit coordination with democratic allies (including the US, where controversial compromises on economic interests in order to defend democratic values in the infosphere may have to be made) would include working to calibrate measures to counter (geostrategic) digital threats to democracy without compromising freedom of expression, including counteracting the use of AI by authoritarian regimes to clamp down on free expression online. Efforts to boost international cooperation in line with the [Declaration for the Future of the Internet](#) and an international '[technology task force](#)' could help accelerate the joint push for global standards and norms to defend democratic values and human rights online. Close coordination with democratic allies to lessen the impact of coordinated authoritarian influence on multilateral organisations – including the United Nations – is key to sustainable solutions and common standards, and to countering increased fragmentation and digital iron curtains. With this in mind, the EU and likeminded allies will have to strategically sustain the infosphere in other continents, including providing internet access and coverage.

Figure 27 – Charting the potential impact of threats to the democratic information sphere



Source: EPRS.

- ¹ Bentzen N. with Smith T., [The impact of coronavirus on media freedom](#), EPRS, European Parliament, May 2020.
- ² Bassot E., [Ten issues to watch in 2023](#), EPRS, European Parliament, January 2023.
- ³ Ludwig J., [The insurrection in Brasília: A crisis foretold](#), George W. Bush Presidential Center, January 2023.
- ⁴ Herasimenka A., [The political economy of digital profiteering: communication resource mobilization by anti-vaccination actors](#), Oxford Internet Institute, January 2023.
- ⁵ Search engines and social media have a financial interest in linking to content that increases their ad revenue, but have no incentives for linking to pages that do not contain ads.
- ⁶ [Digital Directions: 30 January 2023](#), International Forum for Democratic Studies, National Endowment for Democracy.
- ⁷ Bentzen N., [COVID-19 foreign influence campaigns – Europe and the global battle of narratives](#), EPRS, European Parliament, April 2020.
- ⁸ Blankenship M. and Uche Ordu A., [Russia's narratives about its invasion of Ukraine are lingering in Africa](#), Brookings, June 2022.
- ⁹ Paul C. and Matthews M., [The Russian 'Firehose of Falsehood' Propaganda Model: Why It Might Work and Options to Counter It](#), Santa Monica, CA: RAND Corporation, 2016.
- ¹⁰ Pomerantsev P., [Nothing Is True and Everything Is Possible – The Surreal Heart of the New Russia](#), *Public Affairs*, 2015.
- ¹¹ Reuters Institute's 'Journalism, media, and technology trends and predictions 2023' [report](#) found evidence that a majority of publishers (72 %) are worried about increasing news avoidance. This was especially the case around 'important but often depressing topics like Ukraine and climate change'. Only 12% of the responding publishers said they were not worried about this trend. Publishers say they plan to counter this with explainer content (94 %), Q&A formats (87 %), and inspirational stories (66 %) considered important or very important this year. Only 48 % said they planned to respond by producing more positive news.
- ¹² Garber M., [We've lost the plot](#), *The Atlantic*, 30 January 2023.

The economic crisis as an accelerator for social instability in democracies

Ionel Zamfir

WHAT? – What is at risk?

Social unrest on the rise

Since the global economic and financial crisis of 2008-2009, democracies have experienced, after several decades of relative stability, a return of persistent mass protests and social movements. From Occupy Wall Street in the US to protest movements in southern Europe (Spain, Greece) during the EU economic and sovereign debt crises, to the more recent 'gilets jaunes' and anti-pension reform movements in France and the current protests over the cost of living all over Europe, such protests have expressed citizens' discontent with the way governments tackle serious economic problems. Besides the economic factors, the rejection of government responses perceived as unjust, as favouring special interests, or as disconnected from ordinary citizens' concerns was crucial to inflaming these protests. However, violent uprisings directed at toppling the government did not seem a major risk until the Capitol assault in January 2021 in the United States.

This social discontent is part of what is broadly considered a crisis of democracy that has affected most democratic governments around the world, albeit to varying degrees, with some democracies muddling through, others regressing and a few others transforming into authoritarian regimes, according to various democracy rankings ([V-DEM](#), [Freedom House](#), [EIU](#)). Populist political leaders who have exploited popular discontent – among other things, with economic governance – to consolidate their power and undermine the checks and balances of a democratic system, have played a major role in this decline. Ongoing economic hardship exacerbates citizens' perception, exploited by populists, that [democratic governments](#) cannot deliver what people need.

According to the Carnegie Endowment's [database of civic protests](#), from 2017 to the end of May 2023 almost half of the significant anti-government protests that took place in free countries (83 out of 185 significant protests) had an economic motivation. Of this, 31 lasted more than one week. Using its database, Carnegie [observed](#) a clear rise in protests motivated by economic woes, particularly by inflation in 2022. This trend also indicates a growing frustration among citizens with the way their government addresses their concerns, even if the 2022 protests were short lived. The EU has witnessed some of the largest protests over the cost of living in the world, in countries such as France, Italy and Spain.

Economic concerns have caused many other smaller protests. Unlike the Carnegie data, which have a limited focus on 'significant anti-government protests', the Armed Conflict Location & Event Data Project ([ACLED](#)) provides comprehensive information about all type of protests – small and large. According to an [analysis](#) of these data (Hossain & Hallock, 2022), the global wave of protests in 2022 was 'unprecedented'. The two authors counted 12 500 protest events in 150 countries driven by the rising cost of living from November 2021 to October 2022, which emerged in all types of political regimes without a clear pattern of distribution between democracies and authoritarian regimes.

Existing economic forecasts suggest that this trend will continue. A combination of inflation, slower growth or even [recession](#), fiscal tightening and a possible rise in unemployment could cause more

severe effects on many citizens in democratic countries as well as the rest of the world. According to the [IMF's latest economic outlook](#) from April 2023, inflation is expected to persist, even if at slightly lower levels in 2023 compared to 2022. The Fund warns that the 'policymakers have a narrow path to walk to improve prospects and minimize risks'. GDP growth is projected to slow down considerably in 2023 in the euro area, the US and other developed economies.

Inflation is of utmost concern to voters; in the US mid-term elections, inflation came out in surveys as the [top concern](#). Inflation, which is related to the prices of staple goods such as energy and food, hurts more, whether in Europe or [elsewhere](#), the less wealthy households who spend a big share of their incomes on these goods. Coupled with higher interest rates, if inflation continues at significant rates it will keep eroding purchasing power and savings and [increase](#) social inequalities and economic deprivation. [More Europeans](#) will thus be pushed below the poverty line.

As research has shown, social protests are complex phenomena driven by a multiplicity of causes, with political and economic factors often closely interwoven. Hossain and Hallock (2022) highlight that political grievances against governments considered unable to provide citizens with the basic necessities of life also play an important role in economically difficult contexts. Social factors also play a part, particularly a tradition and culture of protest at national level. An [IMF working paper](#) by Redl & Hlatshwayo (2021) that uses a machine learning technique to analyse drivers of social unrest shows that the most frequent predictor of unrest is the previous occurrence of unrest in the same country or in neighbouring countries, well ahead of inflation and food prices (around 10 times more predictive than these). Based on this model, EU countries that have experienced frequent protests in the recent past are most likely to experience it again. Developments since 2022 have confirmed this trend, but have also seen a [resurgence of protests](#) in northern European countries, which have been less exposed to protests in the recent past. New EU Member States which experienced particular economic difficulties, including some of the highest inflation rates in Europe (such as the Baltic States) did not, at least initially, witness significant protests over inflation, despite its brutal impact on the purchasing power of the population. [Commentators](#) explained this apparently paradoxical state through experience of inflation in the recent past, and a feeling of national unity in the face of hardship caused by a deeply unjust war on their doorsteps. Gradually, however, social protests by disaffected professional groups also extended their grip (e.g. in [Hungary](#) and [Romania](#)).

SO WHAT? – Impact on the EU

Erosion of democracy

The major risk related to social unrest is that it erodes democracy, particularly in highly [polarised societies](#). However, it can also [consolidate](#) democracy, if it engenders non-violent protests and leads to a constructive [dialogue](#) among social and political stakeholders. Historically, stable and mature democracies have withstood economic crises well, responding with a renewal of the economic and social model (such as the New Deal in the US after the Great Depression, the [welfare state](#) after World War II in Europe, and the neoliberal model after the stagflation of the 1970s). Economic crises, on the other hand, often led to either the sudden breakdown or the gradual suppression of democracy in emerging and fragile democracies. The most infamous such event occurred in the 1930s in Germany, with the rise to power of National Socialism. The failure of the liberal experiment in Russia, with the dramatic consequences that Europe is experiencing today, was also [related](#) in many ways to the economic hardships and instability experienced by the population in the 1990s.

From a scientific perspective, it is not easy to draw a clear causal relationship between economic factors and democratic breakdowns, since many other factors play a role. [Academics](#) have analysed multiple factors of democratic breakdown, with economic ones being only one set. For example, the impact of the huge growth of inequalities due to globalisation on the rise of populism has been

emphasised by economists, but together with other factors, such as cultural ones ([Rodrik](#)). This is confirmed by recent democratic failure or erosion in countries such as [Hungary](#), [Brazil](#), [India](#) and [Turkey](#), where the failure of economic policies played a part, albeit in combination with other factors.

The concrete risk today is that extremist and anti-democratic political forces could instrumentalise economic malaise to gain power either through elections or through violent insurgency. Both far-left and far-right groups have already tried to take advantage and to infiltrate anti-system protests, such as the [gilets jaunes](#) in [France](#), seeking to exploit the protesters' feeling of being neglected by mainstream political forces. For example, according to an [academic article](#), the 'yellow vests' protests were the expression of a France that was politically forgotten. There is an additional risk that [foreign interference](#) from a hostile authoritarian regime could try to inflame popular discontent over economic hardship. The ongoing protests in France over the pension reform also illustrate a worrying trend of growing street [violence](#) that could have potentially destabilising effects on the capacity of the democratic system to look for consensus and compromise.

Loss of legitimacy or a new opportunity for the EU?

Shared economic prosperity and social stability have been among the pillars on which the EU has been built. However, if the economic situation deteriorates, there is a serious risk that citizens hold the Union accountable for economic problems and that their anger is instrumentalised by populist forces. Furthermore, economic crises in the EU tend to deepen inequalities not only between citizens of the same country, but also between countries (as happened during the last financial and debt crisis), which can inflate anti-EU discourses. [Scapegoating](#) the Union for what are actually economic problems caused by national policies is not new, as illustrated in the recent past by the Brexit debate. For the EU, with its complicated decision-making structure that is reliant in many ways on national governments, this is a particularly serious risk. It could lead to the strengthening of existing anti-EU forces or to the emergence of new EU-sceptical political forces out of mass protest movements. This rise of populist forces could also affect the future mandate of the European Parliament, with a serious impact on the functioning of the Union. On the other hand, crises have provided a [good opportunity](#) for the EU to strengthen its integration and ways of working, but this should not be taken for granted.

WHAT IF? – Scenarios

Depth of economic crisis and trust in government determine possible scenarios

Two factors could decisively influence the risk of social instability, with potentially negative effects on democracy at national and European level: the severity of current economic difficulties (including how long they will last); and the public perception of the fairness and effectiveness of government responses. The two drivers are not fully independent of each other, since an adequate government response should avert a serious and protracted economic crisis. People are also ready to endure economic hardship for a just cause and/or in relation to an external contingency, as the war in Ukraine has shown. However, if such a scenario becomes protracted this endurance may weaken.

Four possible scenarios could be imagined.

Scenario 1: Economic hardship is transitory

In this scenario, the current economic troubles will not translate into an economic crisis, inflation will go down and unemployment will not rise significantly. There will be no debt crisis, while social costs will be minimal and remain largely related to the rise in the costs of energy and food. A well thought-out government response that provides aid to the most vulnerable should further cushion

this shock. Protests will continue at the same intensity as in 2022 for one or two more years, but most citizens in Europe understand the need to make sacrifices in the context of the war in Ukraine.

Scenario 2: Democracies show resilience in the face of serious economic vulnerabilities

In this scenario, there will be prolonged economic hardship for citizens due to persistent inflation and possibly to recession and loss of jobs. The rise in interest rates could lead to fiscal tightening but not to a major debt crisis, and deglobalisation could continue, with negative effects on the EU economy. While democratic governments will not always react efficiently, they will find a good way out of the crisis, sometimes after being forced to take on board demands from social protesters. Social unrest will be persistent up to 2030, with ups and downs, and will drive political instability in some countries. This will enable populists to remain a serious challenge, but illiberal forces will be unable to fully dismantle democratic systems anywhere in the Union.

Scenario 3: Common democratic renewal after an economic crisis

Persistent high inflation accompanied by economic recession could produce a quite severe [stagflationary debt crisis](#); the risk is that heavily indebted governments and central banks would run out of tools to address it. Fiscal tightening driven by reduced public [borrowing space](#) for many years to come would create severe social discontent and major political instability. However, this scenario leads to a positive outcome, as mass protests lead to a change in political and economic paradigms, with the EU being able to reaffirm its crucial role in tackling the crisis. With less public wealth available, better participatory and deliberative mechanisms are needed to ensure a fair distribution of wealth. Even if it loses some economic weight on the global scene, the EU remains a model of democracy and a norm-setter capable of inspiring others.

Scenario 4: A weakened Union after an economic crisis

The economic scenario is more or less the same as previously, but with a different political outcome. Each country will go its own way, with the economically more robust democracies surviving but becoming more ethnocentric and less globalised. Less mature and economically more fragile democracies could be captured by new forms of authoritarianism, either through a violent change of power or through the electoral rise of strongmen, who bring economic and social instability under control but establish personalist political regimes. To varying degrees, in both surviving democracies and new autocratic regimes, measures will be taken to put a forceful end to social protests. Chronic labour protests would have led by then to a new economic and political polarisation among those who can capture vital sectors of the economy to make their claims matter, and the others who suffer the consequences. Economic sectors affected by chronic strikes and protests (such as public transportation) will in the end have their [August 5, 1981](#) moment on European soil and will be profoundly reshaped. This would severely curtail labour rights and have very negative consequences on the green transition. In this pessimistic scenario, the EU would be much weakened, and persistent political polarisation along geographical lines (e.g. centre and periphery) and between liberal and illiberal regimes would become the new normal.

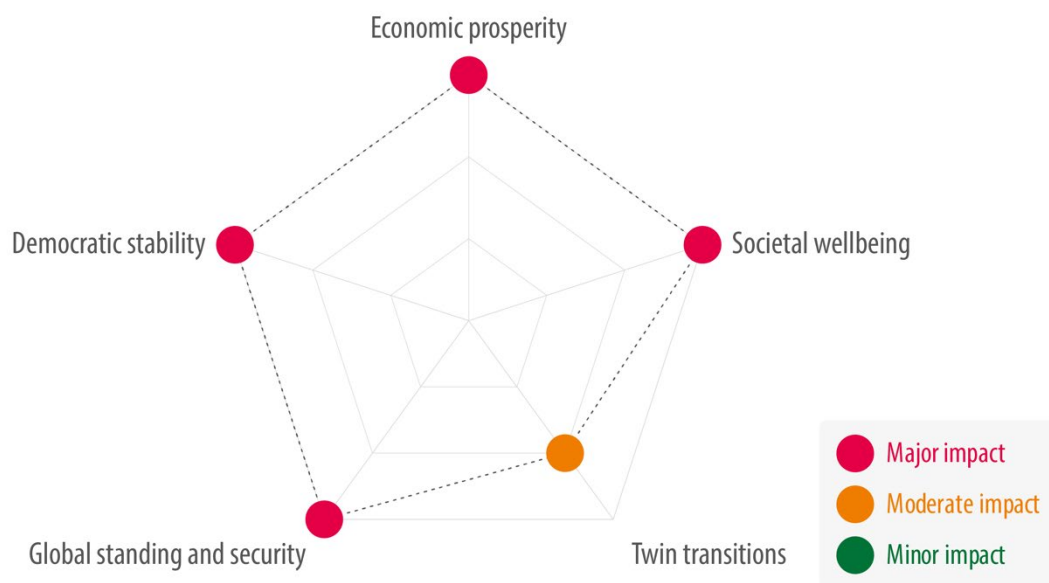
WHAT NEXT? – What could be done?

Economic hardship alone is not sufficient to cause massive social unrest. People protest when they consider that their governments bear a serious responsibility for the crisis and/or when the government response is perceived as potentially ineffective and deeply unfair. Any measures adopted by the EU and its Member States to withstand economic difficulties need to convince the public of their effectiveness and fairness. Acting in consultation and agreement with multiple

stakeholders, particularly social actors, is a way to reinforce the legitimacy of what would otherwise be unpopular measures. Preventing misinformation driven either by internal illiberal forces and/or by external enemies is crucial in this context. According to [Stefan Lehne](#), a researcher from Carnegie Europe, in order to increase the EU's resilience to future crises, 'building trust among member states and toward the EU institutions must be an ongoing concern'.

As explained in the first section, countries with a recent history of mass protests are more vulnerable to continuing social unrest, but, based on historical experience, younger democracies with a more fragile economic situation are more exposed to the risk of democratic decline or even democratic break-up. Outside the EU, developing countries with a democratic government are more [exposed](#) to an economic crisis, particularly to a [debt crisis](#) due to increased borrowing costs. A collapse of democracy in emerging markets such as Brazil, India, Indonesia or South Africa could have very serious consequences on the geopolitical equilibrium, as it would reinforce the authoritarians' camp and risks eroding the economic and political power of democracies.

Figure 28 – Charting the potential impact of social instability due to economic crisis



Source: EPRS.

References

- Barrett P. and Chen S., [The Economics of Social Unrest](#), IMF Working Paper, August 2021.
- Hossain N. and Hallock J., [Food, energy & cost of living protests, 2022](#), Friedrich Ebert Stiftung, December 2022.
- [Protests over food and fuel surged in 2022 – the biggest were in Europe](#), *Politico*, January 2023.
- Redl C. and Hlatshwayo S., [Forecasting Social Unrest: A Machine Learning Approach](#), IMF Working Paper, November 2021.

Decline in mental health and societal well-being in young Europeans

Virginia Mahieu and Gregor Erbach

WHAT? – What is at risk?

With the COVID-19 pandemic, war returning to Europe and the accompanying energy crisis, and a worsening economic outlook, all on top of a climate crisis, today's young Europeans are growing up in a volatile and difficult world. Concerns about economic prosperity, increasing competition for jobs, rising inflation and property prices make it difficult for young people to get ahead in life, to afford housing, to attain economic stability and to achieve a sense of satisfaction in society. Furthermore, underpinning many of these changes is digitalisation, which is also changing the way we socialise, work and live, with [emerging consequences](#) for mental health.

Mental health is influenced by a [complex mix](#) of socio-economic, environmental and genetic factors. Positive experiences in [childhood and adolescence](#) are important to build mental resilience, whereas early exposure to negative factors such as social isolation and loneliness, financial stress and poverty, bullying, discrimination, abuse, violence and trauma can lead to mental health difficulties, even later in life. These difficulties can range from sub-clinical anxiety and depression to full mental disorders, and [can manifest in widely different ways](#) such as withdrawal from social groups, difficulties at school, engaging in risky behaviours such as drugs and alcohol, lashing out through bullying and violence, and can even lead to suicide.

In 2021, a staggering [16.3%](#) – or over 1 in 10 – of people aged 10-19 across Europe lived with a mental disorder, and suicide was the [second most common cause of death](#) among European adolescents aged 15-19, with nearly twice the prevalence among boys than girls. In the future, living in a less secure and less economically favourable society than previous generations [could further exacerbate the mental health difficulties](#) of young people. The [shifts and shocks of our time](#) could threaten the societal well-being and mental health of young people in the long term, and make a mark on their expectations of society for the rest of their adult lives. Furthermore, children are attuned to the behaviours of the adults around them, and if the adults around them are stressed (or worse, if they take that stress out on them in the [form of maltreatment](#)), this can cause young people to experience stress as well, and even trauma.

Mental resilience, which depends on a broad set of factors, is [key](#) to how a person deals with stressful and difficult situations. By fostering social cohesion, societal support and solidarity (including with struggling peers, as some young people [felt during the pandemic](#)), many could fare quite well despite the shifts and shocks of society and the challenges around us and ahead. It is imperative that the EU understands and holistically addresses the unique challenges young European generations are facing, to foster mental resilience in society. Otherwise, today's challenges may spill over into poor mental health and societal dissatisfaction, with potential consequences for social cohesion and democracy in the EU.

Risk factors

We have identified six major trends that could contribute to a 'perfect storm' for the mental health and well-being of young Europeans. The first trend, **digitalisation**, underpins and exacerbates all of

the others to some extent. The next two are **climate anxiety** and the **long-term impact of the COVID-19 lockdowns**. These three trends will be described below. The fourth trend is **deepening social divisions**, which was included in last year's report. The final two trends are **economic stress and polarisation of the information sphere**, which are described in more detail in the two preceding chapters of this report. These final three trends will therefore not be covered in detail here. However, it is important to note that they are also extremely consequential for the mental health and societal well-being of citizens of all ages.

➤ **Digitalisation of life**

Digital technologies have, in just a few decades, completely changed the way people socialise and communicate with one another, engage with information and content, and structure their day. Digitalisation has brought many benefits and opportunities to society, but has also created some risks, the extent of which are not yet well understood. The most well-known risk is [digital addiction](#), in which excessive gaming, use of social media and/or the internet has a detrimental impact on functional life. However, digital addiction may not be the only risk faced by young people.

Though there are still few long-term studies on this topic, [several experts](#) and [organisations](#) have [raised](#) the alarm bell about regular use of digital technologies. [Previous studies](#) have consistently shown correlations between the time young children spent watching TV with attention-retention disorders, poorer communication skills and reduced physical activity. The advent of smartphones and tablets has increased the interactive nature of digital technology, and even led to their use as '[electronic babysitters](#)'. Among other effects, this is thought to possibly reduce parent-child interaction time, and hamper the ability for children to learn to self-regulate boredom. Respectively, both of these elements are crucial for a child to form stable social attachments, and to learn how to manage emotions, which are two fundamental elements of good mental health. It could also lead to heightened risk of digital addiction.

Adolescents may face different issues with digital technologies. While social media [can be a way](#) for young people to connect and stay in touch, it can also replace real-world human connections and induce feelings of loneliness, social comparison and 'fear of missing out'. Furthermore, the ease and possibility of anonymity of the internet can facilitate a feeling of invulnerability (termed '[cyber-effect](#)') and increase engagement in antisocial or risky behaviour online, including cyberbullying and cybercrime. A Horizon 2020-funded project [recently found](#) that just under half (47.76%) of 8 000 European youths report engaging in some form of criminal behaviour online.¹

Digital technologies have also changed how news and information about geopolitical events flows to and from people. During previous conflicts and crises in recent history, information would reach homes via newspapers, radio and television. In the last few decades, digital technologies bring conflicts and crises directly into the palm of the hand of young people, and [can lead to](#) feelings of helplessness and anxiety, or worse. During the COVID-19 pandemic, many young people found themselves trapped at home, scrolling the news or refreshing death toll counters (a phenomenon known as '[doomscrolling](#)' and closely related to digital addiction), which has been [associated with](#) increased depression and post-traumatic stress disorder for people with underlying vulnerabilities. Today, anyone with internet access can easily find disturbing footage, for instance from the battlefield in Ukraine – a [simple YouTube search](#) yields hundreds of examples.

The [metaverse](#), an immersive and constant virtual 3D world currently in development by several major companies, could further exacerbate these trends. It could facilitate digital addiction, reinforce loneliness from lack of real-world connections, and increase exposure to dangerous and illegal content that is difficult to moderate.

➤ **Climate anxiety**

In a similar vein, [climate anxiety](#) has emerged as a [mental health issue](#) affecting young people in particular. It is related to the broader concept of [eco-anxiety](#), defined by the American Psychological Association as 'a chronic fear of environmental doom'. It may also be linked to digitalisation, as social media and news platforms offer a plethora of access to information about climate change, and can be exacerbated by 'doomscrolling', but data on this are [mixed](#).

In a ten-country [survey](#) of 10 000 persons aged 16-25, more than half reported emotions of sadness, anxiety, anger, powerlessness, helplessness and guilt in relation to climate change. More than 45 % of respondents reported that feelings about climate change impaired their daily lives and functioning, but the proportion was lower than average in the three EU Member States that were included in the survey (Finland: 31 %, France: 35 %, Portugal: 37 %). **A majority of respondents felt betrayed rather than reassured by governments' action on climate change**, pointing to a key role for policymakers to address the issue through actions and communication. A [later study](#) with over 12 000 participants in 32 countries (nine of which are in the EU) found that climate anxiety is positively related to environment-friendly behaviours and activism, but negatively related to mental well-being. Such findings might provide [evidence of moral injury](#) under human rights law and play a part in climate change lawsuits.

Climate anxiety is an [adaptive reaction](#) to the threat of adverse climate impacts and a degradation of living conditions. On the one hand, it is an alarm system that can help overcome complacency, build resilience, and take meaningful action. Unmanaged, on the other hand, exposure to chronic stress and fear increases the risk of developing mental health problems, with potentially considerable costs and socio-economic effects.

➤ **Long-term impact of the COVID-19 lockdowns**

For many, with the [pandemic lockdowns](#) came long periods of social isolation, fear and uncertainty. For some, the lockdowns meant financial stress and jobs lost. This exacerbated many of the [risk factors](#) associated with mental health (stress, alcohol and drug abuse, domestic abuse), and weakened many of the protective factors (physical activity, social support, community interaction).

According to many sources, the pandemic led to a rise in mental health disorders that was unprecedented in recent history.² The Global Burden of Disease study estimates an [increase of over 25 %](#) globally for both major depressive disorders and anxiety disorders in just one year of the pandemic. This disproportionately affected young people: the OECD's annual [Health at a Glance: Europe](#) report for 2022 found that symptoms of depression in young adults (18-29) almost doubled in several European countries, with a similar effect in children and adolescents aged up to 18 (though data for this are less readily available). These trends are likely to decrease as the pandemic recedes, though the mark left behind could [continue to affect](#) some young people for a long time.

Regarding children, there are concerns that the lockdowns and ensuing social isolation may have a long-term developmental impact. Children need to play and socially interact with adults and peers to develop mental, physical and emotional skills, and schools are a critical part of this; schools can also be a support system for children with difficult family situations. The closure of schools cut children off from their peers, reduced playtime, and placed extra [stress on households](#), increasing family violence and compounding child mental disorders. Regarding young infants, at the time of writing published studies about the developmental effects of the lockdowns in early life [are beginning to emerge](#). One [pre-print study](#) points to a significant drop in overall cognitive performance compared to children born pre-pandemic. However, while there have been concerns about the impact of masks on social development, early results are mixed.³

The pandemic also caused a major shift in society towards more use of digital technologies for entertainment, for school, for work, and for socialising, reinforcing the digitalisation of life. Indeed, screen time of primary school-aged children [increased by about an hour a day](#) (for leisure, not including schoolwork). **Longitudinal research into whether and how this will have a long-term impact on adults of the future is needed.**

SO WHAT? – Impact on the EU

There are multiple ways of considering the impact of a broad decline in mental health on society. At the individual level, untreated mental disorders [can lead to](#) **poor quality of life, unemployment, disability** (accounting for [five of the 10 leading causes](#)), **homelessness, inappropriate incarceration, and suicide**. Suicide can have severe ramifications for family members, peers, and local communities. In particular, depression rates in bereaved family members [tend to increase](#) following a child's suicide.

These unfortunate circumstances have further societal consequences. In 2022, almost one in two young Europeans [reported unmet needs](#) for mental health care. An increase in the near future of mental disorders could place an even greater **burden on already-strained mental health services and welfare systems** and their employees. Worryingly, an increase in mental disorders could potentially be a self-propagating issue, as poor mental health of parents [predicts](#) future mental disorders of children and adolescents.

Mental disorders incur significant costs to society. In 2018, the OECD estimated that mental disorders place an [economic burden of €600 billion annually](#) across the EU. This includes €190 billion for healthcare treatment, €170 billion for **social security** programmes, and €260 billion due to a **decrease in employment and workforce productivity**. It is important to note that these estimates were made before the pandemic, and, though recent data are not yet available, costs are likely to increase due to the rising rates of mental disorders.

Below the threshold of diagnosable mental disorders, stress and anxiety from the multiple risk factors described above and in this report could lead to poor quality of life for citizens and a general sense of unhappiness in society, leading in turn to **societal dissatisfaction**. If a vast number of citizens feel as if the status quo is not satisfactory, this could spur populism (which [is embedded](#) in feelings of discontent with politics and society in general) and Euroscepticism, potentially [threatening](#) European democracy.

When analysing the potential impact of risk factors in mental health on the EU, **it is also important to look at the positive trends and possible counteracting factors**. First, there is evidence of a [changing social norm](#) of **more transparency around mental health** for young people, leading to more treatment-seeking, more social acceptability and less stigma, and more visibility for mental health in policymaking. Furthermore, the potential negative effects of digital technologies mentioned in the previous sections could also be managed, or even [partially offset by innovations](#) like telehealth, personalised medicine, awareness raising, mental health apps, and more affordable and accessible online counselling.

WHAT IF? – Scenarios

The first section explained a few of the many factors that affect mental health. Broadly speaking, these can be broken down into **'internal' factors** (a person's mental resilience), and **'external' factors** (security of situation and environment), which of course vary widely per person. These two

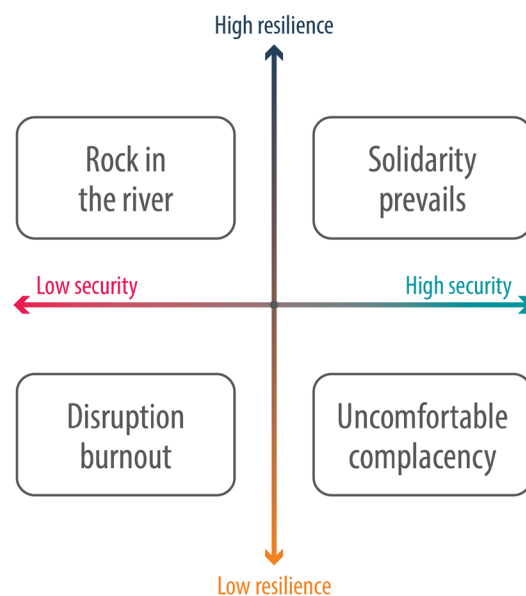
ideas, resilience and security, are also trends in European society, albeit with different definitions. Therefore, for the purposes of these scenarios, the following two axes were defined:

Resilience – For the individual, the ability to cope with stressors and disruptions, which is influenced by experiences in early life. For European society, the ability to fulfil the mental health needs of its population and keep morale and cohesion high, both in times of calm and crisis.

Security – For the individual, the security and support of family, school and peers, and the (safe) use of digital technologies. For European society, the degree of geopolitical tension or ongoing crises, including pandemics, environmental disasters, wars, economic instability and other threats.

These uncertainties vary according to the individual and their situation, so all four of the scenarios below could exist simultaneously within the population. However, depending on the national or EU-wide situation, one scenario could emerge as dominant across the EU. Furthermore, they can fluctuate rapidly over time, for instance in various waves of the pandemic and different phases of the ongoing war in Ukraine. For the purposes of this chapter, the scenarios are developed only in terms of their meaning for the EU, and are projected to **late 2030**.

Figure 29 – Four scenarios to explore the impacts on the EU of a decline in mental health and societal well-being in today's young Europeans, projected to late 2030



Source: EPRS.

Scenario 1: Rock in the river (low security, high resilience)

Despite feeling the pressure of successive crises, a struggling economy and the looming threat of climate change, Europeans have banded together and social cohesion is strong. A sense of solidarity in these difficult times dominates discourse, both in politics and on social media. The vocalness of younger generations about their growing mental health difficulties and the effects of digital technologies on their lives has led to increased EU-level support for research and healthcare. The results are paying off, as young people feel empowered in and supported by society. This has bolstered young adults' faith in the EU, and led to a renewed push for democratically tackling systemic internal and external challenges.

Scenario 2: Solidarity prevails (high security, high resilience)

The EU's measures for tackling the current disruptions have held fast, and the Fit for 55 targets have been reached. Although the climate crisis is far from over, Europeans are very proud of this achievement. Young adults active on social media spread this message across the world, leading other regions to follow suit. This draws political attention away from other quarrels and disputes, and spurs global cooperation against climate change. With more funding and political willpower available, mental health and social services receive the extra support they need, which helps mitigate some of the trauma experienced by young people during the turbulent times of the early 2020s. This bolsters faith in the EU and its values across the bloc.

Scenario 3: Disruption burnout (low security, low resilience)

European society is in crisis. The war has escalated and spread, leaving devastation in its wake, and disruptions to energy and food supplies seem to never end. Climate change is accelerating and the Fit for 55 targets have long since been forgotten. The economy is in tatters, and people struggle to afford food and keep their homes warm. Those that can afford to, escape into a digital world whenever they can to cope, with digital addiction running rampant and online echo chambers and foreign influence distorting democratic discourse. Suffering from a severe lack of funding and ever-growing pressure, mental health and welfare services are completely overwhelmed. Societal dissatisfaction spreads widely, as populist and even radicalised movements grow. Anti-EU parties are approaching a majority, and the welfare state is on the verge of collapse.

Scenario 4: Uncomfortable complacency (high security, low resilience)

Major threats have subsided or entrenched themselves and a period of relative calm ensues, with the economy slowly stabilising (but far from booming). However, a generation of people heavily marked by the turbulent times they experienced when they were young matures to adulthood, and constantly feels as if another threat could be around the corner. Mental health needs continue to be unmet, and a general sense of dissatisfaction in society is slowly growing. Climate anxiety, fuelled by widespread social media addiction and foreign influence, becomes a dominant state of mind, as societal change towards sustainability happens only very incrementally and does not quite achieve the Fit for 55 ambitions. A sense of distrust in the elites and their inability to deliver the change that has been promised drives populist and Eurosceptic discourse, placing heavy pressure on the EU.

WHAT NEXT? – What could be done?

The scenarios above demonstrate that, to mitigate a rise in mental health disorders and general societal dissatisfaction among young generations of Europeans as they mature into adults, the EU needs to work along two strands. On the one hand, **the EU needs to continue building its resilience against the major future shocks identified in this report**, including climate change and the threats from a changing geopolitical order. On the other hand, **the EU also needs to foster the well-being and social cohesion of its citizens**, and ensure the resilience of mental health services and adequate support for those struggling financially.

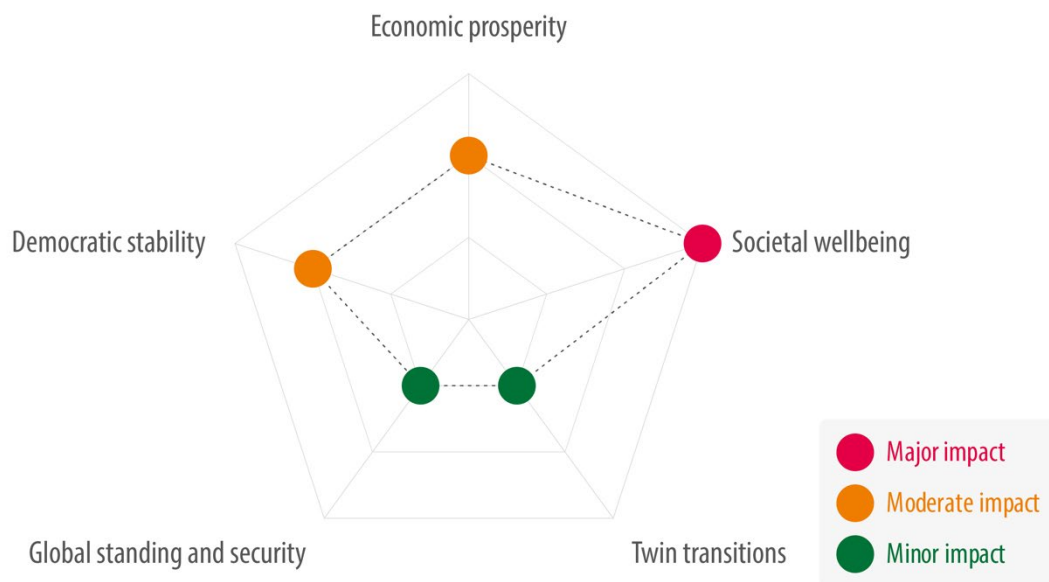
Care needs to be taken over the possible emerging threats to mental health posed by the digitalisation of life, including digital addiction, cybercrime, cyberbullying, and the potential for disinformation and foreign influence. **Further research is needed to better understand the risks of digital technologies for young people**, particularly in the long term to understand how these risks may translate into adulthood.

Currently, the [competence of the EU in public health](#) is as a supporting and coordinating body, while Member States are responsible for the delivery of healthcare services. In the area of mental health

and well-being, the EU can play a key role in sharing information and supporting cohesion across the Union. Mental health has come increasingly into focus for EU policymakers, and on 6 July 2023 the Commission adopted its first-ever [mental health strategy](#) in order to coordinate EU action towards preventing, mitigating and responding to mental health challenges. It aims, inter alia, to boost research and improve the availability of mental health professionals, while ensuring that mental health considerations are integrated into a wide variety of EU and national policies. It places a special emphasis on boosting the mental health of children and young people.

Any long-term policy decisions are ultimately for the benefit of the next generation of adults, the young people of today. They therefore need to be tailored to their particular challenges and expectations. Generally speaking, the EU must continue to make the link between its actions, its policies and their implementation, and the experience of the individual within its society.

Figure 30 – Charting the impact of declining mental health among young people



Source: EPRS.

References

Deeker W., [The Covid generation: the effects of the pandemic on youth mental health](#), Horizon: The EU Research & Innovation magazine, European Commission, January 2022.

Haughton C., Aiken M. and Cheevers C., [Cyber Babies: The Impact of Emerging Technology on the Developing Infant](#), *Psychology Research*, 2015.

Hickman C. et al., [Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey](#), *The Lancet*, December 2021.

Mental Health Europe, [Report on Digitalisation in Mental Health](#), December 2022.

OECD/European Union, [Health at a Glance: Europe 2018](#), OECD Publishing, 2018.

OECD/European Union, [Health at a Glance: Europe 2022](#), OECD Publishing, 2022.

Santomauro D. et al., [Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic](#), *The Lancet*, November 2021.

Small G. et al., [Brain health consequences of digital technology use](#), *Dialogues in Clinical Neuroscience*, 2020.

UNICEF, [The State of the World's Children 2021: Regional Brief Europe](#), 2021.

UNICEF, [On my mind: How adolescents experience and perceive mental health around the world](#) (companion report to *The State of the World's Children 2021*), 2021.

World Health Organization, [Mental health: strengthening our response](#), June 2020.

¹ Some examples of criminal behaviour online (and their prevalence) listed in the [study](#) include: digital piracy (1 in 3), illegal gambling (1 in 5), online harassment (1 in 8), money muling (1 in 8), hate speech (1 in 10), cyberbullying (1 in 10), revenge porn (1 in 11), cyberfraud (1 in 11) and identity theft (1 in 11).

² The Director-General of the WHO, Tedros Adhanom Ghebreyesus, [said in March 2021](#) that the COVID-19 pandemic caused more 'mass trauma' than World War II.

³ For example, [one study](#) found no significant impact of masks on children's ability to detect emotions, while [another](#) did.

10 policy responses for the EU

Introduction to the responses

Mario Damen

The language of response

There is a common language of risks. This language has been explored in the introduction to this report and includes definitions, risk assessment and the ranking of risks. It is spoken by consultants and insurance companies, who have made it part of their business model, and increasingly spoken by public authorities faced with crises.

This begs the question: is there similarly a common language of responses? At first sight, there is not. Insurers respond by offering financial cover for the risk and consultants by offering advice. Government responses have been part of the established government toolkit, which uses the language of law, economics, political science or public administration. Public authorities can respond to a risk with regulation, setting limits to the causes of a risk, for instance in regulating the transport of dangerous goods. They can also try to mitigate the risk through taxation or subsidies, for instance by introducing carbon taxes or subsidising investment in solar panels to mitigate climate change. Finally, governments can use more subtle policies such as information campaigns to raise risk awareness, for instance by highlighting the risks of unhealthy eating habits or a lack of movement in order to improve health. The following response chapters use many elements of this 'classic' government response language.

However, there is another language interwoven in the responses. Sometimes it is mentioned by name; in other cases, it stays implicit. This is the language increasingly used by public authorities in responding to crises, for instance the pandemic or the multiple consequences of the war in Ukraine. This language tries to bring concrete responses under a broader umbrella, showing links between them and thereby creating a narrative that is bigger than the individual risk or response. The vocabulary of this 'meta-response' language contains expressions such as 'resilience', 'strategic autonomy' and 'sovereignty', the 'capacity to act', 'reducing dependencies' and 'increasing diversification'. It seems that this language is still evolving, and sometimes new expressions are added to the dictionary, such as 'de-risking'. Before looking at the content of the responses, we will explore some terms in this evolving response language.

Resilience: The notion of resilience was part of the title of the European Commission's 2020 strategic foresight report 'Charting the course towards a more resilient Europe'. The Oxford and Cambridge online dictionaries define resilience, respectively, as 'the ability of people or things to recover quickly after something unpleasant, such as shock, injury, etc.'¹ and 'the ability to be happy, successful, etc. again after something difficult or bad has happened'.² This clarifies the choice of the term 'resilience' at that moment in time: after the first shock of the pandemic, the Commission wanted Europe to recover and be successful again, but in its introduction to the report the Commission used a much broader definition: 'Resilience is the ability not only to withstand and cope with challenges but also to undergo transitions in a sustainable, fair, and democratic manner'.³ That is more than recovering and being successful again. The Commission called for transition towards something new – a green, digital and fair Europe, as expressed in the 2019 policy guidelines of the von der Leyen Commission.⁴ The example shows that responses to a crisis – in this case, the pandemic – can contain elements of existing policy responses defined earlier in response to other risks – in this case the risks of socio-economic inequalities, geopolitical dependencies, climate

change and a lagging development of digital capacities. Nevertheless, the new framing of a set of responses also adds a new dimension to its content, and the reader may see the existing policy guidelines in a new light.

The Commission also introduced a new tool including the term 'resilience': the resilience dashboards, showing the capacities – or, if these are lacking, the vulnerabilities – in various sectors, by country.⁵ 'Resilience' has become part of the standard Commission vocabulary; its foresight report of 2022 alone uses this word 12 times.⁶ However, its use – and this remark goes for all of the response language explored – is not restricted to the Commission: it has been used in publications, declarations and resolutions of all EU institutions, including the European Parliament.

'Resilience' also appeared in the name of the EU's Recovery and Resilience Facility (RRF). The Commission defines it as 'a temporary instrument that is the centrepiece of Next Generation EU – the EU's plan to emerge stronger and more resilient from the current crisis.' More concretely: 'through the Facility, the Commission raises funds by borrowing on the capital markets (issuing bonds on behalf of the EU). These are then available to its Member States, to implement ambitious reforms and investments.'⁷ 'Resilience' has now become part of the birth of a new tool of EU policy: the issuing of 'Eurobonds'. This is an example of a reply to the question raised in the general introduction: 'How can we move from risk mitigation and management to opening new opportunities for the EU?' The need for investment capital after the pandemic and 'resilience' have been instrumental in creating a new EU capital instrument, which – as is explained in the response chapter on delivering economic recovery and resilience – may open the door to structurally new EU financing methods.

Strategic autonomy: The Commission's 2020 foresight report highlighted another term from the meta-response vocabulary: 'strategic autonomy'; although not part of the title, the report uses the term 10 times. Strategic autonomy originates from defence policy, indicating the desire for more autonomy for EU countries to shape their own strategic defence policy. Since the pandemic, it has increasingly been applied to other sectors, in particular the economy, indicating the desire for the EU to shape its own economic destiny; this may involve elements of trade or industrial policy. The European Parliamentary Research Service has explored the meaning, scope and application of strategic autonomy in several of its publications, notably a broad study in 2020 and an overview briefing in 2022. The 2020 study defines strategic autonomy as 'the ability to act autonomously as well as to choose when, in which area, and if, to act with like-minded partners'. The 2022 briefing defines it as 'the capacity of the EU to act autonomously – that is, without being dependent on other countries – in strategically important policy areas'.⁸

The concept of strategic autonomy has been criticised for focusing too much on 'autonomy', suggesting a closing off from the global surroundings and from partnerships with other countries. Therefore, pushed in particular by the advocates of free trade, the term has been complemented by the adjective 'open'. 'Open strategic autonomy' means strategic autonomy while preserving an open economy. Once launched as such in the Commission's strategic foresight report, open strategic autonomy became a key word in the 2021 Commission trade policy review⁹ and has established itself as a standard term in EU debates on the future course of its trade and industrial policies.

Another way of avoiding the interpretation of autonomy as 'fencing off' is by substituting it with the word 'sovereignty'. Strategic sovereignty and open strategic autonomy can be considered synonyms and both appear regularly in EU documents. For instance, the Versailles Declaration adopted at the informal meeting of the European Council in March 2022 pledged to 'take further decisive steps towards building our European sovereignty',¹⁰ the Commission proposed an EU

Sovereignty Fund for European industry,¹¹ and the 2023 Commission foresight report bears the title 'Sustainability and well-being at the heart of Europe's open strategic autonomy'.¹²

Capacity to act: The 'capacity to act' is another term that has become a firm part of the new response language. Again, we can trace its roots to a Commission foresight report, in this case the 2021 report, called 'The EU's capacity and freedom to act'.¹³ We do not seem to need a definition of capacity to act, although we may wonder from what that capacity derives. We may find out by looking at the responses the report presents to four global trends, all of which are still resounding in this 2023 Future Shocks report (climate change, hyper-connectivity, pressure on democracy, and demographic shifts). The 10 responses in the Commission report mention 'strengthening' (of technology, security and institutions) three times, 'ensuring' (health and food, and standard setting) and 'securing' (of energy and critical raw materials) twice each, and 'building', 'developing' and 'working' once each.

The tools for strengthening, ensuring and securing the EU's position in these areas are mostly part of the classic government toolkit: regulation, finance and information. Regulation can include international regulation through agreements, as well as EU regulation implemented by Member States. In the field of EU regulation, a new trend is the increased use by the Commission of the word 'act' for legislation; for instance, the Commission has proposed a [Chips Act](#), an [Act in Support of Ammunition Production](#), a [Critical Raw Materials Act](#), and a [Net Zero Industry Act](#). By calling something an act, the Commission does not introduce a new category of legal instrument: the four examples mentioned all take the existing legal form of a regulation.

There are two plausible explanations for the use of the word 'act'. It could be that the Commission wants to emphasise its readiness to take action, in short: its capacity to act. Another possible explanation is that the Commission wants to mimic the American legislative vocabulary, showing that it can react to US initiatives such as the Inflation Reduction Act.

Reducing dependencies and increasing diversification: Russia's invasion of Ukraine in February 2022 and the ensuing energy crisis showed the enormous dependency of many EU countries on the import of Russian fossil fuels. Apart from calling for European sovereignty, the Versailles Declaration called seven times for reducing dependencies, such as energy dependencies, phasing out dependency on Russian gas, and reducing strategic dependencies on critical raw materials such as semi-conductors, medicines and digital technologies, as well as reducing dependencies on imported agricultural products and inputs. The REPowerEU plan of May 2022 specified these goals for the energy sector. The document speaks no less than 17 times of the EU's dependence on energy imports and the need to reduce this. One of the ways to do so is by diversifying these energy imports towards other countries and other energy sources than fossil fuels; the plan mentions the notion of diversification 18 times.¹⁴ Without over-emphasising the statistics of counting words, we seem to have some solid indications that the notions of reducing dependencies and diversifying imports have become part of the EU's response language to crises of an economic and geopolitical nature.

De-risking: 'De-risking' brings us back to the initial notion of risk. The term gained particular attention and popularity after its use by European Commission President Ursula von der Leyen in her speech on 30 March 2023 on EU-China relations. She addressed the dilemma between autonomy and openness by stating that the EU should 'de-risk, not de-couple' its relations with China, and distinguished between de-risking through diplomacy and economic de-risking. The latter should be built on four pillars: a more competitive and resilient EU economy and industry, the use of trade instruments, new defensive tools for critical sectors, and alignment with other partners.¹⁵ Use of the term 'de-risking' has not stayed limited to the context of China since then, but has been applied to all kinds of, mostly economic, relations that the EU has with third countries.

Originally, the term de-risking was mostly common to the financial sector; for instance, the Commission already spoke in 2020 of de-risking investment in the energy sector.¹⁶ We can trace its use back to the aftermath of the 2008-2009 financial crisis, when banks started to pay more attention to the risks related to certain investments. In 2016, the World Bank described de-risking as the practice that 'global financial institutions are increasingly terminating or restricting business relationships with remittance companies and smaller local banks in certain regions of the world'. It also pointed to the risk of de-risking, which is reducing access to capital.¹⁷ The risk of cutting off law-abiding customers from access to capital through the practice of de-risking has been a concern to government bodies as diverse as the European Banking Authority and the US Department of State.¹⁸ Without lingering on these examples, the discussion in the financial sector makes clear that de-risking is a double-edged sword: while reducing the risks represented by certain contacts by limiting them, it also increases the risk of economic damage to actors depending on those contacts.

Union: Use of the term 'union' is not limited to the European Union as a whole, but is also applied to indicate integration efforts in specific policy areas. Although this is partly a factual description of what is being created, calls for sectoral unions often express a desire to reinforce efforts to achieve integration. In that sense, they are part of the meta-response language. For instance, in the 2022 Versailles Declaration, the EU Heads of State and Government commit to 'deepening the Capital Markets Union and completing the Banking Union'.¹⁹ In October 2022, European Council President Charles Michel expressed the desirability of increased action by stating: 'It is urgent to establish a genuine Energy Union. It will be an essential pillar of the EU sovereignty.'²⁰ This latter example illustrates the point very well by adding the adjective 'genuine' and linking this to EU sovereignty. Other examples of sectoral use of 'union' are the Defence Union and the Health Union.

Finally, we can divide these six expressions of the meta-language of response into two categories. Four expressions point to a desirable aim to be achieved: resilience, strategic autonomy, capacity to act, and union. The other two include verbs and express actions needed to achieve such an aim: reducing dependencies and increasing diversification, and de-risking.

Linking risks and responses

The introduction to this report has mentioned interlinkages between the various risks and the ensuing risk of polycrises. When risks reinforce each other, the more difficult it seems to formulate adequate responses. However, one could also turn this issue around and look at it from the side of the responses; almost always, a response offers solutions to several risks. Therefore, this report does not complement the 15 risks identified by the same number of responses; however the 10 responses cover most elements of these risks. Some responses specifically address a particular risk, for instance in the case of anti-microbial resistance. Other responses have a strong link to one or two of the risks, but equally respond to others. For instance, this is the case for efforts to safeguard our natural capital, which respond to the risks of water scarcity and biodiversity loss, but also respond to our energy needs and human well-being. Finally, some of the responses relate to multiple risks. Forging partnerships, for example, is a response category that addresses a broad range of risks, including geopolitical shifts, migration, energy security, climate change and supply chain risks. Although it is impossible to dissect all possible links between risks and responses, we nevertheless try in this section to highlight some of the main links and even visualise these in a graph. In doing so, we will also look at the language of response used in the response chapters.

Strengthening European defence capabilities for a future European security architecture is primarily a response to the risk of further Russian destabilisation of Europe through its war on Ukraine and its other activities undermining political stability. However, it also responds to other geopolitical shifts, such as China's more assertive foreign policy. Applying a broad interpretation of

security, we could even see a robust European security architecture as a response to the weaponisation of migration and the desire of younger generations for a stable peace in Europe. This chapter points to many concrete EU actions involving regulation and investment, but equally underlines the broader impact of these actions by using various expressions from the meta-response language toolkit. Referring to the EU Strategic Compass, for instance, it emphasises the need to build resilience and increase the EU's ability to act when a crisis emerges. It also quotes Parliament's position that a European Defence Union is part of the EU's objective of achieving strategic autonomy.

The chapter on **forging new partnerships in a polarised world** covers many risks. It starts from a geopolitical perspective, pointing to the need to position Europe better in a bipolar world in which China is increasingly competing with the US while strengthening its ties with Russia. In such a world, the EU tends to align itself strongly with the US, as it does on support for Ukraine. However, the chapter warns that the presidency of Donald Trump has shown that even the US can be disruptive, and it is not excluded that the US and Europe could drift further apart in the decades to come. It is therefore in the EU's interest to develop its own autonomous role on the global stage and forge partnerships with countries of the 'Global South'. The toolbox for doing so contains a number of international instruments, ranging from overarching partnership agreements to specific deals on trade, investment and environment. By using a broad approach, forging partnerships also responds to environmental and economic needs. It relates to the identified risks of China's foreign policy and growth performance, to migration, climate change, and the supply of energy and raw materials.

Reinforcing the resilience and long-term coordination of EU internet infrastructures responds, of course, to the identified risk of internet collapse, but the causes behind such a potential collapse relate to several other risks. The chapter points to geopolitical causes, leading to cyber-attacks, limitations on the use of foreign technology and the fragmentation of the internet. It also mentions nature-related causes, such as flooding or storms, which can be of human origin if they are caused by climate change. For something as important to our daily lives as the internet, 'resilience' seems adequate as a response and is indeed applied in the title and content of this chapter. The chapter also shows how meta-response language can be adapted to a sector-specific context. Instead of 'strategic autonomy' or 'sovereignty', we read about 'technological autonomy or sovereignty' and 'digital sovereignty'. The chapter explains that this is about reducing Europe's 'dependency', another term, on foreign technology and, in a broad sense, this is about (global) internet governance.

Apart from being a direct response to Belarus's weaponisation of migration, **responding to the instrumentalisation of migration** is also an indirect response to Russia's destabilisation of Europe and a contribution to a future security architecture. The means used include partnerships, sanctions, and regulation. One of the means is also the right to derogate from EU regulation in case of a crisis.

Securing energy supply in Europe responds to various risks of disruption. These include further consequences of Russia's war on Ukraine or interruptions caused by other suppliers, but also possible future disruptions if the EU cannot produce sufficient renewable energy. This links into the risks of an interruption of the supply of critical raw materials for producing solar panels or wind turbines, which partly relies on the EU's future relations with China. If the EU succeeds with the green energy transition and thereby contributes to combating climate change, the response of securing green energy supply has also served as a response to the consequences of climate change and the identified risks of droughts and biodiversity loss; these links between geopolitics, energy and climate have been highlighted in the general introduction to this report. The responses show that solving the climate-energy nexus by, inter alia, diversification also contributes to the meta-response objective of EU strategic autonomy, as the chapter mentions.

The transition to renewable energy helps with **safeguarding our natural capital** and, in turn, healthy and biodiverse nature helps not only to avoid climate change-related disasters but also to increase human well-being and – through the availability of pollinators, fertile land and water – food security. The chapter describes these links and explains that, because of the global nature of the problems involved, international agreements and partnerships have played a crucial role in the responses. The EU response includes regulation and investment, but one of the obstacles to these responses is the fact that biodiversity and nature do not have a clear economic value. Putting a price on nature (also known as including the external costs on the environment in economic prices) is complex and, even if it succeeds, may not be able to capture the intrinsic value of natural landscapes for human well-being and culture. The challenges are therefore huge, but the stakes are equally high, because the resilience of nature is not without limits.

Human intervention in natural processes that seems helpful in the short term may backfire if it is overused in the long term. This is the case for overuse of pesticides, addressed in the chapter on safeguarding our natural capital, and for the overuse of antimicrobials, as indicated in the chapter on **managing antimicrobial-resistant infections**. Antimicrobial resistance has become a threat to human health and to animals and the environment. The responses presented include more research into understanding the biological basis of antimicrobial resistance and the reduction of the use of antimicrobials.

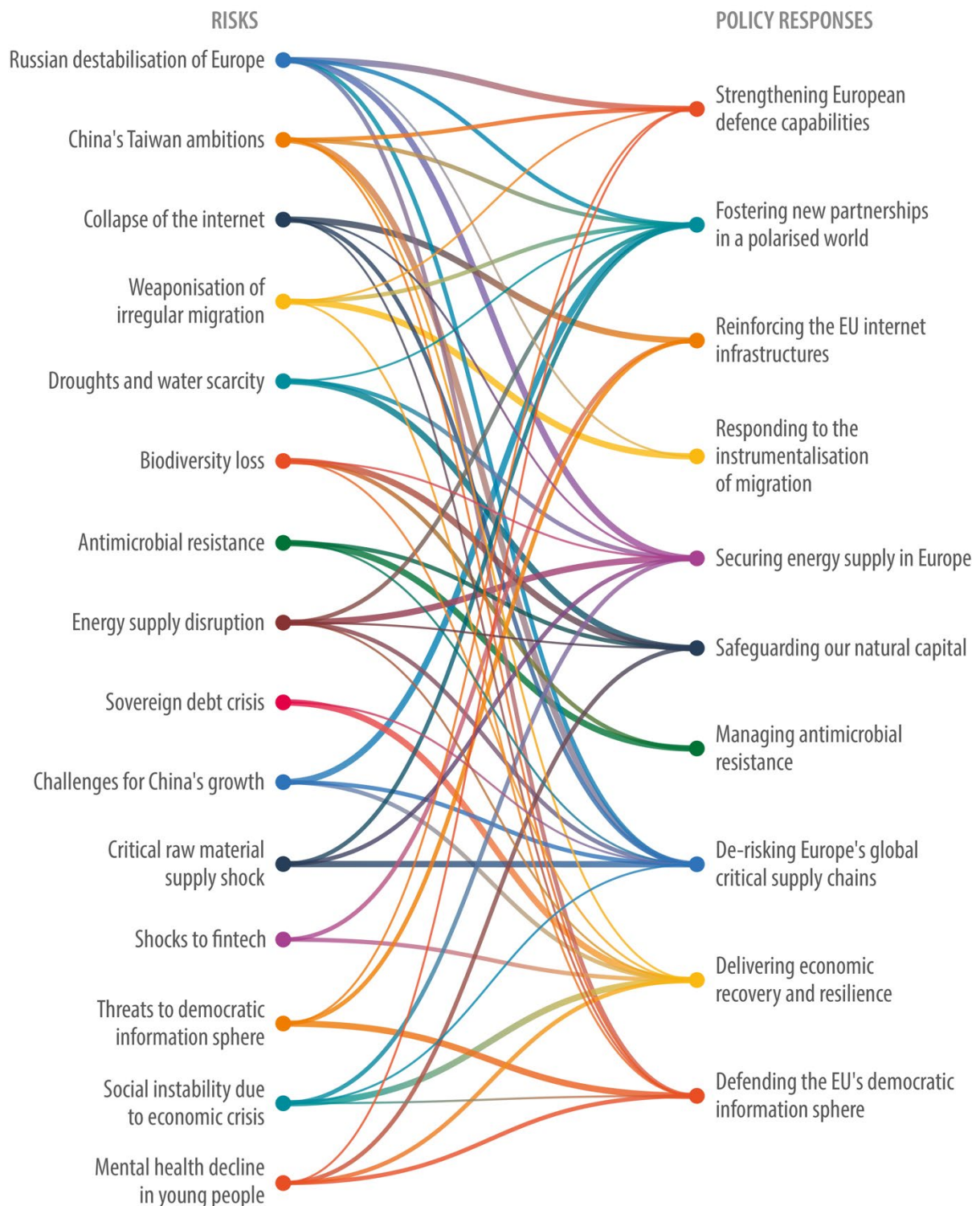
Two response chapters address economic risks. **De-risking Europe's global critical supply chains** responds to geo-economic risks for the open EU economy. This includes economic relations with China and the notion of de-risking instead of decoupling them. It closely relates to the risk of a supply shock in critical raw materials, but equally to one in energy or other products. The chapter links to several other responses and, unsurprisingly, uses quite a lot of meta-response language. It calls for developing, and diversifying, resilient value chains, and notes that reducing import dependencies should lead to strategic autonomy in Europe's supply chains. The chapter recalls that the European Parliament supports the idea of a sovereignty fund to mobilise investment for the twin green and digital transitions. A "European Sovereignty Fund for an industry "made in Europe"" was proposed by Commission President von der Leyen and further promoted by Industry Commissioner Thierry Breton in September 2022.²¹ It is another example of variations on the theme of strategic sovereignty.

Most of the responses addressed in the previous chapters require investment. The RRF, REPowerEU and the Green Deal Industrial Plan lead to increasing EU expenditure and put pressure on the EU's financial capacity to act. On top of this comes the repayment of liabilities incurred by the borrowing allocated to the NGEU and Member States' repayment of loans. The chapter on **delivering economic recovery and resilience** explores the possibility of new own resources for the EU, highlighting, for instance, revenues from plastic packaging, emissions trading, the carbon border adjustment mechanism and the European Sovereignty Fund; these resources could be part of the response to growing sovereign debt. Without economic recovery and resilience, the risk of social instability due to an economic crisis will increase.

The final response chapter addresses the risk of a deterioration of what is called our **democratic information sphere**. Acknowledging the importance of information to democratic processes, governments have a role in keeping such an information sphere accessible and free of manipulation. The EU's capacity to act in this respect faces a combination of political, technological and societal challenges. For instance, the EU has to respond to foreign information manipulation and interference (FIMI), regulate media freedom and come to grips with the influence of Artificial Intelligence and algorithms on our information sphere. The upcoming EU Artificial Intelligence Act – again an act – is the first attempt at horizontal legislation in this area.²² The chapter highlights that

people become more receptive to manipulative information if they are experiencing anxiety, loneliness or stress, and if they feel that (political) systems are not delivering on their needs, for instance by increasing economic inequality. This links back to the risks of social instability and societal dissatisfaction of young people.

Figure 31 – Links between risks and responses



Source: Author and Dataviz team, EPRS.

General direction of the responses

Can we identify a common denominator between all the responses, and what does this tell us about the EU's resilience, capacity to act or strategic autonomy? There is no single answer to these simple questions.

To find a common denominator, we could start again with a small language exercise. All response chapters start with a verb. Half of these verbs put the focus on the conservation and defence of European assets: securing energy supply, safeguarding nature, managing antimicrobial resistance, de-risking supply chains and defending our democratic values. The other half aim to reinforce what we have or even create something new: strengthening defence, forging partnerships, reinforcing the internet, responding to instrumentalised migration and delivering on the EU's financial and economic resilience. This shows that Europe's responses to the many risks facing us are a balancing act between preserving and developing, reacting and acting, demonstrating resilience to setbacks and striving to achieve strategic sovereignty. Responses require a capacity to act, and such a capacity depends on political will inside the EU and on the willingness of international partners to work together. As the response chapter on partnerships shows, in its international outreach the EU is confronted with the will of other players and by the mixed legacy of its colonial past. These are the challenges to overcome on the road towards a sovereign EU.

Responses beyond this report

As we have limited the number of responses to the risks, some possible responses did not make it into the report. One of these is the reconstruction and possible EU accession of Ukraine, and it is obviously not for a lack of importance that this does not figure as a separate chapter. On the one hand, the general introduction characterised this as a crosscutting issue and elements of response are included in the current chapters. For instance, the chapter on defence puts the EU's military support for Ukraine in focus and the chapter on the EU's economic recovery and resilience points to the finance needed for Ukraine's recovery and accession, referring the issue to the post-2027 multiannual financial framework. On the other hand, it is the complexity and the range of unknowns that justify deferring this issue to dedicated publications at a later date. The European Parliament will, *inter alia*, publish a foresight study with scenarios and policy considerations on the future of the EU and Ukraine in September 2023.

Another area that could be developed is the set of responses to the complex risks of food and feed insecurity, combined with those of environmental degradation and climate change. Elements of response are included in the chapter on safeguarding our natural capital, pointing to the common agricultural policy and its relationship with the EU's nature restoration law. The political debate, heated in some Member States, in this area is ongoing. The stakes for European and international food security are high, as indicated in the general introduction. The issue links multiple risks and responses, including the use of pesticides and fertilisers and the raw materials and energy needed for these. Therefore, it is likely to remain on the political agenda beyond the 2024 European elections and may also figure in future studies.

-
- 1 Oxford Learner's Dictionaries: definition of [resilience](#).
 - 2 Cambridge Online Dictionary: definition of [resilience](#).
 - 3 European Commission, 2020 Strategic Foresight Report – [Charting the course towards a more resilient Europe](#), Introduction.
 - 4 As indicated in the same introduction of the 2020 Strategic Foresight Report.
 - 5 European Commission, [Prototype dashboards for monitoring the geopolitical, green and digital dimensions of resilience](#) and [Prototype dashboard for monitoring the social and economic dimension of resilience](#).
 - 6 European Commission, 2022 Strategic Foresight Report – [Twinning the green and digital transitions in the new geopolitical context](#).
 - 7 Quotes taken from the Commission [website](#) on the RRF.
 - 8 See, for the study: Anghel S., Immenkamp B., Lazarou E., Saulnier J. and Wilson A., [On the path to strategic autonomy – the EU in an evolving geopolitical environment](#), EPRS, September 2020, definition on page 3; see, for the briefing: Damen M., [EU Strategic Autonomy 2013-2023 – from concept to capacity](#), EPRS, July 2022, definition on page 1.
 - 9 European Commission Communication on [Trade Policy Review – An Open, Sustainable and Assertive Trade Policy](#), COM(2021) 66 final, 18 February 2021.
 - 10 See the [Versailles Declaration](#) of 11 March 2022, in particular point 7.
 - 11 Blog of Commissioner Thierry Breton, [A European Sovereignty Fund for an industry 'made in Europe'](#), 15 September 2022.
 - 12 European Commission, [2020 strategic foresight report: sustainability and well-being at the heart of Europe's open strategic autonomy](#), 6 July 2023.
 - 13 European Commission, 2021 Strategic Foresight Report – [The EU's capacity and freedom to act](#).
 - 14 European Commission Communication on the [REPowerEU Plan](#), COM(2022) 230 final, 18 May 2022.
 - 15 [Speech by President von der Leyen on EU-China relations to the Mercator Institute for China Studies and the European Policy Centre](#), 30 March 2023.
 - 16 See the Commission [website](#) on de-risking investment in the energy sector.
 - 17 [De-risking in the financial sector](#), World Bank website, 7 October 2016, consulted on 1 July 2023.
 - 18 In 2021, for instance, the [European Banking Authority](#) (EBA) warned 'that compliance with anti-money and countering terrorist financing (AML/CTF) obligations in EU law does not require financial institutions to refuse, or terminate, business relationships with entire categories of customers'. The website of the [US Department of State](#) emphasises that 'We seek to promote financial inclusion and transparency while ensuring that the U.S. financial system is protected from money laundering and terrorism finance.'
 - 19 Versailles Declaration of 11 March 2022, point 24f.
 - 20 [The time is now: The EU needs a genuine Energy Union](#), European Council, press release, 10 October 2022.
 - 21 Blog of Commissioner Thierry Breton, [A European Sovereignty Fund for an industry 'made in Europe'](#), 15 September 2022.
 - 22 Madiega T., [Artificial Intelligence Act](#), EPRS, June 2023.

Strengthening European defence capabilities for a future European security architecture

Suzana Anghel

The issue(s) in short: The challenge and the existing gaps

The European security landscape has changed profoundly following Russia's invasion of Ukraine. In the blink of an eye, on 24 February 2022 the (post) Cold War European security architecture, with the [Helsinki Final Act](#) and the [Charter of Paris for a new Europe](#) as its pillars, was nearly swept away, while the [Organization for Security and Co-operation in Europe](#) (OSCE) saw its capacity to act paralysed. The reality of the war has rapidly transformed a hypothetical risk dreaded by some and denied by many into a multi-faceted – conventional and non-conventional – threat requiring immediate, medium- and long-term crosscutting policy responses from the EU and its Member States. Coordination with allies in NATO and with like-minded partners around the world became of paramount importance, particularly with respect to establishing and enforcing sanctions but also with respect to the multifaceted, including military, support provided to Ukraine.

The EU and NATO have [jointly condemned](#) Russia's 'unprovoked and unjustified attack' against Ukraine. Ukraine showed courage, strength and commitment to democratic principles and values, as well as resilience. Contrary to Russia's expectations, Euro-Atlantic unity was not broken but strengthened, with the Alliance reinforcing and expanding its eastern flank. NATO's new 2022 [Strategic Concept](#) identified Russia as 'the most significant and direct threat to Allies' security and to peace and stability in the Euro-Atlantic area', and it has reconfirmed the Alliance's attachment to the 'open door policy', including the 2008 Bucharest summit [decision](#) recognising 'Ukraine's and Georgia's Euro-Atlantic aspirations for membership'. In parallel, the EU [Strategic Compass](#), endorsed by the [European Council](#), outlined NATO's and the EU's complementarity, recognising 'how essential NATO is for the collective defence of its members' and acknowledging 'the important role the EU plays in today's complex security and defence environment'.

The new (in)security reality on the European continent offers momentum to bolster European defence cooperation. The joint development and purchasing of military capabilities useable in the national, EU and/or NATO framework is hence key. The argument often advanced – ensuring better value for money – remains valid, but the main question the EU and the Member States still need to answer is what kind of defence capabilities they need and for what purpose. This [requires](#), inter alia, learning from the lessons of the Ukraine war, re-strategising, in-depth transformation of Member States' armed forces, and using the EU's knowhow – building a common market and conducting voluntary joint procurement – to strengthen EU-NATO complementarity. Moving in this direction could arguably bring the EU closer to sharing the transatlantic burden, achieving strategic autonomy, and building a European defence union.

EU policy responses (Commission and Council responses so far)

A month into the war, the EU leaders [endorsed](#) the Strategic Compass, a document providing a 'shared assessment of the [Union's] strategic environment'. The Strategic Compass points to

growing strategic competition, underlines ongoing geopolitical shifts, which are likely to be accelerated by Russia's war on Ukraine, and stresses that the EU and the Member States need to jointly tackle the common multiple threats to their security. In addition, the Strategic Compass outlines a set of policy responses, some with clear-cut deadlines for fulfilment by 2030, in four main areas, which require action at EU level, national level and jointly with like-minded partners. These areas cover the EU's ability to 'act' when a crisis emerges, to 'secure' and build resilience, to 'invest' in capabilities and to cooperate with like-minded partners, including NATO.¹

EU action

At a meeting held in [Versailles](#) within weeks of the outbreak of Russia's military aggression against Ukraine, the EU leaders [confirmed](#) that defence cooperation efforts should focus on the bolstering of defence capabilities and on strengthening the European defence industry, recalling the importance of the transatlantic relationship as well as EU-NATO cooperation and complementarity. They asked the European Commission to present, jointly with the European Defence Agency (EDA), 'an analysis of the defence investment gaps'. The Commission presented its [analysis](#) in May 2022, pointing to the negative effect of 'years of defence underspending, which has led to an accumulation of gaps and shortfalls in the collective military inventories as well as reduced industrial production capacity', while welcoming the decisions of several Member States to increase defence spending. The Commission underlined that, in the [short term](#), it was urgent to 'replenish, replace and reinforce capabilities', and stressed that, in the long run, a new generation of weaponry covering the entire spectrum of capabilities – land, air, maritime, space, cyber – was needed to ensure that the Member States are well equipped to address common threats to their security, in cooperation with partners in NATO. Figure 32 gives a timeline of ongoing and future initiatives in the area of security and defence.

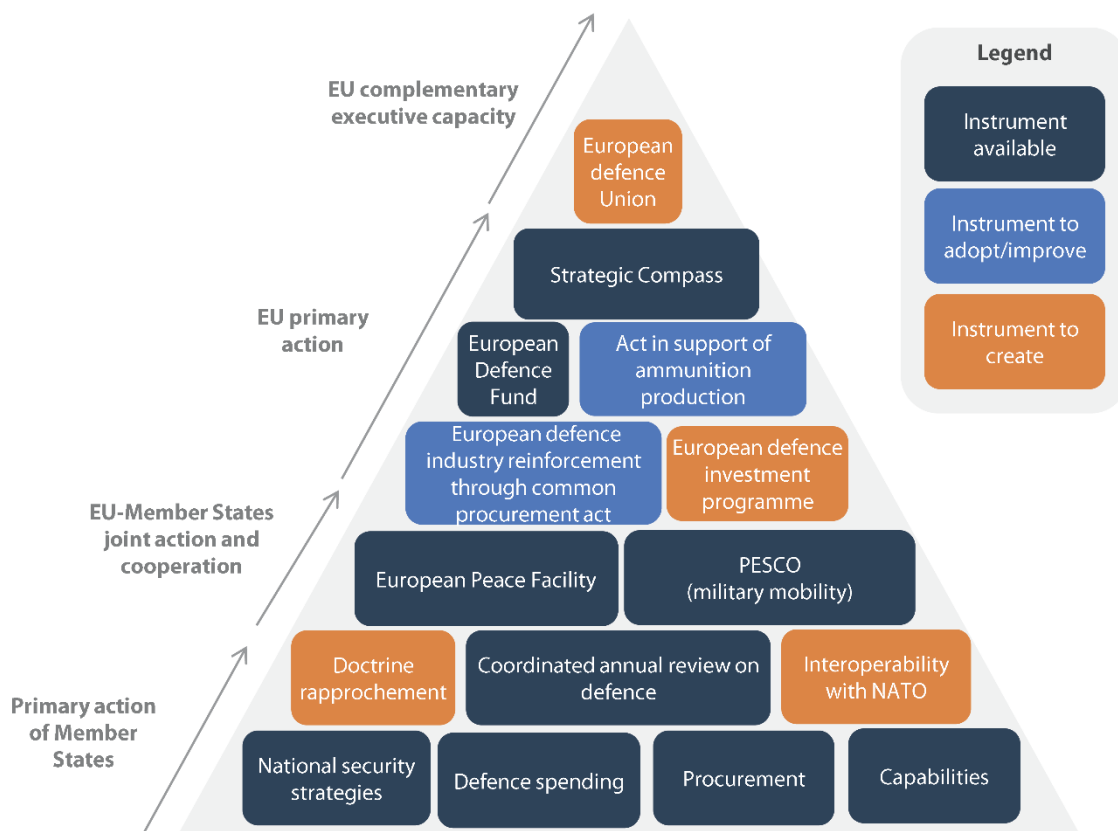
Figure 32 – Timeline of selected security and defence initiatives



Source: EPRS.

Based on the defence investments gaps analysis, the Commission presented the [European defence industry through common procurement act](#) (EDIRPA) in July 2022. EDIRPA is a [short-term instrument](#), subject to [ongoing](#) interinstitutional negotiations, intended to boost joint procurement and worth €500 million for the period 2022-2025. EDIRPA's transformative capacity does not rest on its current budgetary allocation, which remains rather modest in comparison to the needs, but on the principle it sets, namely that common procurement of defence equipment can be funded from the EU budget. A longer-term instrument, the European defence investment programme (EDIP), is expected to be presented in 2023, with the aim of facilitating the formation of European defence capabilities consortia (EDCC) that would allow Member States to jointly procure defence capabilities developed collaboratively. In the long run, EDIP will be a complementary tool to the European Defence Fund (EDF), an instrument benefiting from an €8 billion envelope for the duration of the 2021-2027 multi-annual financial framework (MFF). The EDF has two windows, research and capabilities; the EU budget fully funds the research window, while the capabilities window draws on a mix of the EU budget and Member State funding. The costs of developing prototypes are shared by the EU (20 %) and the Member States (80 %), while procurement costs are, for now, supported by the Member States. Figure 33 gives an overview of the existing instruments, those about to be adopted, and those planned in the area of defence.

Figure 33 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

In May 2023, the Commission presented the [Act in Support of Ammunition Production](#) (ASAP), an instrument intended to facilitate 'the timely availability and supply of relevant defence products in the Union'. ASAP aims to help the European defence industry ramp up its research and manufacturing capacity to meet the needs of the EU Member States as they replenish their stocks and continue to support Ukraine, and will receive funding of up to €500 million from the EU budget. The [legislative financial framework](#) provided by the Commission indicated that ASAP could be

funded from EDIRPA (€240 million), the EDF capability window (€174 million) and the EDF research window (€86 million). On 1 June 2023, the Parliament [completed](#) the first reading of the legislative procedure, voting in favour of ASAP and opening the way for [interinstitutional negotiations](#). However, upcoming negotiations with the Council will most probably focus on the question of funding, as MEPs [regretted](#) that ASAP was relying on funding allocated to other defence instruments and not on dedicated funding.

Prior to the outbreak of Russia's war on Ukraine, the EU was already exploring ways to bolster defence capabilities and strengthen the European defence industry, with the EDF, preceded by a [preparatory action on defence research](#), as a dedicated instrument. In addition to the EDF, two other interlinked mechanisms were either created, the [coordinated annual reviews on defence](#) (CARD), or activated, [permanent structured cooperation](#) (PESCO) (Articles 42.6 and 46 TEU and Protocol 10), at the time.

EU Member States, with support from the EDA, have conducted two CARD exercises thus far. A first CARD report, issued in 2020, [considered](#) 'defence spending, defence planning and defence cooperation' to be the optimal way of addressing fragmentation and duplication of capabilities. More recently, the [2022 CARD report](#) recalled the defence investment gaps analysis conducted in the early months of the war and stressed that an increase in defence spending could 'improve readiness and close long-standing capability gaps'.

PESCO is a treaty-based mechanism allowing for differentiated integration in defence. With Denmark giving up its longstanding opt-out in defence, the number of Member States participating in PESCO rose to 26, Malta being the only EU Member State outside of PESCO. There are currently 68 PESCO projects, with [military mobility](#) – a project allowing the transfer of personnel and equipment from one end of the European continent to the other – as a flagship. In parallel, the Commission presented a [joint communication](#) on improving military mobility and an [action plan](#), a dual-use initiative funded under the [Connecting Europe Facility](#) for €1.5 billion in the period 2021-2027. The concept of military mobility originates in NATO and the EU's complementary efforts can only boost the Union's cooperation with the Alliance.

In focus: EU military support to Ukraine

Ukraine receives multifaceted – political, financial, economic, humanitarian and military – support from the EU and its Member States. The EU Member States use the [European Peace Facility](#) (EPF), an off EU-budget instrument adopted in 2021, to provide Ukraine with military support. Prior to the outbreak of the war, in December 2021, the EU pledged [€31 million](#) under the EPF in non-lethal military assistance to support the Ukrainian armed forces in strengthening their logistics, cyber defence and medical capacity. After the outbreak of the war, the EU supported Ukraine with both lethal and non-lethal military assistance through the EPF. This was the first time that the Union was providing lethal military assistance to a country, a rapid U-shift in policy permitted by the EPF framework.

Eight successive tranches have progressively increased the amounts pledged under the EPF from €500 million to €5.6 billion. The last tranche, of €2 billion, was agreed politically in the [Council](#) in March 2023, a decision subsequently endorsed by the [European Council](#). Half of this amount, €1 billion, would go to reimbursing Member States for the ammunition provided to Ukraine from their own stocks/pending orders, while the other half will support joint procurement of ammunition for Ukraine. In order to cope with Ukraine's increasing needs for military assistance and, at the same time, continue to provide [support](#) to other parts of the world, the overall financial envelope of the EPF was increased progressively from €5.9 billion to [€12 billion](#) (current prices) for the period 2021-2027; further revisions of the EPF budget could still be needed. The European Council President, [Charles Michel](#), stressed that the EU will support Ukraine 'for as long as it takes'.

Another form of military support is the EU Military Assistance Mission ([EUMAM Ukraine](#)), agreed in the Council in November 2022. For the first time in the two-decade history of the Union's common security and defence policy (CSDP) missions and operations, the mission will take place in the EU and not in the country, Ukraine – for security reasons.

A number of individual EU Member States have provided bilateral military assistance to Ukraine in the form of lethal and/or non-lethal military assistance. The Kiel Institute for World Economy [lists](#) Germany (€3.57 billion), Poland (€2.42 billion) and the Netherlands (€2.36 billion) as the top three EU countries in terms of military assistance pledged during the first year of the war. The European Council [recognised](#) that the EU and its Member States have contributed 'nearly €12 billion' in military assistance during the first year of the war.

The European Parliament expressed its support for Ukraine and called on the EU Member States and like-minded partners 'to massively increase their military assistance', 'to build long-lasting unity' in support of Ukraine and 'to fully and unconditionally support Ukraine against the Russian war of aggression'. Addressing the European Council in the weeks after the outbreak of the war, European Parliament President Roberta Metsola called for unity and resilience, while in [February 2023](#) she warned the EU leaders against 'war fatigue', calling for increased support for Ukraine.

National-level initiatives

The European Council has, on several occasions, called on Member States to [increase defence spending](#). The [2022 CARD report](#) stressed that the recommendation made in the 2020 report 'to increase defence expenditure ... was largely followed' by the Member States. A similar [pledge](#) to increase defence expenditure was made within the NATO framework back in 2014, when the Allies [agreed](#) to dedicate a minimum of 2 % of their gross domestic product (GDP) to defence spending by 2024. Prior to the outbreak of Russia's war on Ukraine, the EU and NATO shared 21 members; this number has since increased by one with the accession of Finland to NATO in April 2023, while Sweden is expected to join the Alliance in the near future. A few EU Member States – Estonia, France, Latvia, Lithuania, Greece, Poland and Romania – were [meeting](#) the criterion of 2 % of GDP for defence spending prior to the outbreak of Russia's war on Ukraine in 2022. In the interim, two countries, France and Romania, have fallen [below](#) the threshold, while none of the other EU Member States who are also members of the Alliance have risen above it. Poland increased its defence spending from 2.10 % of GDP in 2021 to 2.42 % of GDP in 2022 and [announced](#) its intention to reach 3 % of GDP in 2023. Germany continues to [spend](#) around 1.5 % of its GDP on defence, while the defence '[Zeitenwende](#)' announced by Chancellor Olaf Scholz is still [awaited](#) as most of the special defence fund (€100 billion) agreed in the aftermath of the outbreak of the war is yet to be allocated.

In addition to increasing national defence spending, it is important to work towards meeting the benchmarks agreed in the EDA framework for collective procurement of defence equipment and for collaborative defence research and technology (R&T). Back in [2007](#), the EU Member States agreed on a non-binding 35 % benchmark for joint defence equipment procurement and a 20 % benchmark for European collaborative defence R&T. In [2021](#), the Member States procured collaboratively only 18 % of their purchased defence equipment and 7 % of their defence R&T. The EU may boost collaborative procurement through the newly created instruments funded from the Union's budget – EDF, EDIRPA and ASAP. However, their rather low financial envelopes do not allow them, for now, to act as game changers in enabling the Member States to meet their self-imposed benchmarks.

Defence spending decisions are national decisions. However, it is important that EU Member States [coordinate](#) defence spending in order to reduce duplication, ensure better value for money and foster interoperability among their armed forces and with Allies in NATO.

EU-NATO cooperation

In January 2023, the EU and NATO signed a new [declaration](#) of cooperation, the third since 2016. They outlined their 'determination to tackle common challenges' jointly, expressed their commitment to preserving transatlantic security, and stressed that 'conflict, fragility and instability' in the EU's neighbourhood could 'provide fertile ground for strategic competitors, as well as terrorist groups, to gain influence, destabilise societies and pose a threat to our security'. They further recognised that the two organisations 'play complementary, coherent and mutually reinforcing roles in supporting international peace and security'. The notion of complementarity is central to both [NATO's Strategic Concept](#) and the [EU's Strategic Compass](#), which recognise NATO's key deterrence and defence role and the EU's ability to help strengthen interoperability, reduce duplication and streamline spending by jointly developing and procuring capabilities.

The EU and NATO maintain close cooperation at the political level. This allows the High Representative/Vice-President of the Commission (HR/VP), Josep Borrell, to [attend](#) the meetings of the North Atlantic Council and the NATO Secretary-General, Jens Stoltenberg, to [engage](#) in an exchange of views with the European Council. At the technical level, cooperation focuses on the implementation of the [seven priorities](#) identified in the [2016](#) and [2018](#) joint declarations with NATO: hybrid threats, cybersecurity, operational cooperation, capacity building, defence capabilities, defence industry and research, and training. [Intelligence sharing](#) is still not optimal and a further normalisation of relations in this area depends on a '[durable solution](#)' to the [Cyprus problem](#).

Member States have a single set of forces they can commit to the EU, NATO, or coalitions of the willing. Efforts undertaken in the EU to strengthen and develop defence capabilities benefit the Union and NATO and could result in a robust [European pillar within NATO](#), allowing European allies' to [act autonomously](#) when needed and jointly with partners when required. A robust European pillar within NATO would allow Europeans to operate in a more autonomous way when and if needed. The EU is the key to this development; it can sharpen and build tools facilitating voluntary joint procurement of interoperable defence capabilities, and has the expertise to build a genuine defence market, if its Member States so wish. The Union can also bolster the defence industry in Europe by investing in research and development.

Position of the European Parliament

In February 2022, the European Parliament [stressed](#) that 'the Strategic Compass was a starting point for implementing a common European defence in line with the provisions laid out in Article 42(2) TEU' and 'should constitute a major step towards a genuine European defence union', which is part of the EU's 'objective of achieving strategic autonomy'. In January 2023, the Parliament adopted a [resolution](#) where it recalled the illegal and unprovoked character of Russia's military aggression against Ukraine and urged Member States to use the momentum to enhance European defence cooperation by, inter alia, 'joint and smarter spending' on capabilities and by strengthened partnerships with like-minded partners.

The Parliament [welcomed](#) ongoing efforts to bolster joint procurement through EDIRPA and the EDF that are intended to 'close critical gaps'. It urged Member States 'to commit to a significant increase in funding for the envisaged joint EU procurement mechanisms, such as the EDIRPA and the EDIP, by providing adequate funding and to take swift and thorough action in this crucial field while ensuring interoperability with NATO'. To this end, the Parliament stressed the importance of establishing 'a truly European defence equipment market' and revising the MFF to ensure that funding meets requirements. It recalled the importance of cooperating with partners, in particular NATO, welcoming the third EU-NATO Joint Declaration while urging a deepening of cooperation, including on the Alliance's eastern flank. The Parliament was also of the view that European NATO

members [needed](#) 'to take on more burden-sharing responsibilities in protecting the transatlantic space and respond to new hybrid threats'.

All the mechanisms the EU has developed prior to and after the outbreak of Russia's war on Ukraine – CARD, PESCO, EDF, EDIRPA and ASAP – contribute to the progressive framing of a European defence union, a development the European Parliament has called for in its successive resolutions. Addressing the EU leaders, President Metsola [stressed](#) that an EU 'capable of countering new threats' needs smart defence spending and would require PESCO to be reformed. She also [stressed](#) that the EU 'must go beyond the European Defence Fund and make the EU budget work for our security and defence policy whenever it adds value'.

The Parliament has also [called](#) on the EU institutions to 'unleash the full potential of the provisions of the Treaty relating to CSDP'. It has proposed 'that changes to the Treaties be considered in the case of the CSDP, to be discussed and decided upon within a convention following up on the Conference on the Future of Europe'. In the Parliament's view, Treaty change in CSDP should lead to reducing the scope of unanimity and expanding Qualified Majority Voting (QMV) in the Council for 'decisions with military implications', while maintaining, inter alia, CSDP military missions with an executive mandate and the activation of Article 42(7) TEU, the mutual assistance clause, as exceptions from QMV. The Parliament is also calling for Articles 42 and 46 TEU as well as Article 346 TFEU to be amended in order to codify EU budget spending for defence, to limit Member State's possibilities to continue to circumvent joint procurement rules, and to allow for the establishment of 'joined and permanently stationed multinational military units including command structures'.

Obstacles to implementation of response

The existing policy responses – CARD, PESCO, EDF, EDIRPA and ASAP – are a set of instruments that help to develop European defence capabilities, boost voluntary joint procurement, foster economies of scale, avoid duplication and strengthen the European defence industry. Their successful implementation depends on the Member States' willingness to change existing defence procurement patterns, which continue to favour national acquisitions rather than collaborative procurement. By creating or activating some of these instruments, the EU broke the long-lasting taboo of an EU budget that cannot be used for defence purposes. In the years to come, it is important to maximise the output that the EU budget can offer in support of security and defence by increasing the financial means allocated to the different instruments.

Political will remains key to ensuring a leap forward in security and defence. [Article 42\(2\) TEU](#) allows the boundary between defence cooperation and integration to be pushed further by moving towards 'common defence'. This development depends entirely on the European Council, but the Strategic Compass remains silent on the matter, a sign that there is, as yet, no political consensus among the EU Member States on this issue. An intermediate step would be the creation of a European defence union, a proposal the [Parliament](#) and the [Commission](#) have supported.

Policy gaps and pathway proposals

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Move towards 'common defence'	European Council	European Council to trigger Article 42(2) TEU	Resolution on the European defence union	
2	EU budget for defence	EU institutions	Make full use of the EU budget Fund EDA from the EU budget	Successive resolutions	
3	Mutual assistance clause	Council	Define the conditions for triggering Article 42(7) TEU	Successive resolutions	
4	PESCO review	EU institutions/ Member States	Assess existing PESCO projects Move beyond and use PESCO to develop capabilities	Successive resolutions	
5	EDF implementation	EU institutions/ Member States	Establish an intellectual property policy protective of defence research	Related resolution	
Proposals submitted by Member States and/or EU institutions					
6	Article 44 TEU operations	Council	Decide on the procedure applicable, if activated	Strategic Compass	
7	New funding solutions	EU institutions	Full use of EU budget opportunities	Strategic Compass	
Policy suggestions from think tanks and academia					
8	Build a European defence union	EU institutions/ Member States	Build a common doctrine and strategic culture Build interconnected national defence capabilities Build a strong European pillar in NATO	EPRS study Numerous studies on joint capabilities and EU-NATO relations	
9	Political consensus on defence policy	European Council	European Council to meet regularly to discuss security and defence matters	EPRS study	
10	Regularly assess common threats	EU institutions/ Member States	Harmonise national security strategies Regularly review the Strategic Compass	Strategic Compass	

¹ For an overview on implementation, see the EPRS study on the [Implementation of the Strategic Compass: Opportunities, challenges and timelines](#), December 2022.

Forging new partnerships in a polarised world

Myriam Goinard and Marc Jütten

The issue(s) in short: The challenge and the existing gaps

Russia's war of aggression against Ukraine is not only reshaping the security architecture of Europe, but is also influencing the EU's position as a global actor. Moreover, with rising tensions between the US and China, the EU will find itself in an increasingly bipolar world. The multilateral rules-based global order is being challenged and strategic relations around the world redefined. Key states from the so-called 'Global South', which some experts have defined as the '[swing states](#)', are becoming more important for the West in order to isolate Russia and to address global challenges. This chapter looks at options for the EU to deal with such a new situation, and especially at potential new or upgraded partnerships with countries and regions, particularly in the Global South.

The [external challenges](#) for the EU are manifold and the issues at stake will dominate the geopolitical landscape in the coming decades: Russia's war of aggression against Ukraine and its implications for Europe's security architecture, the global rules-based order and international law, China's rise as a world power, the [partnership between China and Russia](#), and their confrontation with the US. Moreover, the global threat of climate change is not only leading to the transformation of the European economy and lifestyle but also increasingly [affects the Union's external policy](#) agenda. On top of that, the presidency of Donald Trump has shown that even the US can be disruptive and unpredictable, putting into question the foundation of the transatlantic alliance (NATO, multilateral trading system). The West's determined response to the war in Ukraine has painted over frictions. However, even independently of the outcome of the 2024 US elections, it is not excluded that the US and Europe could [drift further apart](#) in the decades to come, as the most recent transatlantic trade [dispute over subsidies](#) for the green economy has shown. It is in the EU's interest to develop its own [autonomous role](#) on the global stage and capacity to act, in order to pursue its values and objectives while maintaining or even deepening cooperation with key allies, as relevant.

Economic trends indicate that the EU has to face a new global order: by [2050](#), it is estimated that four (China, India, Indonesia and Brazil) of the five largest economies will come from the [Global South](#), a term generally used to identify countries and regions in Latin America, Africa, Asia and Oceania. However, [some experts](#) are of the opinion that this term is misleading and not useful, as it gives the impression that the Global South is a homogenous group of nations.

China identifies itself as a member of the Global South and has positioned itself over the years as its voice and defender: in the United Nations, for example, China provides support to and coordinates positions of the [Group of 77](#), a large group of developing countries. In March this year, China brokered a much-noticed [peace deal](#) between Saudi Arabia and Iran, strengthening its influence in the Middle East. Economically, China has outranked the EU in some regions of the Global South in which Europe traditionally had a dominant role: for example, in Latin America, China has overtaken the EU and is the region's [second-biggest trading partner](#) after the US. In Africa, China is aiming to overtake the EU as [Africa's biggest trading partner](#) by 2030.

All of this underlines how urgent it is for the EU to devise new strategies and step up efforts to engage with key emerging countries from the Global South. The EU can start this endeavour from a

position of strength: it has the third-largest economy in the world and, with 440 million citizens, 23 million businesses and 15 % of global GDP, the EU is the [world's largest trading bloc](#). Moreover, the EU is collectively the world's biggest donor of official development assistance (ODA) in the world, providing over €50 billion a year to help overcome poverty and advance global development.

However, looking at the projections, the EU's development does not look so rosy. On the contrary, demographic and economic indicators point to the EU losing importance on the world stage to the benefit of other players: the EU's share of the world's economy could decline from almost 15 % today to below [10 % by 2050](#). Europe's share of the world population will also decrease: while the population in the EU is predicted to remain stable (around 445 million) in the next three decades, the [world population](#) is expected to grow to 9.7 billion by 2050.

In contrast, Asia will account for [half of global economic output](#) by 2050. By 2040, the [economic weight of the Emerging 7](#) (E7: China, India, Indonesia, Brazil, Russia, Mexico and Turkey) could be double the size of that of the G7 (US, UK, France, Germany, Japan, Canada and Italy). Demographic developments underscore the economic trend: already today, out of 8 billion people, 6.3 billion people live outside of the West, and for the next three decades Asia and Africa will drive the world's population growth. [Africa's population](#), for example, will double by 2050 (although [recent data](#) indicate that Africa's birth rate might be falling, which would impact Africa's total population by 2100). More than [eight in 10 people](#) will live in Asia or Africa by the end of the century; their increasing importance manifests itself, for example, in [Africa's demand](#) for G20 membership and its renewed call for reform of the UN Security Council (UNSC), indicating the continent's quest for a greater say in world affairs.

An indication that the EU will have to deal with an increasingly self-confident Global South in the future is the lack of support from some countries in the Global South for declarations or resolutions condemning Russia's war of aggression against Ukraine. China, India and South Africa were among the 32 countries that abstained in the latest [UN resolution in February 2023](#) calling for an end to the war and demanding that Russia leave Ukrainian territory. Although the EU is the biggest provider of financial assistance globally, voting behaviour at the UN has shown that [African countries](#) in particular, which are by far the largest recipients of EU and US development assistance, abstained and did not join the Western alliance. In fact, the [number of countries](#) actively condemning Russia has fallen from 131 to 122, as some emerging economies have shifted to a neutral position.

Brazil, for example, an important strategic partner of the EU, condemned Russia's invasion of Ukraine and voted in favour of the key UN resolutions, but refuses to apply sanctions against Russia and the delivering of weapons to Ukraine. President Luiz Inácio Lula da Silva [called on the EU and the US](#) to stop sending weapons to Ukraine and, after meeting Chinese President Xi Jinping in Beijing in April 2023, he even declared that the US should [stop encouraging war](#). However, some experts discuss the possibility that a country or a group of countries from the Global South family could play an important role in pushing Ukraine and Russia into [peace negotiations](#). There are already initiatives by African leaders to speak with Ukraine and Russia regarding food security-related issues.

Another example of the increasing political role countries from the Global South play in international fora is last year's [G20 summit in Bali](#): India, Indonesia, Mexico, Argentina and South Africa were decisive in overcoming differences between the traditional geopolitical players and enabling the G20 to produce the [final declaration](#). In addition, members of the BRICS Group hold the current and next G20 presidencies (India (2023), Brazil (2024) and South Africa (2025)), which should mean that the interests of the Global South will continue to come to the fore.

Position of the European Parliament

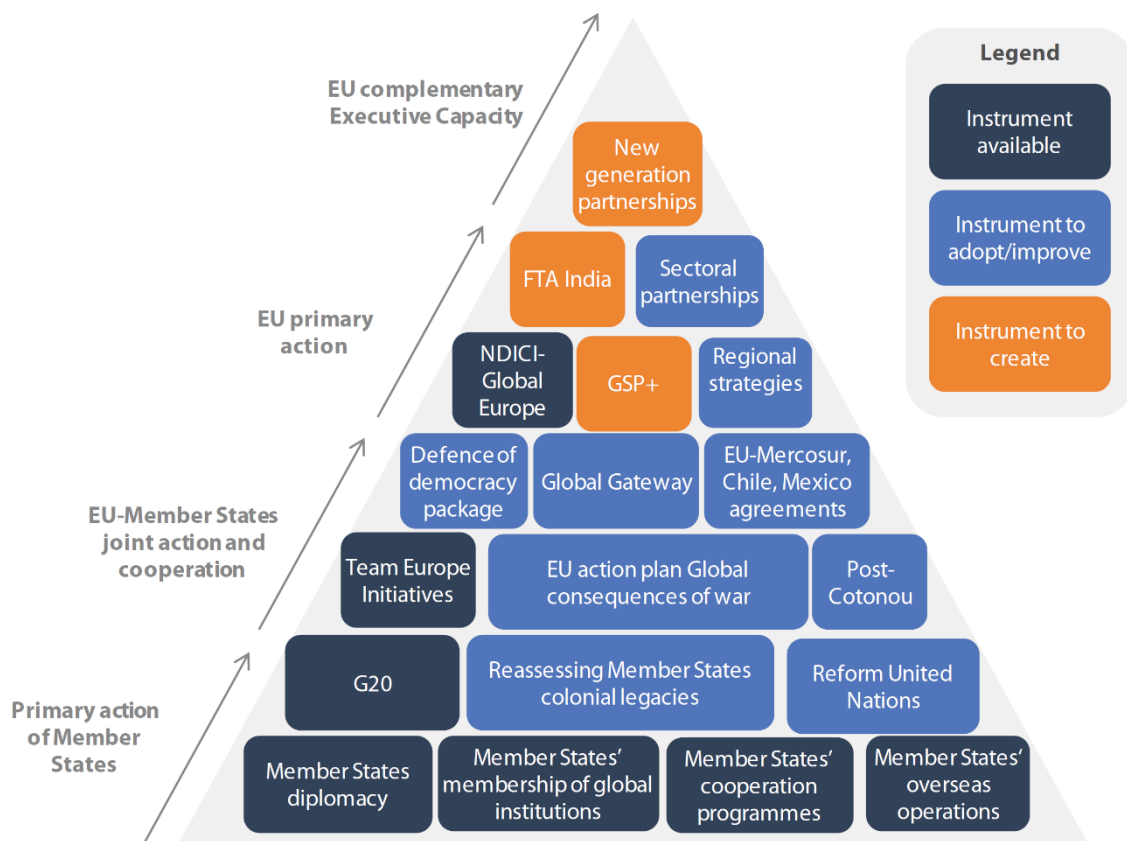
The European Parliament adopted a [resolution](#) on 6 July 2022 on the EU and the defence of multilateralism, in which it pointed out that the EU needs to find new ways to engage with countries from the Global South and to do this on an equal footing with them, as equal partners. In its [resolution](#) of 18 January 2023 on the implementation of the common foreign and security policy (CFSP), Parliament 'underscores that the Russian invasion of Ukraine has highlighted the need for the EU to continue building alliances and understanding among partners and to intensify cooperation with existing like-minded partners around the globe, especially with transatlantic NATO allies, while expanding its partnerships, in particular with countries in the Global South'. On the other hand, Parliament stresses in the same resolution that 'the direct or indirect support of a third country for the illegal positions of Russia, namely by voting with Russia at the UN General Assembly on relevant resolutions or by helping it circumvent EU sanctions, should bring clear, swift and specific consequences in the EU's political and trade relations with that country'.

In the current legislative term, Parliament has placed a strong emphasis on relations with the African continent, notably with the [resolution of 25 March 2021](#) on a new EU-Africa Strategy – a partnership for sustainable and inclusive development; the [resolution of 23 June 2022](#) on the future of EU-Africa trade relations; and the [recommendation of 5 October 2022](#) on the Horn of Africa. In these resolutions, Parliament insists that the future relationship must move away from a donor-recipient dynamic and calls for stronger EU support for Africa's integration into the global economy. Parliament also calls for the EU to support Africa's request to expand the UN Security Council in order to include permanent representation for the continent. In addition, Parliament [supports](#) India's bid for permanent membership of a reformed UN Security Council.

Following the adoption of a joint communication on the EU strategy for cooperation in the Indo-Pacific in September 2021, Parliament adopted two resolutions, [one on 7 June 2022](#) on the EU and the security challenges in the Indo-Pacific and [one on 5 July 2022](#) on the Indo-Pacific strategy in the area of trade and investment.

The European Parliament has an intensive political dialogue with countries in the Global South, through its multilateral assemblies (Eurolat, Parliamentary Assembly for the Union for the Mediterranean, EU-ACP joint parliamentary assembly), its bilateral standing delegations and its frequent Committee missions to Africa, Latin America and Asia. In March 2022, Parliament launched an initiative of global interparliamentary outreach to its partners across the world to discuss Russia's war of aggression against Ukraine and mobilise support for Ukraine.

Figure 34 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

Due to the multitude and heterogeneity of the Global South countries, there is no single coherent EU strategy towards the Global South as such. The EU operates within the broader framework of CFSP, the 2016 [EU global strategy](#), the [2021 multilateralism strategy](#), and the [2022 Strategic Compass](#), but also through tailor-made approaches to regions and countries such as the recent [strategies](#) towards the Horn of Africa and the Sahel. In addition, the EU has a series of [regional and bilateral partnerships](#) in place, such as those with the African Union, the Association of Southeast Asian Nations (ASEAN), the Community of Latin American and Caribbean States (CELAC), South Africa, India and Brazil. Moreover, the EU has concluded political, trade and economic partnership agreements with regions and countries from the Global South, such as the Economic Partnership Agreement with the [Southern African Development Community](#) (SADC) and the [EU-Vietnam Free Trade Agreement](#).

The current Commission and High Representative/Vice-President (HR/VP) have taken this regional approach further, for example with the EU strategy for cooperation in the [Indo-Pacific](#), the joint communication '[Towards a comprehensive strategy with Africa](#)', the establishment of a [strategic partnership with the Association of Southeast Asian Nations](#) and the resumed [negotiations on a free trade agreement](#) with India.

Another region from the Global South with which the EU wants to strengthen ties is Latin America. Almost eight years passed between the previous fully-fledged [EU-CELAC Summit](#) and the one held on 17-18 July 2023 under the Spanish Presidency of the Council of the European Union – which underlines that the EU has neglected the region for too long. Latin America and the EU Member States together represent nearly a third of the UN membership. Latin America is also a region where

an overwhelming majority of states are democracies and which has deep cultural and historical ties with Europe. Therefore, it is a strategic ally in the EU's pursuit of its values and interests in multilateral fora, as the voting behaviour at the UN has shown. For example, the LAC states [voted by a vast majority](#) in favour of the 2022 and 2023 key UN resolutions on Ukraine. Against this background, the HR/VP and the European Commission adopted a [joint communication](#) setting out a new agenda for relations between the EU and Latin America and the Caribbean on 7 June 2023. It aims for a stronger and modernised strategic partnership, to be achieved through reinforced political engagement, boosted trade and investment, and building more sustainable, fair and interconnected societies through Global Gateway investments. The initiative paved the way for the EU-CELAC Summit at Heads of State and Government level on 17-18 July 2023.

One area where the EU has recently taken a global rather than a continental or regional approach is in financial and development assistance. With the [adoption of the NDICI/Global Europe instrument](#) for the Multiannual Financial Framework 2014-2020, the EU pulled together – in a single instrument with global scope – all previous strands of assistance, including the European Development Fund (EDF), which was until then an off-budget instrument. This was reflected in 2019 in the creation of the post of Commissioner for International Partnerships (instead of the previous post for international cooperation and development). The EU has, furthermore, launched the [Global Gateway Initiative](#) (announced in a December 2021 Communication) bringing together the EU and EU Member States with their financial and development institutions and mobilising the private sector to boost sustainable investments in low- and middle-income countries, especially in the areas of green and digital transition, but also health and education; half of the investments of up to €300 billion should be allocated to projects in Africa. The Global Gateway, which has been widely presented as the EU alternative to China's Belt and Road Initiative, is coordinated with similar initiatives by like-minded partners, in particular the G7, as was highlighted at the [Partnership for Global Infrastructure and Investment event](#) at the Hiroshima G7 Summit in May 2023.

The EU is also complementing the regional approach with a global one when addressing the geopolitical consequences of Russia's war of aggression against Ukraine, with the adoption of the [Strategic Compass](#) (the plan of action for strengthening the EU's security and defence policy by 2030) and, in June 2022, of a dedicated [action plan](#), putting EU and EU Member States' resources together to increase the EU's bilateral engagement with key partners in its immediate neighbourhood, Asia, Africa and Latin America and to help them mitigate the most immediate consequences of the war.

Figure 35 – Timeline of the EU's new partnerships in a polarised world



Source: EPRS.

Obstacles to implementation of response

The 'Global South' concept is far from being unproblematic and is challenged by several authors and decision-makers, either because it seems to play into the Russian and Chinese narrative opposing 'the West' to all 'the rest' of the world (see [here](#) from the French and British foreign affairs ministers) or due to its overly simplistic, undifferentiated approach to very diverse countries (see [here](#), for example, Timothy Garton Ash's position). As HR/VP Josep Borrell [put](#) it, 'the use of 'Global South' projects a degree of unity on what is in reality a very diverse group with huge differences in conditions, aspirations and alignments. [...] We have every interest in using language that promotes the search for common ground and avoids bloc-to-bloc thinking.' This makes it conceptually difficult and political sensitive to think of a comprehensive EU approach to these countries and the type of new or upgraded partnership that could be needed.

A concrete example of how complex the shaping of relations with the Global South can be is the EU's attempt to strengthen its relations with [Brazil](#), a member of the G20, BRICS, Mercosur and a key state in Latin America given its territory, population and GDP. The EU has a [longstanding partnership](#) with Brazil based on shared fundamental values and principles, on a strategic partnership and on a number of additional agreements such as a framework cooperation agreement, a science and technology cooperation agreement and the EU-Mercosur framework cooperation agreement. This is one of many reasons why it makes sense for the EU to further strengthen relations with Mercosur and apply the [association agreement](#) for which an 'agreement in principle' was reached (on the trade pillar in 2019 and on the political dialogue and cooperation part in 2018). However, the agreement has met resistance within the EU, in particular because of the deforestation in the Amazon: Member States, national parliaments and also the European Parliament have raised concerns, the latter emphasised in a [resolution](#) of 7 October 2020 that the EU-Mercosur agreement

cannot be ratified as it stands. Since then, the Commission and the EEAS have been working on an [additional instrument](#) to accompany the agreement, aimed at addressing concerns about sustainability and the potential environmental effects of the agreement, notably on deforestation. Brazil's President, Luiz Inácio Lula da Silva, said that he was in favour of the agreement but that he wanted to [renegotiate some areas](#) of the deal in favour of Brazil's industrial development. The reopening of negotiations could be time-consuming and jeopardise the entire agreement. If the deal fails, China would likely be the beneficiary, as the country [stands ready](#) to further deepen its trade relations with Mercosur. Already today, China is the region's top trading partner.

The long-awaited conclusion of the '[Post-Cotonou Agreement](#)' between ACP countries and the EU is also [delayed](#) due to the opposition of some EU Member States – first Hungary and then Poland – to giving their green light to the final text, straining relations with key partners in the South.

Moreover, the mushrooming of sectoral agreements proposed by the EU on top of broader, mostly regional agreements, such as [green partnerships](#), partnerships on [critical raw materials](#), or the [voluntary partnership agreements](#) under the EU's Forest Law Enforcement, Governance and Trade (FLEGT) initiative, makes the EU approach more difficult to grasp and appreciate, especially by the local population concerned.

Another key obstacle to the development of new partnerships in the South is the anti-EU rhetoric fuelled especially by Russia's and China's manipulation of discourse and of information, be it in Asia, Latin America or Africa. EU programmes and offers are often portrayed as neo-colonial and hegemonic, serving EU interests only, and the EU's action in rallying support for Ukraine as a 'double standard' contrasting with an alleged lack of EU engagement in the conflicts of the South.

While [colonial history](#) is an important component in relations between the Global South and the EU and should not be neglected, accusations of post-colonialism are part of a broader strategy of authoritarian regimes to counter EU policies towards the Global South, including its support for democracy.

Policy gaps and pathway proposals

The lack of consensus on the clear condemnation of Russia's war of aggression in Ukraine by a significant number of countries from the Global South and the flourishing aggressive anti-Western rhetoric call for renewed efforts, from the EU side, to understand the positions of these countries and their perception of the EU and its policies, however diverse they are, and to clarify the terms and content of the partnership.

A 'listening and understanding' exercise should take into consideration elements such as the legacy of the past, including colonialism and historical ties, and tackle in a frank way the irritants in the relations between these countries and the EU like the rejection of the [universal character of human rights](#), the slow finalisation of bilateral or regional agreements, accusations linked to so-called '[double standards](#)', or allegations of '[green protectionism](#)'. To achieve this, the EU could:

- review existing fora for political dialogue with authorities and outreach to civil societies in Africa, Asia and Latin America, modernise them or introduce new formats, in particular with young people, where needed, to allow for more interactive and issue-based discussions, address criticism and [embrace a deeper understanding of societal dynamics](#);
- put a stronger focus in the impact assessment of EU legislation on its impact for stakeholders outside the EU, including small producers, and involve the European External Action Service (EEAS) in this exercise. The [Better Regulation Toolbox](#) highlights that 'the assessment of potential impacts of internal EU policies and initiatives on third countries is crucial' and that 'if impacts are significant, a thorough assessment is essential to ensure that the external

dimension of the EU initiative is considered from the very start'. However, this assessment is not yet done systematically, or not to the required extent (see, for example, the [EPRS initial appraisal](#) of the impact assessment accompanying the corporate sustainability due diligence proposal);

- use evidence related to the impact of EU policies and legislation on third countries when discussing upcoming EU programmes under the NDICI-Global Europe and other instruments, in order to accompany the necessary transition/adjustments where appropriate;
- [step up efforts](#) to join forces with countries or organisations from the Global South to reform the multilateral framework and to facilitate their greater inclusion in multilateral fora – for example, to enlarge the G20 to include the African Union as a fully-fledged member.

On the other hand, the EU should promote its positive agenda in different areas (top aid provider, leader in the green and digital transition, etc.) and:

- give more visibility to and clarify the EU offer and concrete actions, including EU assistance and the EU's contribution to peace and security across the world, and counter narratives of double standards. To facilitate this, there could, for each country, be a clear and comprehensive overview of the framework for bilateral engagement between the EU and third countries, including all sectoral partnerships, financial support, CSDP missions, etc.;
- invest more in communication on the ground (including framing of the EU's policies and offer) and public diplomacy in partner countries, and address misrepresentations, manipulation of public opinion and propaganda about EU action; equip relevant EU delegations with the tools to increase public diplomacy activities and to develop their strategic communication capabilities (as highlighted in Parliament's [recommendation of 15 March 2023](#) on the functioning of the EEAS and for a stronger EU in the world). This will require an increased budget for selected EU delegations;
- further develop the [Global Gateway](#) initiative in partnership with the beneficiary countries, focusing on producing [added value in these countries](#) and helping them move up the value chains while achieving joint objectives (such as the green transition);
- beyond communicating on the existing offer, the EU could develop a new generation of [partnerships of equals](#) to be discussed with countries of the Global South, especially democracies, to bring all strands of political, economic, financial and sectoral assistance and cooperation under a single framework, and agree on priorities to be jointly defended in multilateral fora. This could replace the concept of '[EU strategic partners](#)' and factor in the mushrooming sectoral agreements on issues such as [critical raw materials](#) and hydrogen, as well as new challenges such as space, data, biodiversity, etc.;
- this approach could be reflected in an updated [EU global strategy](#), the review of which is [a longstanding request](#) by the European Parliament.

The European Parliament has a key role to play in driving the discussion on these questions and implementing such policy options, either through its distinct parliamentary diplomacy or through its scrutiny, budgetary and legislative role.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Develop a new generation of partnerships of equals to be discussed with countries of the 'Global South', especially democracies	Council/ EEAS/ Commission	Revision of the EU global strategy	Parliament resolution on the implementation of the common foreign and security policy - annual report 2021	
2	Step up efforts to join forces with 'Global South' countries or organisations to reform the multilateral framework and to facilitate their greater inclusion in multilateral fora	Commission/ Council	Engage in discussions on a reform of the UN Security Council, support the African Union's and India's bid for permanent membership of a reformed UN Security Council	Parliament resolutions on a new EU-Africa strategy and EU-India relations	
Proposals submitted by the European Commission/ongoing processes					
3	Trade and association agreements with like-minded partners from the 'Global South' such as Mercosur, Chile, Mexico and India	Commission/ Parliament/ Council	Conclude and ratify envisaged agreements	European Commission's new agenda to strengthen the EU's partnership with Latin America and the Caribbean	
Policy suggestions from think tanks and academia/policy examples from third countries					
4	Reassessing Member States' colonial legacies	Council/ Member States	For example, apologise for crimes and human rights abuses under colonial rule	The EU's promotion of democracy cannot continue to remain silent on colonial crimes, A. Khakee (2022)	

Reinforcing the resilience and long-term coordination of EU internet infrastructure

Stefano De Luca and Tambiama Madiega

The issue(s) in short: The challenges and the existing gaps

A range of events may affect the functioning of internet infrastructure, including unintentional technical failures, cyber-attacks, physical attacks to the core infrastructure, technology dependency creating backdoors for spying activities, and the rise of internet fragmentation (also called 'splinternet').

Resilience against natural disasters and assuring connectivity without disruptions: Global internet connectivity is at risk from climate disasters such as flooding, storms and hurricanes, as these types of extreme weather events are becoming more likely due to [climate change](#). Because of rising sea levels, telecoms conduits in coastal areas might be [surrounded](#) by water in the next 10 years. Unintentional severing of submarine cables linked to [human activities](#) represents another [potential cause](#) of internet disruption. To tackle such unintentional technical failure, global common efforts to fight climate change and to build future-proof connectivity infrastructure should be put in place.

Sophisticated cybersecurity threats by state and non-state actors are on the rise in Europe: According to a recent [report](#), EU countries have seen a [sharp increase](#) in [cyber-attacks](#) in 2023, probably linked to the [conflict](#) in Ukraine; this type of cyber war is targeting critical national infrastructure. There are growing [concerns](#) about links between malicious cyber activities and disinformation, which also affects internet users' trust. There is a [global](#) shortage of skilled cybersecurity professionals to help businesses and organisations defend themselves against cyber-attacks – Europe alone is [estimated](#) to be short of between 260 000 and 500 000 such workers. Improving EU cybersecurity for large-scale attacks, affordability of the more advanced cybersecurity technologies for telecoms infrastructure (e.g. [quantum communication infrastructure](#)) and cyber defence [exercises](#) are key to avoiding internet disruptions.

Protecting key connectivity infrastructure from physical attacks: In January 2022, the submarine cable connecting Norway with the Arctic satellite station was mysteriously [severed](#); in May 2023, NATO's intelligence chief [warned](#) that Russia might sabotage submarine cables to punish Western nations for supporting Ukraine; and in October 2022, Russia [threatened](#) to shoot down Western satellites helping Ukraine. Building a comprehensive strategy for [patrolling](#) strategic submarine cables points with allies, improving the [EU's capability to repair](#) connectivity infrastructure, and creating connectivity [redundancy](#) through the presence of alternative infrastructure (e.g. an EU low-earth-orbit 'LEO' satellite constellation serving as a [back-up](#) to the current European internet) should be further developed to respond to potential challenges.

Limiting dependence on foreign technology in the EU connectivity sector: Most European countries have taken [measures](#) to restrict or prohibit the [use](#) of high-risk vendors to build national 5G infrastructure. However, [positions](#) on banning Chinese equipment (e.g. Huawei and ZTE) in the

roll-out of 5G networks on the grounds of significant intelligence and operational risks [differ](#) among [NATO allies](#) and [EU Member States](#). The future EU satellite system would guarantee [fewer dependencies](#) on third-country infrastructure (e.g. Starlink) and provide [secure](#) telecommunications so that EU information does not fall under foreign privacy and data management laws. Keeping EU data secure is also related, to some extent, to ownership or control of submarine cables and cloud ecosystems. Various reports have [accused](#) China of planning to exploit the construction of submarine cable networks to spy on other countries; the same fear is shared by China, which is [reportedly](#) impeding submarine internet cable projects near its borders. Furthermore, the EU cloud ecosystem is now [dominated](#) by foreign companies, meaning that the EU will have to accept long-lasting foreign dependency and, thus, lasting risks to its strategic autonomy, with potential [concerns](#) for access to EU data. Meanwhile, scrutiny of foreign acquisition of EU strategic assets that might pose a risk to security (EU foreign investment screening mechanism) is [increasing](#), specifically over Chinese investments.

Addressing the risk of internet fragmentation: The vulnerabilities of internet infrastructure increasingly relate to [internet fragmentation or splinternet](#), i.e. the different ways the internet's technical architecture evolves due to technological, commercial and political factors. A number of recent examples show how the global internet is increasingly morphing into different infospheres. The EU has long argued for greater [autonomy](#) in the digital field and the US is also adopting this approach (for instance, a [bill](#) has been introduced recently to prohibit the Chinese-based TikTok app from being downloaded on US devices, given security issues) while China, Russia and India are actively seeking to [develop](#) their own internet, distinctively [different](#) from the rest of the web. China's support for a '[cyber sovereignty](#)' model under which countries should choose their own path of network development and governance model (including the use of technical standards like IPv6) raises many [issues](#) with regard to control of the internet. Furthermore, a recent report [shows](#) a surge of internet shutdowns due to [political factors](#) such as [protests or armed conflicts](#).

Position of the European Parliament

Parliament has repeatedly called for action at EU level to tackle **hybrid threats** and address possible **failures of critical infrastructure**, including communications networks. In its landmark [resolution on the state of EU cyber defence capabilities](#) – adopted in 2021 – Parliament articulated the need for the EU to address cyber threats in an international context. It stressed that the EU is increasingly involved in hybrid conflicts with geopolitical adversaries that destabilise democracies, and called on all Member States and the EU to show leadership during discussions and initiatives under the auspices of the UN and to take a proactive approach to the establishment of an internationally shared regulatory framework for tackling cyber threats. Parliament also [called](#) for increased EU coordination on establishing collective attribution for malicious cyber incidents and urged Member States to implement redundancies into their critical infrastructure systems, such as electricity generation and strategic communications, at all levels. Furthermore, in the context of Russia's aggression against Ukraine, Parliament [highlighted](#) the need for the EU to bolster its own resilience to hybrid attacks and to help improve its allies' resilience capacities against possible Russian attacks in the areas of defence, cybersecurity and strategic communication.

EU lawmakers have endorsed the quest for **technological sovereignty** on many occasions. Parliament [called](#) on the Commission to develop a strategy to reduce Europe's dependency on foreign technology in cybersecurity, particularly towards China. Parliament also [called](#) for the EU to develop effective strategies in digital policy in order to use technological standards and the open internet to support free spaces and restrict oppressive technologies. Furthermore, Parliament [called](#) on the Member States to make sure that public institutions and private companies involved in ensuring the proper functioning of critical infrastructure networks (e.g. telecoms networks) undertake some risk

assessments linked to dependence on external suppliers of hardware and software technologies. In a recent resolution, Parliament [asked](#) the Council and the Commission to develop an ambitious, binding ICT supply chain security framework and to exclude the use of equipment and software from manufacturers based in high-risk countries, particularly China and Russia.

Finally, in 2009 Parliament adopted a key [resolution](#) setting out its view on **internet governance**. It stressed that, to maintain the internet as a global public good, internet governance should be based on a broad, balanced public-private sector model, should avoid attempts by state or supra-national authorities to control the flow of information on the internet, and should rest on a multi-stakeholder process that provides an effective mechanism for promoting global cooperation. In 2015, Parliament [reiterated](#) its commitment to the multi-stakeholder model of internet governance and emphasised the importance of completing the globalisation of the internet's core functions and organisations.

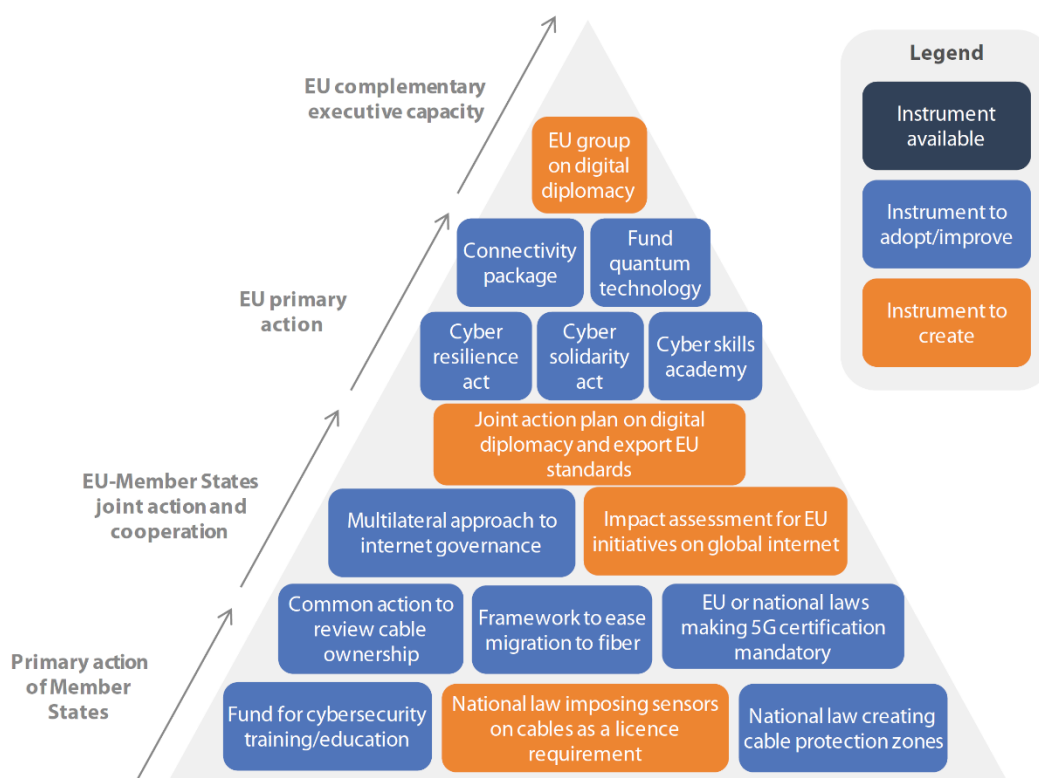
In focus – Quantum communication infrastructure

[Quantum technology](#) is increasingly considered around the [world](#) as an emerging, highly strategic technology that could play an important role in safeguarding critical infrastructure and personal data security.

A 2022 Joint Research Centre [report](#) stressed how deploying [quantum communication infrastructure](#) would strengthen the cybersecurity protection of European telecoms networks as well as the transmission of very sensitive information by using [robust cryptography systems](#).

Among its several goals, [Digital Decade](#), Europe's overarching digital transformation strategy, envisages Europe 'being on the cutting edge of quantum capabilities by 2030'. To achieve this goal, the EU is promoting various [programmes](#), including the deployment of a secure quantum communication [infrastructure](#). Such an infrastructure will include a terrestrial segment that relies on fibre networks and a space segment based on satellites.

Figure 36 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

Achieving more resilient and future-proof connectivity by 2030: With the Path to the Digital Decade [programme](#), the EU [set](#) its Digital Decade [targets](#), including having all EU households covered by a fixed gigabit network (1Gbps) and all populated areas covered by 5G by 2030. The European Electronic Communications Code ([EECC](#)) sets common rules on how electronic communications networks and services are regulated in the EU; the [general aim](#) of the EECC is to promote deployment, access to and take up of 'very-high capacity networks' (VHCN, e.g. fibre and 5G). Fibre networks [seem](#) to be more resilient to natural disasters, and the EU is [striving](#) to be the first climate-neutral continent by 2050. With the Broadband Cost Reduction ([BCRD](#)), the EU lowered entry barriers and costs related to network deployments by setting out harmonised rules on access to the physical infrastructure of all utilities for the purpose of building broadband networks (ducts, poles, masts, etc.). The '[Connectivity Toolbox](#)', a non-binding recommendation agreed by Member States in March 2021, includes 22 best practices to help reduce VHCN network deployment costs. In addition, many funding initiatives are supporting the deployment of broadband networks in rural, remote and other less well-served areas, such as the [Connecting Europe Facility](#) (CEF Digital), post-COVID-19 [recovery funds](#) and [national state aid](#) initiatives. To help achieve the Digital Decade connectivity targets, the Commission proposed a [connectivity package](#) in February 2023 including the [Gigabit Infrastructure Act](#) (GIA), a draft [recommendation](#) to promote gigabit connectivity, and an [exploratory consultation](#) on the future of electronic communications infrastructure.

Reinforcing EU capacities to tackle cyber threats: The EU [cybersecurity strategy](#) aims to ensure a global and open internet with strong guardrails to address the risks to the security and fundamental rights and freedoms of people in Europe. In this context, a directive on measures for a high common level of cybersecurity across the Union ([NIS 2](#)) has been finalised and the [EU Cybersecurity Act](#) has strengthened the role of the EU cybersecurity agency (ENISA) and is promoting a voluntary EU cybersecurity certification scheme for ICT products, services and processes. The EU recently proposed the [EU Cyber Resilience Act](#) (CRA), which introduces mandatory cybersecurity requirements for products with digital elements. The quantum infrastructure initiative ([EuroQCI](#)) will safeguard sensitive data and critical infrastructure by adding a new layer of encryption and security in the field of telecommunications. As far as cyber defence capabilities are concerned, the EU has approved the [Strategic Compass](#), which, among its actions to strengthen EU security and defence policy by 2030, lays out plans to create an [EU hybrid toolbox](#) to coordinate EU and Member State responses to hybrid attacks. The EU also plans to create EU [cyber rapid response teams](#), which would [provide](#) tailored national, civilian and military expertise to support the EU and partner countries in countering hybrid threats. The Commission has recently proposed the [EU Cyber Solidarity Act](#) to reinforce capacities in the EU to detect, prepare for and respond to the growing cybersecurity threats and attacks across the EU. Finally, to answer the EU's cybersecurity workforce needs, the Commission adopted the [Communication on the Cybersecurity Skills Academy](#) in April 2023.

Reducing EU technology dependency in the field of connectivity: As far as 5G technology dependency is concerned, the Commission published the [EU toolbox on 5G cybersecurity](#), in which it outlined a set of non-binding key actions to ensure the security of the networks, such as limiting dependency on a single supplier (multi-vendors strategy) and assessing the risk profile of supplies. In a 2023 [communication](#), the Commission stressed that Chinese vendors Huawei and ZTE represent a materially higher risk than other 5G suppliers. Therefore, Member States' decision to restrict or exclude Huawei and ZTE from 5G networks are justified and compliant with the EU toolbox on 5G cybersecurity, and those suppliers will be progressively phased out from existing connectivity services of the Commission's sites. The new [regulation on the Union secure connectivity programme](#) entered into force in March 2023; building on [EU-funded initiatives](#) for the period 2023-2027, the

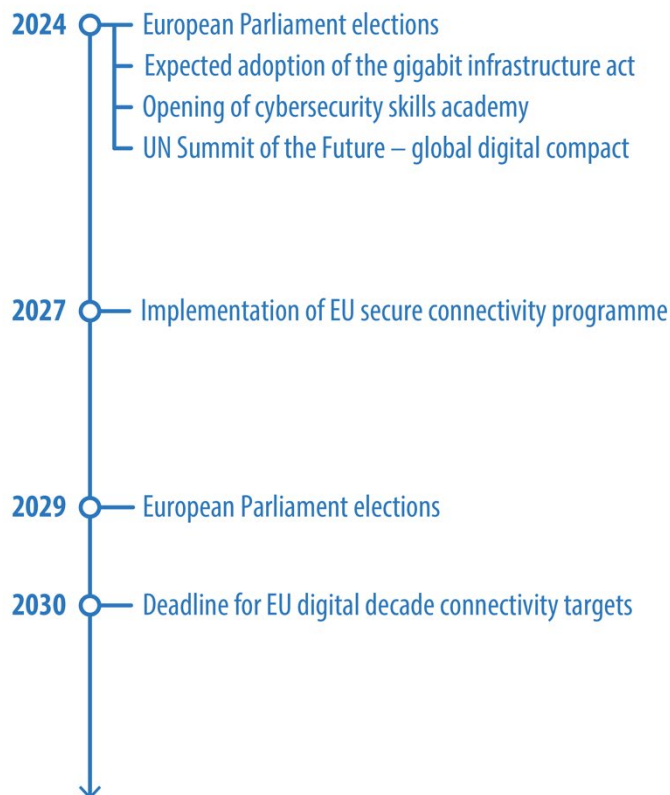
programme will develop an [LEO satellite constellation](#) to secure communication and avoid critical dependencies on non-EU infrastructure. The [Global Gateway strategy](#), launched in 2021, also aims to ensure secure and resilient routes of international communication infrastructure, such as the [BELLA programme](#) for submarine cables; the EU is [planning](#) a Black Sea [submarine cable](#) to reduce [reliance](#) on Russia. Furthermore, in its 2023 [joint communication](#) on an 'enhanced EU maritime security strategy for evolving maritime threats', the EU has identified a number of key future actions, including promoting international cooperation on information exchange, and surveillance of critical maritime infrastructure such as submarine cables; and improving the current EU risk assessments on submarine cables and the risks and threats arising from foreign direct investment (FDI) in maritime infrastructure. [Gaia-X](#) aims to create a federated cloud data infrastructure at European level and ensure a secure environment for the data of citizens, businesses and governments. Finally, the EU has [implemented](#) a [regulation](#) establishing a framework for screening FDI inflows into the EU on [grounds](#) of security or public order. To address the risk of the EU increasingly relying on a non-EU domain name system (DNS) resolver to access a webpage and tackle potential internet disruptions due to cyber/technical incidents, the EU would [support](#) the deployment of European DNS resolver service infrastructure ([DNS4EU](#)) and encourage EU companies, internet service providers and browser vendors to diversify their dependence on foreign DNS resolution services.

Addressing the risk of physical attacks on internet networks: The EU has been taking steps in recent years to better face possible attacks on its communications infrastructure. EU lawmakers adopted the [directive on the resilience of critical entities](#) (CER) in December 2022, which aims to reduce the vulnerabilities and strengthen the physical resilience of critical entities in a range of sectors – including digital infrastructure – that provide vital services on which the livelihoods of EU citizens and the proper functioning of the internal market depend. The CER directive requires Member States to identify critical entities, perform risk assessments and report any disruptions; it also requires them to increase resilience and conduct regular stress tests, including on submarine cables. Finally, in the multilateral context, in February 2023 NATO announced the creation of a [critical undersea infrastructure coordination cell](#) at NATO Headquarters and has [established](#) a new [NATO-EU taskforce on resilience and critical infrastructure protection](#) working on better understanding threats to critical submarine infrastructure and sharing best practices on cooperation and coordination. Furthermore, the EU is promoting international cooperation on information exchange and the surveillance of critical maritime infrastructure, including submarine cables, in accordance with [Council Recommendation 2023/C 20/01](#) on a Union-wide coordinated approach to strengthen the resilience of critical infrastructure.

Addressing the risk of internet fragmentation: The EU has launched or joined a series of new multilateral and bilateral initiatives to promote an open and global internet. At multilateral level, in the context of the [Global Gateway strategy](#), the EU [committed](#) to funding the deployment of third countries' infrastructures with standards and protocols that support an open, plural and secure internet in line with EU policies. The Commission also works at [international level](#) with other global players to shape the development of the internet and means of telecommunication through the [global digital compact](#) concept developed under the UN. In this respect, the EU [proposes](#) to promote a set of commitments to avoid internet fragmentation. Furthermore, the Group of Seven (G7), to which the EU belongs, [committed](#) to cooperating on making visible and tackling the tactics of digital authoritarianism, and to strengthening cooperation in addressing practices such as internet shutdowns. At bilateral level, in the context of the [Transatlantic Trade and Technology Council](#) (TTC), the EU and the US have pledged to advance the principles of the [Declaration for the Future of the Internet](#), including fostering a global internet, and oppose the increasingly-used practice of government-imposed internet shutdowns. The EU and the US have created a multi-stakeholder group of technical experts [tasked](#) with documenting internet shutdowns and their

effects on society; the group will also encourage compatible standards and regulations based on shared democratic values. This approach is expected to [reduce](#) the gap between the regulation of platforms that affect the entire internet ecosystem and foster technical and commercial internet fragmentation.

Figure 37 – Timeline of selected measures to reinforce the resilience and long-term coordination of EU internet infrastructures



Source: EPRS.

Obstacles to implementation of response

Addressing the investment gap for future-proof and more resilient network infrastructure deployment is key to meeting the Digital Decade 2030 targets and would [require](#) large-scale EU public funding. Reports commissioned by large telecom operators [estimated](#) that an additional €150 billion of investment is needed for full 5G rollout, while another €150 billion is required to upgrade existing fixed infrastructure and roll out fibre networks to gigabit speeds in Europe. According to a [study](#) prepared for the Commission, the latest estimates quantify the investment still needed in network infrastructure to reach the 2030 targets at around €174 billion.

Lack of collective situational awareness of cyber threats through a systematic and comprehensive information sharing system and a common approach to network equipment deployment is an [obstacle](#) for the EU, as the security of networks cuts across national and EU competences and affects national security. For instance, the recent [report](#) on Member States' progress in implementing the EU toolbox on 5G cybersecurity stressed how there are still differences in the state of implementation of specific measures between Member States. Furthermore, the report recommended that Member States should implement the non-binding toolbox without delay, considering the importance of the connectivity infrastructure for the digital economy and dependence of many critical services on 5G networks. The Commission also requested ENISA to

develop a candidate European cybersecurity certification scheme for 5G networks ([EU 5G scheme](#)) under the Cybersecurity Act. However, such schemes are [voluntary](#) – unless otherwise specified by EU or Member State regulations – and ENISA will have to encourage and monitor the [adoption](#) of shared standards under the Cybersecurity Act.

A challenge to the EU's critical infrastructure protection efforts is that Member States are reluctant to cooperate. For instance, some Member States have [expressed](#) reluctance to share information about their critical infrastructure – particularly submarine cables – and push back on involving the EU in collaborating on this matter. With regard to the investment promises of the Global Gateway strategy, there are [uncertainties](#) over whether **sufficient funding** can be mobilised and it remains to be seen if the approach of bringing together the EU, financial institutions and Member States will deliver.

The EU foreign investment screening mechanism (FDI legal framework) falls short of delegating any veto or enforcement rights to the EU. This means that Member States have the final word on FDI controls, on top of which the [absence](#) of screening mechanisms in some Member States diminishes the effectiveness of the EU framework. The Commission is also in the process of [evaluating](#) the current framework and will propose its revision before the end of 2023.

The EU **lacks a coherent approach to the internet fragmentation phenomenon.** While committing to promote the development of an open internet, the EU has increasingly passed measures to better control its digital environment. Achieving '[technological autonomy](#)' or '[digital sovereignty](#)' – for instance through the development of a sovereign [EU cloud](#), which could imply [data localisation](#) in the EU, or platform regulation like the [Digital Services Act](#) that imposes more stringent rules on internet intermediaries in the EU than in other jurisdictions – have been [seen](#) as fostering fragmentation. The EU lacks an articulated and coherent approach to address the technological, commercial and political factors that contribute to internet fragmentation, while a number of digital files (e.g. DSA, DMA, AI Act, Data Act) – which are currently being implemented or discussed by EU lawmakers – have direct [implications](#) for the openness and unity of the internet.

Policy gaps and pathway proposals

Supporting technology migration to fibre networks: There are voices [arguing](#) that one way to mitigate disruption of the network linked to natural disasters such as weather events would be to replace copper wiring with more resilient optical fibre cables. The authors of a 2020 study [flagged](#) how modern fibre networks are 70-80% more reliable than copper ones and require less operational maintenance. The study suggested that Member States and the EU might take some action to ease the migration from copper to fibre networks, such as reducing the timeframe for copper decommissioning or intervening on wholesale copper prices. Specifically, the EU could update the relevant EU texts to speed-up technology migration (e.g. EECC, [2010 NGA Recommendation](#), [2013 Costing and Methodologies Recommendation](#)).

Investing in cyber skills capacity: The EU [should](#) invest in building the capacity to improve the attribution of cyberattacks and to address incidents. Ensuring appropriate funding for training skilled cybersecurity professionals needed by the sector is key to protecting Europe's critical infrastructure.

Fostering quantum-based cybersecurity: The European Joint Research Centre report of 2022 [stressed](#) how the EU's investment and research in developing quantum communication infrastructure can play a role in protecting European terrestrial fibre and satellite infrastructure from cyberattacks.

Physical protection of submarine cables: Various authors have presented ideas on how to protect submarine internet cables in Europe. The creation of [cable protection zones](#) (e.g. banning certain types of anchoring and fishing) in critical areas within national waters would help to avoid unintentional severing of cables by following the examples set in Australia and New Zealand. In this respect, a European Parliament [analysis](#) suggested that Parliament could invite maritime authorities to suggest solutions. A 2022 [policy brief](#) by the Atlantic Centre considered investing in submarine cables' [sensors/detection systems](#) on critical points to be a useful tool to detect potential physical threats; Member States should [envisage](#) the use of such detection systems as part of licence requirements for landing submarine cables and the EU could sponsor research in this field and make recommendations on the allocation of licences. Finally, following the [example](#) of the Australian government, which appears to have concluded that ownership of certain submarine cables is of strategic concern, a European Commission [study](#) recommends that the EU create a comprehensive and common approach to support EU-based companies in the development and construction of [new](#) secure submarine cable routes. A European [review](#) of submarine cable [ownership](#) and [risk assessment](#) for future submarine cable projects might help in making potential strategic decisions.

Protecting EU strategic infrastructures from cyber threats: The European Court of Auditors (ECA) is [worried](#) about divergent policies on 5G suppliers among Member States and has recommended that the Commission assess the potential impact of a Member State building its 5G networks using equipment from a vendor considered to be high risk in another Member State. According to the ECA, such a scenario could impact cross-border security and even the functioning of the EU single market itself. The authors [suggested](#) taking a more general vendor-agnostic approach when assessing security of network infrastructure or components (e.g. 5G or submarine cable systems), by implementing technical testing facilities at national level, because poor quality software might also be a [greater risk](#) for cyber resilience than 'backdoors'. In this respect, [establishing](#) a compulsory EU-wide certification scheme (and not merely a voluntary one, as is the case today) would be a step forward in ensuring a truly safe environment, especially for 5G networks, and could help establish the EU as a standard-setter in the field of cybersecurity. Similarly, the Commission could take [further initiatives](#) to support the comprehensive implementation of the non-binding 5G toolbox in case of [lack of action](#) by Member States.

Developing an EU strategy and tools to avoid internet fragmentation: While the 'Brussels effect' (i.e. the ability of the EU to export its legal and commercial standards at the global level) could pave the way for convergence of legislation across the world (as for the GDPR), the EU must be complemented by a strategy to build international alliances, especially in areas where Europe has dependencies and gaps. Against this background, a European Parliament study [recommends](#) setting up an EU interinstitutional working group on digital diplomacy including the Parliament, the relevant Commission services (i.e. the Service for Foreign Policy Instruments (FPI), as well as DG INTPA, DG NEAR and DG CNECT) and the European External Action Service (EEAS) to develop a joint action plan on digital diplomacy. The working group would work on the international dimension of digital policy, both to export EU standards and principles and to build alliances around the European model. Furthermore, there should be an impact assessment mechanism to assess if the EU initiatives that may act as factors of divergence are proportionate. This approach would allow the EU to develop a consistent approach towards internet fragmentation.

Supporting a multilateral approach to internet governance: Tackling internet fragmentation will require the EU to strengthen its [engagement](#) at multilateral level. Some academics have [called](#) for establishing clear norms regarding prohibitions against internet shutdowns and long-term internet controls and creating a multilateral entity responsible for codifying and enforcing this norm. Others [argue](#) that a co-regulatory approach to internet platform governance would help to align different legal systems and societal norms. The UN has outlined possible [solutions](#) to reinforce

the multi-stakeholder governance of the internet and address the risks of internet fragmentation that will be discussed in the 2024 [Summit of the Future](#). Accordingly, it has been proposed that nations commit to avoiding blanket internet shutdowns, take only proportionate, non-discriminatory and targeted measures to control internet content in accordance with international human rights law, and refrain from actions that would disrupt, damage or destroy critical infrastructure that provides services across borders and underpins the general availability and integrity of the internet. In the same way, the different internet governance institutions and initiatives (e.g. ICANN, the Internet Society, the UN) should [focus](#) on building norms and principles that can unify the evolving distributed internet governance system. Against this background, the EU could build alliances (multilateral or bilateral) to foster the adoption of international communication standards in line with its principles.

Policy gaps and pathway proposals

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Internet governance	Commission/ Parliament/ Council	Foster the multi-stakeholder model of internet governance	EP Resolution on the mandate of the Internet Governance Forum	
2	Technological sovereignty	Commission/ Parliament/ Council	Develop an ambitious, binding ICT supply chain security framework	EP Resolution on foreign interference in all democratic processes in the European Union	
Proposals submitted by the European Commission/ongoing processes					
3	Connectivity package	Commission/ Parliament/ Council/ BEREC	Gigabit Infrastructure Act reviewing the Broadband Cost Reduction Directive Gigabit recommendation replacing the Next generation access recommendation and the Non-discrimination and costing methodology recommendation Consultation on the future of the telecoms sector	EU's new initiatives for the transformation of the connectivity sector in the EU	
4	Cyber Resilience Act	Commission/ Parliament/ Council	Reduce cyber incidents and complement NIS2 Directive with horizontal cybersecurity rules for products with digital elements	COM(2022) 454	
5	Cyber Solidarity Act	Commission/ Parliament/ Council	Reinforce capacities in the EU to detect, prepare for and respond to the growing cybersecurity threats and attacks across the EU	COM(2023) 209	
6	Cybersecurity Skills Academy	Commission/ ENISA/ Member States	Bridge the digital cybersecurity skills gap in the EU through training and funding opportunities	COM(2023) 207	
7	Communication on implementation of the 5G cybersecurity toolbox	Commission/ Member States	Restrict or exclude certain foreign suppliers from providing 5G equipment in the Member States; exclude Huawei and ZTE equipment from Commission's corporate communications and block such firms from receiving EU research funds	C(2023) 4049	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
8	Joint communication on EU maritime security strategy	Commission/ Parliament/ Council/ Member States	Cooperation on surveillance and improvement in risk assessment on submarine cables	JOIN(2023) 8	
Policy suggestions from think tanks and academia/policy examples from third countries					
9	Support migration to more resilient fibre networks	Commission/ Parliament/ Council/ BEREC/ Member States	Update and clarify regulations concerning copper decommissioning in the context of the transposition and application of EU 'migration from legacy infrastructure' framework	WIK Consult study on copper switch-off (2020)	
10	Increase investment in cyber skills training	Commission/ Parliament/ Member States	Ensure appropriate funding for training skilled cybersecurity professionals	EP study on cybersecurity in the EU (2017)	
11	Boost funds for quantum technology	Commission/ Parliament/ Council	Granting additional funding for quantum technology	JRC study on secure quantum communications infrastructure for Europe (2022)	
12	Support the creation of cable protection zones	Parliament/ Member States	Invite EU and national maritime bodies to integrate cable protection into marine spatial planning and other environmental protection initiatives	EP study on security threats on submarine cables (2022)	
13	Sponsor the inclusion of cable sensors as part of licence requirements	Member States	Impose sensors on existing licensing arrangements for landing cables or create a new legal framework	CERRE study on global governance for the digital ecosystems (2022)	
14	Review cable ownership and risk assessment for future projects	Commission/ Member States	Create a comprehensive and common EU approach for new secure cable routes	EC study to monitor connectivity (2022)	
15	Make certification schemes mandatory for 5G security	Commission/ Member States	Impose specific cybersecurity requirements and make the certification thereof mandatory for 5G security	German institute for international and security affairs working paper (2019)	
16	Develop an EU strategy and tools to avoid internet fragmentation	Commission/ Parliament/ Council	Set up an EU inter-institutional working group on digital diplomacy Joint action plan on digital diplomacy Export EU standards and principles and build alliances around the European model	EP study recommendations on Europe's Digital Decade and Autonomy (2021)	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
17			Set up an impact assessment mechanism to mitigate the impact of EU initiatives on the global internet		
	Support a multilateral approach to internet governance	Commission/ Member States	Foster the multi-stakeholder model of internet governance Adopt international norms and principles to ensure an open internet	United Nations policy brief on a global digital compact (2023) Internet Governance Forum Policy Network on Internet Fragmentation (2022)	

Responding to the instrumentalisation of migration

Costica Dumbrava

The issue(s) in short: The challenge and the existing gaps

In 2021, the attempts by the Belarusian government to destabilise the EU by encouraging irregular migrants to cross into the EU triggered a prompt policy response to tackle the risk of instrumentalisation of irregular migration at the EU's external borders. Migrant instrumentalisation affects the EU's and Member States' capacity to protect external borders and creates humanitarian crises by trapping irregular migrants between borders. Although this is not a new phenomenon, such situations might multiply and broaden in the future, given the current international context of conflict and hostility, rising migration, and hardening of borders. The EU and its Member States have adopted a series of measures to address migrant instrumentalisation, which include border control measures, new legislation, sanctions, and diplomatic and humanitarian actions. A more comprehensive toolbox is currently under development, but its effectiveness is yet to be tested, including how it contributes to the protection of the EU's borders, ensures the protection of fundamental rights (such as the principle of *non-refoulement*), and addresses the root causes of migrant instrumentalisation.

Position of the European Parliament

The [European Parliament](#) has strongly criticised the Belarusian government for its failure to respect human rights, including for its persecution of political opposition, attacks on media freedom and civil society, and flawed parliamentary elections. In its June 2021 [resolution](#) on systematic repression in Belarus and its consequences for European security, the Parliament expressed 'concern regarding the increase in irregular migration from Belarus into the EU and about the potential involvement of Belarusian authorities in this phenomenon', and called for the Member States and EU institutions 'to follow developments in these areas and take the appropriate measures'. During a [debate](#) in November 2021 on the conclusions of the European Council, MEPs expressed different views on the nature of the crisis in Belarus, with some considering it a migration crisis and a hybrid attack on the EU, and others seeing it rather as a humanitarian crisis.

In its February 2022 [resolution](#) on the implementation of the common security and defence policy, the Parliament considered 'the instrumentalisation of migration flows through the EU's eastern external borders coupled with disinformation campaigns to be a form of combined hybrid warfare that aims to intimidate and destabilise the EU'. It called on the Union 'to develop relevant legislation providing necessary safeguards to effectively react and respond to the instrumentalisation of migration for political purposes by third countries, to ensure the effective protection of the EU's external borders and the protection of human rights and human dignity'. The Parliament also called on the Union and the Member States 'to improve their capabilities to identify hybrid threats'.

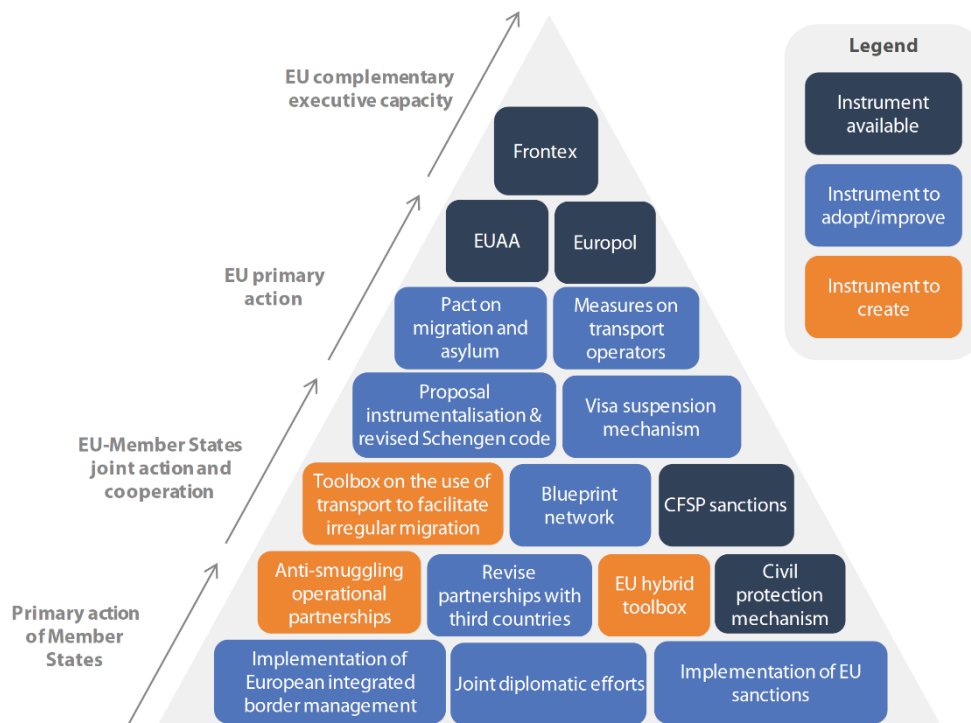
In focus: EU agencies helping to tackle instrumentalisation of migration

The European Border and Coast Guard Agency (Frontex) supports EU Member States and Schengen-associated countries in the management of external borders. The agency is tasked with [key roles](#) in monitoring migratory flows, managing the European Border Surveillance System (EUROSUR) to ensure situational awareness and effective information exchange, and preparing risk analyses with a view to developing early warning mechanisms about the situation at the external borders. The agency can deploy standing corps in the framework of border management teams, migration management support teams and return teams. It can assist a Member State faced with a situation of specific and disproportionate challenges by deploying rapid border intervention teams. Between July and November 2021, Frontex deployed a [rapid border intervention in Lithuania](#) comprising 384 standing corps and 28 interpreters, as well as technical equipment. According to the [Commission](#), as of November 2021, seven Frontex officers were deployed at the Latvian border with Belarus.

The **European Union Asylum Agency (EUAA)** assists Member States in implementing the Common European Asylum System (CEAS). Its reinforced mandate ([Regulation \(EU\) 2021/2303](#)), which entered into force in January 2022, allows the agency to quickly deploy asylum support teams to assist Member States with operational and technical measures, in particular where asylum and reception systems are subject to disproportionate pressure. In 2021, EUAA provided immediate [support to the Lithuanian](#) asylum and reception authorities through the rapid deployment of asylum support teams and the provision of interpretation services. The agency also deployed 36 interpreters to Latvia to help with the implementation of asylum and reception procedures.

The **EU Agency for Law Enforcement Cooperation (Europol)** supports Member States' law enforcement authorities and facilitates cooperation to prevent and combat serious and organised crime. Europol's [European Migrant Smuggling Centre \(EMSC\)](#) proactively supports EU Member States in dismantling criminal networks involved in organised migrant smuggling. In February 2022, Europol set up the [Operational Taskforce Flow \(OTF\)](#) to support national authorities in combating the increased migrant-smuggling activities across the EU-Belarus border, which led to dozens of arrests and asset seizures. Europol also coordinates [referral actions](#) targeting media accounts facilitating the illegal immigration from Belarus to Europe.

Figure 38 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

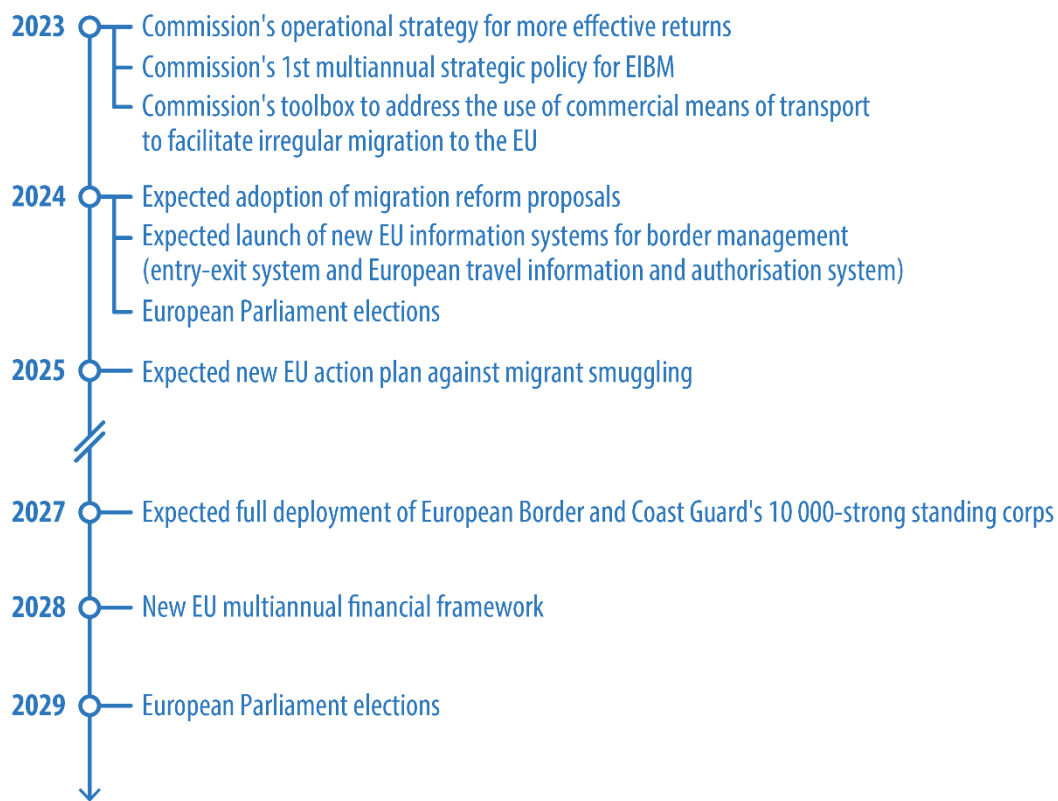
At the [European Council](#) meeting in June 2021, the EU leaders condemned all attempts by third countries to instrumentalise migrants for political purposes. In response to Belarus' [hybrid attack](#) against several Member States, the EU expanded its common foreign and security policy (CFSP) [sanctions](#) against Belarus. It imposed, in several rounds, individual restrictions (entry bans and asset freezes) on persons linked to the instrumentalisation campaigns, banned Belarusian carriers from entering EU airspace and accessing EU airports, and imposed targeted restrictions on companies, tour operators and hotels that have organised or facilitated irregular migration from Belarus into the EU. The EU offered immediate support to the affected Member States, including through the [Union Civil Protection Mechanism](#) and the involvement of EU agencies (Frontex, EUAA, Europol), and mobilised additional funds to assist humanitarian agencies on the ground. The new EU migration preparedness and crisis management network ([Blueprint network](#)) provided situational awareness and ensured a coordinated operational response. As of January 2022, the Operational Coordination Mechanism for the External Dimension of Migration ([MOCADDEM](#)) has been used in the Council to coordinate and monitor the implementation of the EU's external migration policy. The European External Action Service (EEAS) also stepped up its work to counter [false and misleading information](#) online, focusing on where migrants exchange information and where Belarus and migrant smugglers may stimulate demand for irregular migration. In November 2021, the EU partially suspended the [EU-Belarus visa facilitation agreement](#).

In December 2021, the Commission presented a [proposal](#) for a regulation addressing situations of instrumentalisation in the field of migration and asylum – allowing affected Member States to derogate from common rules on asylum and return when confronted with situations of instrumentalisation of migration. Special provisions on the instrumentalisation of migration (including a definition thereof) were included in a [proposal](#) to revise the Schengen Borders Code (SBC), which will also allow Member States to take more restrictive border control measures when confronted with such situations. The Commission also put forward a [proposal](#) to prevent and restrict the activities of transport operators that engage in or facilitate smuggling or trafficking of people into the EU, as well as a [proposal](#) for a Council decision on provisional emergency measures for the benefit of Latvia, Lithuania and Poland (based on Article 78(3) TFEU on [provisional measures](#) in the event of a 'sudden increase of arrivals of third-country nationals).

These initiatives complement pre-existing measures aiming to strengthen the management of the EU's external borders, including the creation of the [European Border and Coast Guard Agency](#) (EBCGA/renewed Frontex), the establishment of [European integrated border management](#), the expansion of the EU's architecture of [information systems for border management and security](#), and the launch of a new [Schengen governance model](#). Instrumentalisation measures also fit into a more comprehensive effort to reform the EU migration and asylum system, embodied in the 2020 [pact on migration and asylum](#). The pact includes a [proposal](#) to establish a procedure for screening third-country nationals apprehended crossing the external borders irregularly and a [proposal](#) for a regulation addressing situations of crisis and force majeure in the field of migration and asylum.

Concrete measures to counter instrumentalisation are also provided in the EU's 2021 [renewed action plan against migrant smuggling \(2021-2025\)](#). The Commission's 2023 [operational strategy for more effective returns](#) also highlighted the importance of coordination at EU level and the use of Frontex's support on returns in the context of the instrumentalisation of irregular migration by the Belarusian regime. The Commission also proposed an [EU police cooperation code](#) to enhance law enforcement cooperation across Member States and give EU police officers more modern tools for information exchange.

Figure 39 – Timeline of responses to the instrumentalisation of migration



Source: EPRS.

Obstacles to implementation of response

Prompt measures by the affected Member States and the EU to counter the instrumentalisation of irregular migration by Belarus resulted in a significant [decrease](#) in irregular migration along the eastern land border), although the humanitarian [crisis](#) is not over. In the meantime, plans to set up a more comprehensive EU approach to tackle instrumentalisation of irregular migration has not advanced much. So far, [none of the relevant proposals](#) put forward by the Commission reached the inter-institutional negotiation phase in the legislative process. In the Council, the Member States could not agree on the instrumentalisation proposal (a partial general [approach](#) was rejected in December 2022). The provisions on instrumentalisation included in the proposal revising the SBC have also been contested in the [Parliament](#).

Stakeholders have expressed concerns about creating a special legal regime for situations of instrumentalisation of irregular migration. First of all, it is argued that the normative [definition of instrumentalisation](#) of migration is too broad and unclear from a legal perspective. According to another [view](#), there is a risk that the narrative of instrumentalisation is used to 'normalise' the use of detention and accelerated border procedures as standard migration management tools. By reducing legal safeguards and allowing for differentiated implementation of EU rules, the proposal may undermine the EU asylum system and EU law as a whole. The proposal may also be [misguided](#), as it seems to punish the victims of instrumentalisation, and [dehumanise](#) them, instead of taking aim at third-country governments trying to destabilise the EU.

Disagreements on measures to counter instrumentalisation tie in with slow progress on the reform of the EU migration and asylum rules. Nevertheless, a [breakthrough agreement](#) in the Council in

June 2023 on two key proposals is set to unblock the legislative process, potentially leading to the finalisation of the reform by spring 2024 (in line with a previous [commitment](#) by the co-legislators).

The Belarus crises provided an opportunity for the EU and the Member States to step up coordination and test the existing crisis response mechanisms (such as the new Blueprint network). Despite [positive developments](#), the tendency to multiply crisis response mechanisms with each crisis may lead to duplication and further fragmentation. Further delays in the implementation of EU border management policies, including the deployment of [new information systems](#) and in the implementation of information exchange within the European border surveillance framework, may reduce EU and Member State capacity to anticipate and respond effectively to crisis.

Policy gaps and pathway proposals

In its 2022 [Strategic Compass](#) for stronger EU security and defence, the Council identified the instrumentalisation of irregular migration as one of the threats to European security and committed to substantially enhancing the EU's resilience and ability to counter such hybrid threats. The Compass envisages the creation of an **EU hybrid toolbox** providing 'a framework for a coordinated response to hybrid campaigns, including situations of instrumentalisation of migration'.

In June 2023, the Commission unveiled a [toolbox](#) to **address the use of commercial means of transport to facilitate irregular migration** to the EU. This includes the possibility to suspend or revoke the operating licence of an EU air carrier and the use of CFSP restrictive measures to target relevant transport operators facilitating irregular migration to the EU, improve situational awareness through reinforcing the Blueprint network and enhanced internal cooperation and information exchange, and engage with transport operators and authorities in third countries, especially in the aviation sector (such as by posting liaison officers at key airports).

Developing comprehensive, balanced, tailor-made and mutually beneficial migration partnerships with third countries is a key dimension of the pact on migration and asylum and is also key to addressing instrumentalisation of migration. This was proven during the Belarus crisis, when joint outreach efforts led to positive reactions in countries of origin and transit, such as the temporary suspension of flights from Iraq to Minsk. In its 2021 renewed EU action plan against migrant smuggling, the Commission proposed establishing '**tailor-made Anti-Smuggling Operational Partnerships** based on continuous exchange and mutually beneficial cooperation between the EU and the partner countries', which would also include dialogue and coordinated engagement on state-led instrumentalisation of migration. The Commission also suggested the use of **restrictive measures** under the [EU global human rights sanctions regime](#) to target individuals, entities and bodies participating in state-led instrumentalisation schemes, and to take **measures 'in the area of visa, trade, development, financial assistance and others'**. In May 2023, the [Commission](#) announced that it is preparing a comprehensive report on the EU's visa-free regimes with a view to improving the **visa suspension mechanism**, in order to address newly emerging situations in which the visa-free regime could be abused and result in irregular migration or security risks for the EU.

Several papers provide further suggestions on how to improve the EU's approach to the instrumentalisation of irregular migration. At operational level, a [paper](#) by the European Policy Centre argues that the EU needs to further **improve its migration crisis response** by pooling and streamlining relevant information and data on potential migration crises (and designate a 'crisis hub'), strengthening intra-EU collaboration, and forming and maintaining international alliances. While acknowledging issues with the accountability framework regarding the **operation of EU agencies**, another [paper](#) argues that timely interventions by these agencies could help the Member States to manage migration without activating the problematic derogations provided in the

instrumentalisation proposal. According to a [paper](#) by the Jacques Delors Centre, the EU and its Member States should **revisit their approach to the instrumentalisation** of migration by focusing on identifying their strategic objectives (avoid stepping into third countries' 'hypocrisy trap'), revise existing partnerships with third countries to provide more incentive for cooperation (expand legal migration pathways), and avoid a security narrative that frames the instrumentalisation of migration as a hybrid security threat. Another [paper](#), by the Clingendael Institute, argues that the EU needs to take a **geopolitical perspective on migration** and focus on developing sustainable migration partnerships with third countries based on a common interest in controlled migration.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Legislation with necessary safeguards	Commission/ Council/ Parliament	Legislation to address instrumentalisation of migration, to protect external borders and safeguard human rights and human dignity	Resolution P9_TA(2022)0040	
2	Enhanced capabilities to identify hybrid threats	Commission/ Council/ Member States	New measures to improve their capabilities to identify hybrid threats	Resolution P9_TA(2022)0040	
Proposals submitted by the European Commission and Council/ongoing processes					
3	Instrumentalisation in the field of migration and asylum	Commission/ Parliament/ Council	Establish a new mechanism allowing the Member States to derogate from common rules on asylum and return when confronted with situations of instrumentalisation of irregular migration	Proposal COM/2021/890	
4	Revision of Schengen Borders Code	Commission/ Parliament/ Council	Define situations of instrumentalisation of irregular migration and allow Member States to take more restrictive border control measures in such situations	Proposal COM/2021/891	
5	Measures against transport operators involved in smuggling or trafficking of people	Commission/ Parliament/ Council	Prevent and restrict the activities of transport operators that engage in or facilitate smuggling or trafficking of people into the EU	Proposal COM/2021/753	
6	Border screening (Migration Pact)	Commission/ Parliament/ Council	Establish a new procedure to identify and check irregular migrants at external borders	Proposal COM/2020/612	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
7	Crisis and force majeure in the field of migration and asylum (Migration Pact)	Commission/ Parliament/ Council	Establish a mechanism to provide for temporary and extraordinary measures in situations of crisis or force majeure in the field of migration and asylum	Proposal COM/2020/613	
8	Toolbox to address the use of commercial means of transport to facilitate irregular migration to the EU	Commission/ EEAS/ EU agencies/ Member States	Measures to target transport operators facilitating irregular migration, improve situational awareness, and engage with transport operators and authorities in third countries	Commission's Toolbox	
9	Anti-Smuggling Operational Partnerships	Commission/ Parliament/ Council/ Member States	Establish tailored-made Anti-Smuggling Operational Partnerships based on mutually beneficial cooperation with partner countries	Commission's Action plan against migrant smuggling (2021-2025)	
10	Effective returns	Commission/ Council/ Member States/ Frontex	Increase effectiveness of returns	Commission's operational strategy for more effective returns	
11	Revision of EU visa suspension mechanism	Commission/ Parliament/ Council	Revision of EU's visa suspension mechanism to address new situations in which the visa-free regime could be abused and result in irregular migration or security risks for the EU	Commission Communication COM(2023) 297	
12	EU police cooperation code	Commission/ Parliament/ Council/ Member States	Enhance law enforcement cooperation across Member States and give police officers more modern tools for information exchange	EU police cooperation code	
13	EU hybrid toolbox	Council/ Commission/ Member States	Establish a framework for a coordinated response to hybrid campaigns	Council's Strategic Compass	
14	EU global human rights sanctions	Council/ Commission/ Member States	Use restrictive measures under the EU global human rights sanctions regime	Commission's action plan against migrant smuggling (2021-2025)	
Policy suggestions from think tanks and academia/policy examples from third countries					
15	Improve the EU migration crisis response	Commission/ Parliament/ Council/ Member States	Pool and streamline information on potential migration crises (through a dedicated 'crisis hub'), strengthen intra-EU collaboration, and develop international alliances	H. Hahn, EPC paper , 2023	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
16	Operational support by EU agencies	EU agencies	Timely interventions by EU agencies could help the Member States deal with instrumentalisation of irregular migration without the need for specific legislation	M. Forti, EJIL , 2022	
17	Revise partnerships with third countries	Commission/ Parliament/ Council/ Member States	Provide more incentives for cooperation (expand legal migration pathways), and make the use of coercive migration diplomacy less attractive	L. Rasche, Jacques Delors Centre , 2022	
18	Take a geopolitical perspective on migration	Commission/ Parliament/ Council/ Member States	Take a geopolitical perspective on migration by developing sustainable migration partnerships with third countries focused on a common interest in controlled migration	M. Ho and M. Wijnkoop, Clingendael report , 2022	

Securing energy supply in Europe

Agnieszka Widuto

The issue(s) in short: The challenge and the existing gaps

The security of energy supply has come to the top of EU agenda, following Russia's aggression against Ukraine and the ensuing energy crisis. The EU has a relatively high dependency on energy imports (57.5% in 2020) and all EU Member States are net energy importers. In 2021, Russia was the EU's largest energy supplier, accounting for 45 % of its coal, 36 % of its gas and 25 % of its oil imports. Over the course of 2022, the situation [changed](#) dramatically, with several rounds of sanctions on Russian energy products, EU policy [initiatives](#) to wean itself off Russian energy (such as [REPowerEU](#)) and the limits on gas transmission imposed by Russia. The latest available [data](#) show that, in the fourth quarter of 2022, the EU imported no coal, and only 18 % of its gas and 15 % of its oil, from Russia.

However, despite these reductions in Russian energy imports, energy security remains a long-term challenge for the EU given its overall high energy dependency. Diversifying imports away from Russia and towards other third-country suppliers can bring new risks relating to geopolitical considerations, competition in the global economy and developing dependencies on undemocratic regimes. Energy security is also inextricably linked to energy affordability, which the energy crisis made blatantly clear. Energy prices have risen in light of supply problems and were the main driver of overall [inflation](#) that impacted the budgets of households and companies. Furthermore, as fossil fuels remain the main [contributor](#) to greenhouse gas emissions (GHG), energy security is intertwined with climate policies. This may sometimes lead to short-term trade-offs (as seen in temporarily increased production of coal in 2022) but also to opportunities, as the energy crisis is at the same time accelerating long-term investments (such as the roll-out of renewables) and thus increasing domestic energy production, thereby also contributing to energy security.

The impact of the conflict on the EU energy situation was the most severe in terms of gas. In 2022, the EU managed to cope without supply disruptions and avoid gas shortages during the winter period. Nevertheless, a recent International Energy Agency (IEA) [report](#) warns of potential gas shortages in the winter of 2023 in case of a further drop in Russian supplies, LNG demand rebound in China and prolonged cold weather conditions in Europe. The EU is thus faced with a challenge to intensify its efforts, as it moves from short-term crisis management to tackling the challenge of ensuring long-term energy security and strengthening its [strategic autonomy](#) in the energy field.

Position of the European Parliament

The March 2022 [resolution](#) on Russia's aggression against Ukraine calls for reducing the EU's energy dependence, in particular on Russian gas, oil and coal, by diversifying energy sources, expanding LNG terminals and supply routes, unbundling gas storage, increasing energy efficiency and speeding up the clean energy transition.

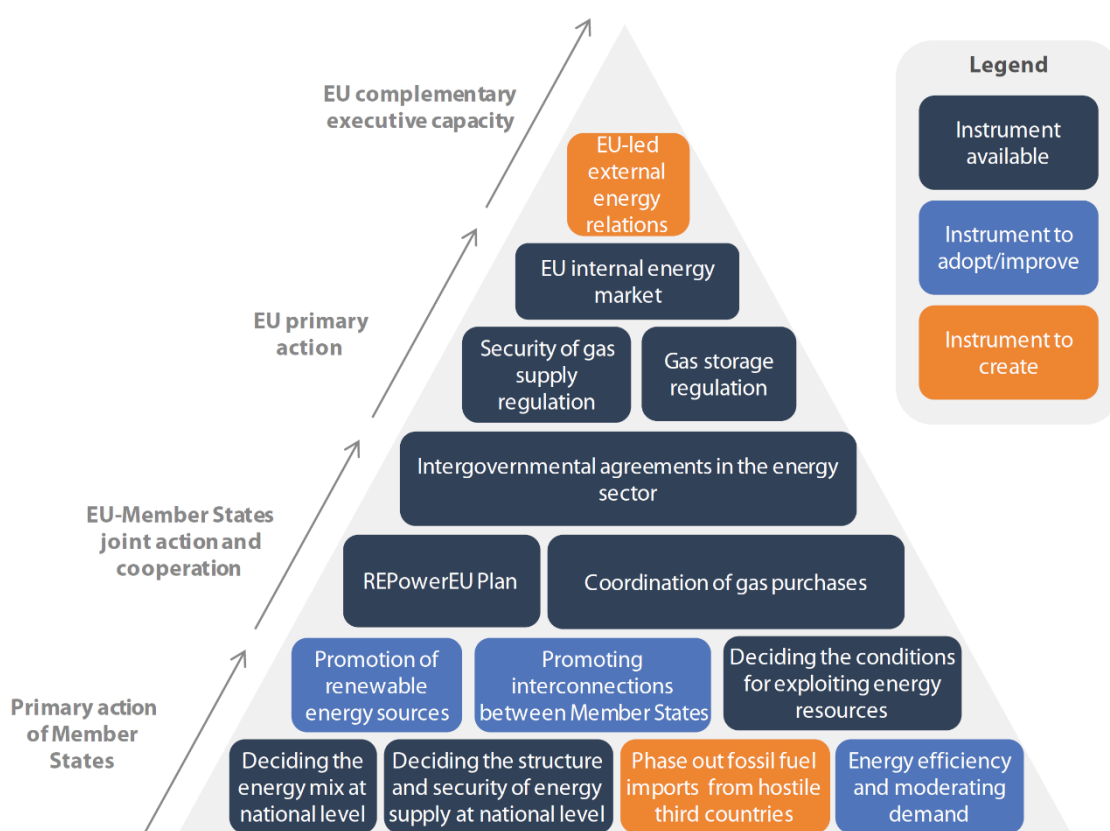
In a [resolution](#) of April 2022 on the 'Conclusions of the European Council meeting of 24-25 March 2022: including the latest developments in the war against Ukraine and the EU sanctions against Russia and their implementation', the European Parliament called for the establishment of common strategic energy reserves and energy purchasing mechanisms at EU level to increase energy security

and reduce external energy dependency and price volatility. It also called for a full embargo on Russian energy imports.

In its May 2022 [resolution](#) on 'The social and economic consequences for the EU of the Russian war in Ukraine – reinforcing the EU's capacity to act', Parliament stressed the importance of ensuring energy sovereignty and independence from Russian supplies and more strategic autonomy and energy security, by upgrading and ensuring major investment in the EU's energy infrastructure, including interconnections and cross-border infrastructure for renewable energy production, and energy efficiency.

In its [resolution](#) of October 2022 on 'The EU's response to the increase in energy prices in Europe', Parliament highlighted the role of investments in renewable energy, energy efficiency and the necessary infrastructure – including targeted, well-defined cross-border projects with investments through NextGenerationEU and REPowerEU – in helping the EU achieve energy sovereignty, open strategic autonomy and energy security.

Figure 40 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

Over the course of 2022 and 2023, the EU undertook a number of actions to reduce its dependency on Russian energy, for instance by diversifying its energy supplies, filling up gas storage facilities, promoting joint gas purchases, reducing energy demand and promoting energy savings, increasing energy efficiency and boosting the deployment of renewables. Many of these measures also help boost overall energy security in the long term by reducing Europe's dependency on fossil fuel imports from third countries.

In May 2022, the European Commission put forward the [REPowerEU plan](#) to reduce energy imports from Russia and accelerate the green transition. The plan included two legislative proposals: one on REPowerEU chapters in the Recovery and Resilience Plans ([Regulation \(EU\) 2023/435](#), adopted in February 2023) and a [proposal](#) amending three energy directives to boost renewable energy use and increase energy efficiency (procedure [ongoing](#)). The REPowerEU plan also included several strategies, e.g. to boost energy savings and diversify energy imports.

Renewable energy accounted for [21.8 %](#) of EU energy consumption in 2021; a revision of the Renewable Energy Directive (RED) under the European Commission's Fit for 55 package (July 2021) aimed to raise the EU's 2030 target from 32.5 % to 40 % by 2030. The REPowerEU plan proposed to raise this target further to 45 %. In a March 2023 compromise [agreement](#) between the Parliament and the Council, this target was set at 42.5 %, with the possibility of an additional indicative top-up of 2.5 %. Additional sub-targets have been adopted for transport, industry, buildings, heating and cooling. The REPowerEU plan also proposed amendments to the Energy Performance of Buildings Directive, introducing an obligation to provide solar energy installations on buildings. Moreover, the REPowerEU plan included a [solar energy strategy](#) with a target of over 320 GW (gigawatts) of newly installed solar photovoltaic capacity by 2025, and almost 600 GW by 2030. These initiatives were followed by Council [Regulation \(EU\) 2022/2577](#), adopted in December 2022 and laying down a framework to accelerate deployment of renewable energy. This regulation aimed to simplify permitting procedures for renewable energy projects, in particular solar installations, heat pumps, and projects involving the repowering of renewable energy plants.

The EU also took measures to curb energy consumption in the short, medium and long term. The REPowerEU legislative proposal included amendments to the Energy Efficiency Directive that increased the 2030 target for energy efficiency to 13 % (compared with a 2020 reference scenario). This came on top of the revision already proposed in the context of the European Green Deal and the Fit for 55 package, which aimed to increase the target by 9 %. A compromise [agreement](#) reached by the co-legislators in March 2023 set the EU energy efficiency target of 11.7 % for 2030. Another initiative under REPowerEU was the EU '[Save Energy](#)' plan, which proposed a number of energy-saving measures. Council [Regulation \(EU\) 2022/1369](#) of August 2022 on coordinated demand reduction measures for gas set a voluntary 15 % target for reducing Member States' gas consumption between 1 August 2022 and 31 March 2023 (the target would become mandatory in emergencies); the regulation was [prolonged](#) until 31 March 2024. Council [Regulation \(EU\) 2022/1854](#) of October 2022 on an emergency intervention to address high energy prices committed Member States to a binding 5 % reduction in peak electricity consumption, and a voluntary 10 % reduction in overall electricity consumption between 1 December 2022 and 31 March 2023. Additional aspects of this regulation included measures aiming to compensate consumers for high energy prices through a cap on excess revenues of some electricity generators and a solidarity contribution from fossil fuel producers, as well as allowing Member States to regulate electricity prices in some cases. Separately, [Regulation \(EU\) 2022/2578](#) establishing a market correction mechanism to protect citizens and the economy against excessively high prices set a temporary gas price cap at €180/MWh, aiming to limit extreme gas price spikes. This mechanism is valid for a year from 1 February 2023 and can be suspended if it jeopardises the security of gas supply, intra-EU gas flows, financial stability and demand reduction efforts.

Another important response to the energy security challenge was a diversification of energy supplies. The EU external energy engagement [strategy](#), presented as part of REPowerEU, proposed measures to build long-term energy partnerships around the globe. The largest [increases](#) in energy imports from outside the EU have come from Colombia and South Africa for coal, the United States for LNG, and Saudi Arabia and the US for oil. In addition to [stronger](#) energy trading relations with the US, the EU also scaled up its gas imports from Norway, Qatar, Algeria and Azerbaijan. Moreover,

it has developed and/or accelerated the development of energy infrastructure, for instance new LNG terminals (e.g. Wilhelmshaven in Germany), the Baltic Pipe gas pipeline and the Gas Interconnector Greece-Bulgaria. The EU has also strengthened its energy relations with Ukraine, for instance through initiatives such as the [Generators of Hope](#) and increased electricity trading through the [synchronisation](#) of the EU and Ukrainian power systems.

In terms of boosting gas storage in response to limited supply, [Regulation \(EU\) 2022/1032](#) of June 2022 on gas storage set a binding target of 80 % of EU storage capacity to be filled in by 1 November 2022, with a 90 % target set for subsequent years. The regulation was swiftly implemented and storage facilities reached a [filling](#) rate of 80 % as early as September and of 90 % as early as October 2022. The EU exited the winter season with record high storage levels of [57%](#) at the end of April 2023, while the current filling rate (May 2023) stands at 68 %, according to the latest [data](#). Therefore, the EU appears well on track to achieve the 90 % filling rate by October 2023, barring unforeseen geopolitical and meteorological events. It is also important to note that the Security of Gas Supply [Regulation 2017/1938](#) (last amended by the above Regulation (EU) 2022/1032 on gas storage) has provisions to ensure energy security by helping to prevent supply disruptions, respond to them when they occur, and ensure that vulnerable consumers are always supplied.

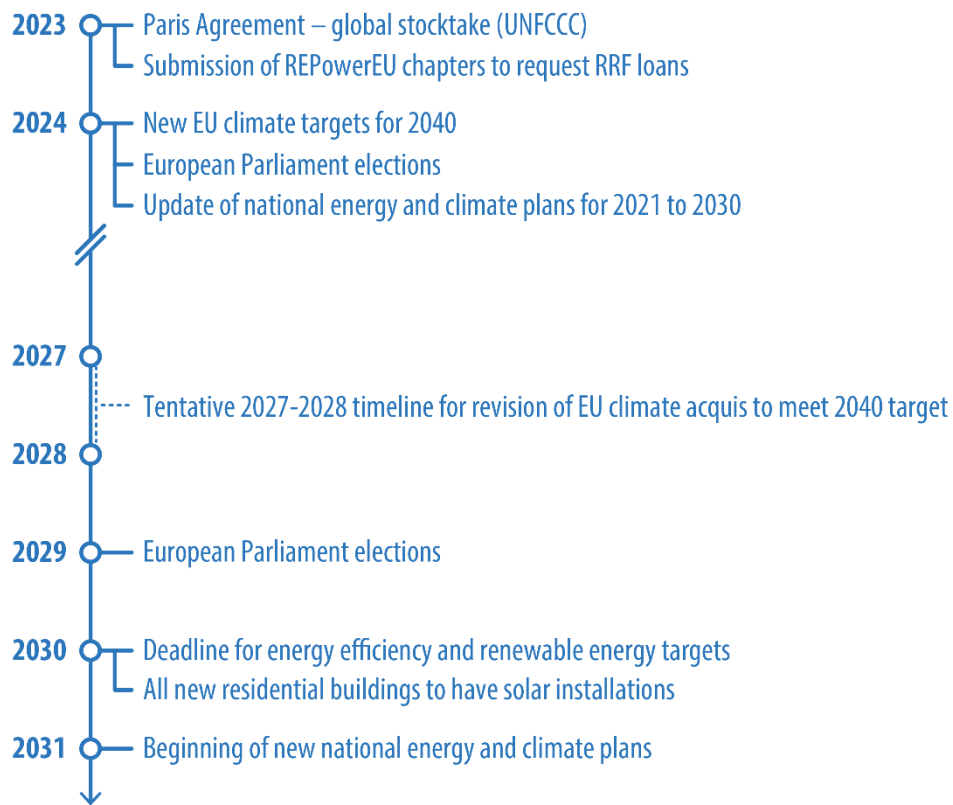
Council [Regulation \(EU\) 2022/2576](#) of December 2022 enhancing solidarity through better coordination of gas purchases, reliable price benchmarks and exchanges of gas across borders (the 'Solidarity Regulation') included measures improving the security of gas supply and addressing gas price volatility. The [EU Energy Platform](#) was established to coordinate EU action and negotiations with external suppliers of natural gas and LNG through voluntary joint gas purchasing (see also 'In focus' box on AggregateEU).

In focus: AggregateEU

AggregateEU is a demand aggregation and joint purchasing service under the EU Energy Platform in accordance with Council [Regulation \(EU\) 2022/2576](#) (the 'Solidarity Regulation'). Its objective is to contribute to the security of supply in terms of both volume and affordability. It covers both pipeline gas and LNG, but excludes Russian supplies. The mechanism matches buyers and sellers via tenders on a bimonthly basis. On the demand side, companies established in the EU or [Energy Community](#) countries can participate, while sellers may also include non-EU companies. Gas purchasing through AggregateEU is not mandatory; however, Member States are obliged to participate in the demand aggregation process by submitting a certain volume for demand aggregation (equivalent to 15 % of their obligation under the gas storage [regulation](#); demand aggregation on top of this is voluntary). The first call under the AggregateEU mechanism was [launched](#) in April 2023. By mid-May, 77 European companies had [submitted](#) requests for a total volume of approximately 11.6 bcm of gas.

Source: European Commission, [Joint gas purchasing](#) and [AggregateEU – questions and answers](#).

Figure 41 – Timeline of selected energy policy-related events



Source: EPRS.

Obstacles to implementation of response

Energy security is a shared EU competence under [Article 194](#) of the Treaty on the Functioning of the European Union (TFEU), which provides a legal basis for EU energy policy. There is thus no obvious legal obstacle to strengthening energy security at EU level. However, the same Treaty article also stipulates that Member States are responsible for their energy mix and the general structure of energy supply. The coordination of EU energy systems thus depends on political choices by individual Member States to a certain extent. Moreover, the Member States have a major role in financing and scaling up renewables, for instance through market incentives. They also make decisions on creating energy interconnectors with other countries. Permitting procedures for renewables, even if facilitated through EU-level legislation (for instance, under REPowerEU and the solar energy strategy), also require the participation of the national and local levels to bring about tangible outcomes.

Policy gaps and pathway proposals

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	More coherent EU external energy policy	Commission, Council	EU to have greater responsibility for external energy policies, including negotiations with third countries and participation in internal fora	Resolution on Energy Union (TA 2015/0444) Commission proposed an external energy engagement strategy (May 2022)	
2	Halt NS2 and reduce imports from Russia	Commission, Council	NS1 and NS2 have been permanently switched off due to damage caused by explosions Commission has proposed ways to reduce energy imports from Russia	Resolution on Ukraine (TA 2022/0052) Recommendation on Nord Stream 2 (TA 2021/0383) COM(2022) 230	
Proposals submitted by the European Commission/ongoing processes					
3	Increasing energy efficiency and the share of renewables	Commission/Parliament/Council	Revision of the Renewable Energy Directive and Energy Efficiency Directive	COM(2022) 222	
4	Voluntary joint purchasing of gas	Commission/Parliament/Council	Better coordination of gas purchases and exchanges of gas across borders	COM(2022) 549	
5	Countering high energy prices	Commission/Parliament/Council	Emergency intervention to address high energy prices	COM(2022) 473	
Policy suggestions from think tanks and academia/policy examples from third countries					
6	International Energy Agency	Commission/Parliament/Council	Alternative supply sources, gas storage obligation, wind and solar projects, energy efficiency, energy saving behaviours	A 10-point plan to reduce EU reliance on Russian gas and a 10-point plan to cut oil use	
7	Bruegel	Commission/Member States	Increase LNG supply and reduce gas demand	Preparing for the next winter: Europe's gas outlook for 2023	

Safeguarding our natural capital

Jurgita Lekaviciute and Liselotte Jensen

The issue(s) in short: The challenge and the existing gaps

Excessive emitting of greenhouse gases from human economic activity into the atmosphere is causing global warming, with [Europe warming faster](#) than any other continent, according to the World Meteorological Organization (WMO). Among the impacts of global warming, one that is very concerning is the change in weather patterns, with more frequent and intense extreme weather events. Such events include droughts, where reduced rainfall can cause water scarcity and negatively impact the quality or accessibility of water resources. In 2021, the EEA [estimated](#) that 20 % of Europe's territory and 30 % of its population experience water stress on an annual basis. As discussed in the risk chapter on droughts and water scarcity, this can have a serious impact on economic sectors as well as on biodiversity.

Biodiversity is declining faster than at any time in human history in every region of the planet. Around [one in eight global animal and plant species](#) are threatened with extinction. In the latest assessment of [the state of nature in the EU](#), an estimated 81 % of EU habitats and 63 % of species have poor or bad conservation status. Still, 36 % continue to deteriorate at the EU scale and only 9 % of these habitats show improving trends. As noted in the risk chapter on biodiversity loss or collapse, biodiversity loss is much more than the extinction of species. Biodiversity provides us with ecosystem services essential for life: the food we eat, the air we breathe, and the medicines we use.

A key European instrument to tackle water stress and ensure sustainable use is the Water Framework Directive (WFD) ([2000/60/EC](#)). Unfortunately, implementation is lacking, with more than half of European water bodies, in 2019, under exemption from staying on track for the WFD targets – which should be reached in 2027.

According to the UN Convention on Biological Diversity (CBD), the main international instrument on biodiversity protection, none of the [20 Aichi biodiversity targets](#) adopted by the international community for the last decade were fully met. In the 15th and most recent meeting of the conference of parties under the CBD (COP15) in December 2022, the 196 parties agreed on a new (non-binding) global biodiversity framework, which consists of 23 targets, including some to restore 30 % of degraded ecosystems and to protect 30 % of land and sea areas by 2030.

[Leadley et al.](#) suggest that it may be possible to reverse biodiversity decline caused by habitat loss by 2050, but only if actions are implemented urgently and in an integrated way. Increased conservation efforts are critical but not sufficient; there is a need for strong action on conservation and on the direct and indirect drivers of biodiversity loss. The literature also suggests that [if we fail to limit global warming](#) to 1.5°C or even 2°C, the continued impact of extreme weather events and changes in temperature and precipitation will become the dominant cause of biodiversity loss.

Position of the European Parliament

The European Parliament [declared](#) a climate and environment emergency in 2019, stating that 'immediate and ambitious action is crucial to limiting global warming to 1.5°C and avoiding massive biodiversity loss'. This was reiterated in its January 2020 [resolution](#) on the European Green Deal, where Parliament argued that a safe, clean, healthy and sustainable environment and a stable

climate should be a fundamental right for all people living in Europe. Parliament highlighted that agriculture, fishery and food production remain the biggest driver of terrestrial and marine biodiversity loss, calling for full alignment of the CAP with the European Green Deal ambitions and for the Commission to ensure this in its assessments of Member States' strategic plans and eco-schemes. Parliament further noted the promise of nature-based solutions to help towards both climate and biodiversity targets, and called for the EU to push for a binding global agreement to halt and reverse biodiversity loss. In its [resolution](#) adopted the following day, specifically regarding COP15, it reiterated this need for binding targets at both EU and global level, and for an ambitious EU biodiversity strategy to protect natural areas and restore degraded ecosystems by 2030.

In its [resolution](#) of 17 December 2020 on the implementation of EU water legislation, Parliament stressed the need to update the list of priority substances (Annex X of the WFD) and insisted that pollutants of emerging concern and mixed toxicity should be addressed within the framework of the WFD and its 'daughter' directives. It called on the Commission to strengthen monitoring of potential pollutants and their risk profiles and to take decisive action when Member States fail to meet environmental quality standards set in EU legislation for priority substances.

In June 2021, Parliament [welcomed](#) the EU biodiversity strategy for 2030 and its level of ambition, while making nearly 200 recommendations to strengthen it. Parliament asked the Commission and Member States to increase their efforts towards reaching the goals laid down in the strategy. It also called on the Commission to submit, in 2022, a proposal for a legally binding governance framework – a 'biodiversity law', as a counterpart to the EU climate law – to steer a path to 2050. In the subsequent 2021 [resolution](#) on the farm to fork strategy, Parliament called for a pollinator indicator and a restoration target, reiterating the need to reduce harmful pesticides use.

In response to the droughts of 2022, potentially the worst for at least [500 years](#), which left 64 % of the continent under a drought warning (with 17 % on drought alert) according to the European Drought Observatory, Parliament adopted a [resolution](#) on the consequences of drought, fire and other extreme weather phenomena. This linked pressures on water ecosystems and broader biodiversity concerns with the general health of EU citizens and with impacts on and from the agricultural sector, in particular, and other high water demand sectors, highlighting the risk exposures, along with measures to adapt and increase resilience. Parliament pointed to the potential of specific types of nature-based solutions to increase overall resilience of ecosystems, and noted the human right to drinking water and the need to recognise violations.

The resilience of the agricultural sector, as a key sector in terms of both its impact on and dependence on ecosystem services, has required particular attention. During the June 2023 plenary, Parliament adopted an own-initiative [resolution](#) on 'Ensuring food security and the long-term resilience of EU agriculture'. It specifically addresses the need for new cultivation methods to increase crops' resilience to climate change and protect agricultural yields in view of the droughts and water shortages faced by more and more EU Member States. While Parliament stressed the importance of restoration and conservation of biodiversity, soil health, and the use of agro-ecological and organic methods in relation to crop resilience and yield, it also called for further research and dissemination efforts towards farmers regarding new breeding techniques, including new genomic techniques. Some of these aspects are included in the 6 July 2023 [package](#) on food and biodiversity.

While Parliament has called for a reduction in the use of harmful pesticides, the food security resolution above reiterated the need for integrated pest management measures and research into alternatives to synthetic fertilisers and pesticides. It criticised the Commission's [proposal](#) to limit, and in some areas ban, pesticides without offering alternatives to protect farmers' livelihoods and safeguarding EU food security.

EU policy responses (Commission and Council responses so far)

Climate change affects human activity and our natural capital. The European Green Deal of December 2019 proposes many measures for combating climate change, with the 2021 EU climate law making action to cut greenhouse gas emissions legally binding and the 'Fit for 55' package strengthening the main instruments to do so. Likewise, the EU has a dedicated line of action for safeguarding our natural capital.

The EU framework for nature protection is based on two main nature directives: the [Birds Directive](#) and the [Habitats Directive](#). They seek to ensure the conservation of species and habitat types of EU importance by establishing an extensive network of special protected areas called the Natura2000 network. In 2020, the EU adopted the [biodiversity strategy for 2030](#), aligned with the ambitions and commitment set out in the European Green Deal. It is dedicated to protecting and restoring nature and to reducing direct pressures such as pollution and invasive species, and seeks to enable transformational change to address underlying drivers of biodiversity loss, with ambitions reaching the global level. It also proposes to set legally binding nature restoration targets, which formed the flagship [proposal](#) for a nature restoration law in 2022.

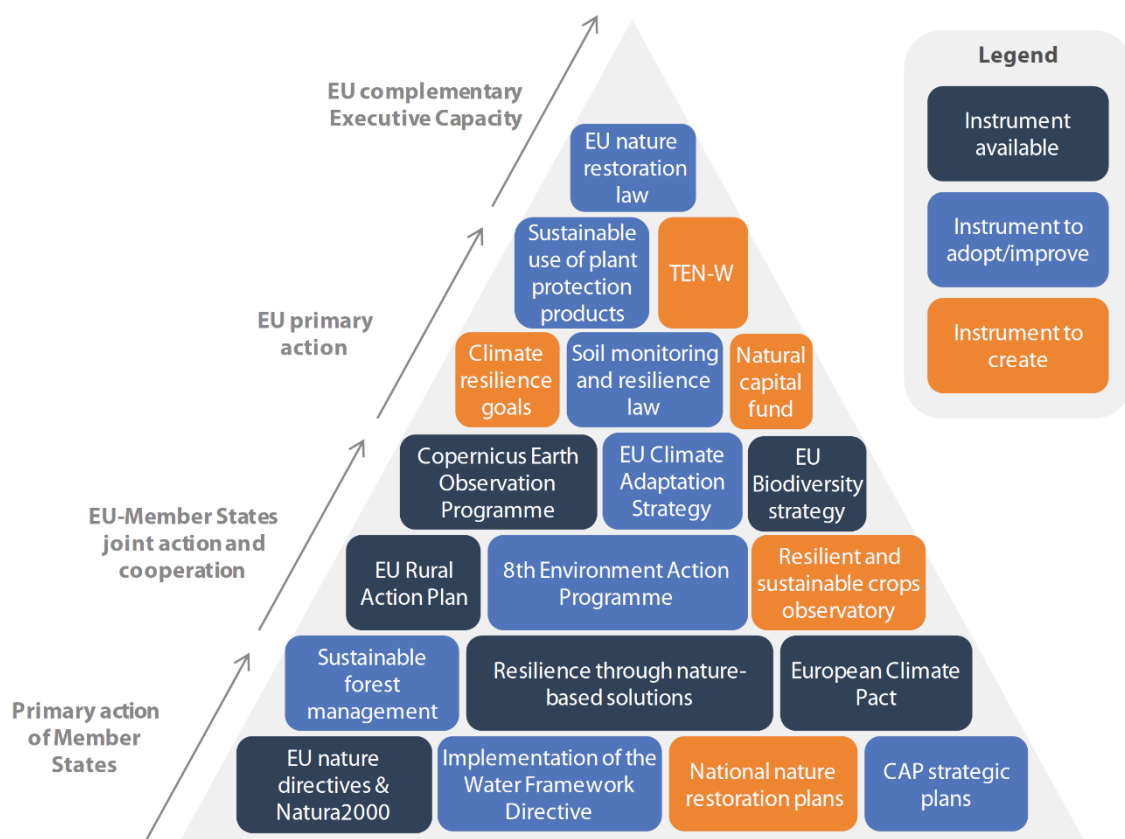
The [WFD](#) is the main legal tool for protecting Europe's water bodies, together with its two daughter directives: the [Environmental Quality Standards Directive](#) and the [Groundwater Directive](#). Among other things, the legislation lists priority substances posing risks to water quality and requiring monitoring and concentration limits. Currently, 53 substances are covered in legislation for surface water (mainly pesticides, industrial chemicals and metals). The fitness check of EU water legislation identified shortcomings regarding chemical pollution, and a [revision](#) of the list of pollutants and the corresponding regulatory standards are under way. The proposed text would add 23 individual substances to the list of priority substances for surface waters, including pesticides such as glyphosate, some pharmaceuticals (painkillers, anti-inflammatory drugs, antibiotics), Bisphenol A, and a group of 24 Per- and polyfluoroalkyl substances (PFAS). The proposal would also introduce an obligation, in exceptional circumstances of natural origin or force majeure (extreme floods, prolonged droughts, or significant pollution incidents), for competent authorities of all possibly affected water bodies to alert each other and cooperate to minimise damage and address consequences. Another important tool with regard to water management, the Urban Wastewater Treatment Directive, is also currently under [review](#).

The 2021 [zero pollution action plan](#) outlines several measures with relevance to biodiversity and water stress, which are also prevalent in the 2020 [farm to fork strategy](#). These include, for example, the halving by 2030 of nutrient losses and the use and risk of chemical pesticides, including the use of the more hazardous ones, subsequently proposed as part of the 2022 [proposal](#) for a regulation concerning the sustainable use of plant protection products, replacing the existing [Directive on Sustainable Use of Pesticides](#). As a result of reduced nutrient losses, fertiliser use is expected to decrease by a further 20%. The EU biodiversity strategy for 2030, the farm to fork strategy and the zero pollution action plan are expected to substantially reinforce actions to protect pollinators.

Targets for nature-friendly agriculture under Pillar 2 of the biodiversity strategy go beyond reducing chemical pesticides and fertilisers and include expanding organic farming and high-diversity landscape features that enhance carbon sequestration and increase agro-forestry and urban greening. Most of these targets are also part of the farm to fork strategy, which aims to make EU food systems more sustainable. The combined measures targeting sustainable food production and land use make the [EU common agricultural policy](#) (CAP) an essential tool to help in the transition of agricultural practices. The new [EU forest strategy for 2030](#) and the 2023 [regulation on deforestation-free products](#) are also key steps to protect and preserve biodiversity in Europe and beyond.

In many of the strategies highlighted above, as well as in the [EU strategy on adaptation to climate change](#) and the [EU climate law](#), nature- or ecosystem-based solutions are noted as key win-win options to adapt to a changing climate, enhance biodiversity and increase resilience of ecosystems and sectors simultaneously. According to Eggermont et al (2015), nature-based solutions (NBS) refer to the sustainable management and use of nature to tackle societal challenges. There are [different NBS](#) for different sectors, such as green buildings, public and urban spaces, water management, sustainable forestry, sustainable agriculture, sustainable tourism, and others. One NBS area of relevance here are solutions for water management that involve the use of ecosystem services to improve water quantity and quality, and to increase resilience to climate change. These include natural solutions for the management of flood and surface water in rural, peri-urban, and urban contexts, wastewater management and treatment, and resource recovery.

Figure 42 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

Figure 42 shows some of the core tools of relevance to water stress or biodiversity concerns; not all are directly touched upon in the text, but all play or could play a significant part in safeguarding Europe's natural capital. Implementation of EU legislation happens at local, regional and national level, while joint action and cooperation can support innovation and sharing of best practices. Similar tools to the natural capital fund used to exist through the EIB's [natural capital financing facility](#), which was merged into [InvestEU](#), though the section on obstacles below suggests targeted financing is needed. The TEN-W box under EU primary action links back to the idea in the risk chapter on droughts and water scarcity to establish a trans-European network (TEN) for water – using an ecosystem approach to apply foresight and planning – to safeguard people, biodiversity and businesses relying on water as a resource. [TENs](#) already exist in the areas of transport, energy and telecommunications, with a focus on delivering a functioning single market. A TEN-W could help prioritise and secure water resources for water transport, energy production, farming or human

consumption while respecting the carrying capacity of ecosystems at a transnational level, as water in Europe crosses many borders.

Obstacles to implementation of responses

In the United Nations Environment Programme (UNEP) synthesis report entitled 'Making Peace With Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies' (2021), [human-induced environmental degradation](#) is identified as one of the factors impeding the end of poverty and hunger, the reduction of inequalities and the achievement of sustainable economic growth. The report highlights that natural capital needs to be included in decision-making and that environmentally harmful subsidies need to be stopped.

One of the main obstacles to adequately integrating biodiversity and natural capital concerns comes from biodiversity and nature not having a clear economic value. Nature's value and the benefits it provides are, as a result, not considered in economic activities, but every sector or company depends on nature to a certain degree. While exploring the links between economic activities and natural ecosystems, it was found that [55% of global gross domestic product](#) (GDP) is moderately or highly dependent on nature. In five industries (agriculture; forestry; fishery and aquaculture; food, beverages and tobacco; and construction), [100%](#) of the economic value generated by direct operations (and a minimum of 60 % generated in the supply chains) exhibits high dependence on nature (these five industries represent 12 % of global GDP, amounting to US\$13 trillion).

According to a top [European Central Bank \(ECB\) executive](#), an ECB study evaluating data on 4.2 million companies concluded that 72 % of Eurozone companies and three-quarters of bank loans in the region are exposed to loss of biodiversity; the study assessed how many rely on at least one 'nature-related service' such as pollination, clean water, healthy soil, timber, or sand. The executive warns that destroying nature will 'destroy the economy'.

A better understanding of the economic value of biodiversity and of the financing of biodiversity is therefore an important issue that will need attention in the future. A 2022 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) [report](#) on valuing nature warns that, though we need to value nature more in decision-making at all levels, putting a price on nature remains a complex challenge due to natural ecosystems' interconnectedness and intrinsic values, often depending on context and culture and rarely substitutable.

A recurring obstacle concerns the overall implementation of adopted legislation, such as the WFD, and of achieving biodiversity targets set out in the EU biodiversity strategy for 2030 and agreed at COP15. It is also important to strengthen international cooperation, as well as the alignment of local, national and international efforts towards sustainability, and this is best done leading by example.

In October 2020, the Council [conclusions](#) on the EU biodiversity strategy reaffirmed that more ambition on nature restoration is needed, including measures to protect and restore biodiversity beyond protected areas. The conclusions also recognised the important link between climate change and biodiversity loss, as well as their respective solutions. In the [conclusions](#) for COP15, the Council called for the adoption of an ambitious, comprehensive and transformative post-2020 global biodiversity framework that includes long-term 2050 goals, 2030 intermediate outcomes and action-oriented 2030 targets that effectively and simultaneously address the direct and indirect drivers of biodiversity loss. When Parliament welcomed the biodiversity strategy, it [endorsed](#), by 515 votes to 90, with 86 abstentions, the main targets of the Commission's proposal. Parliament also supported the idea of restoring at least 30 % of the EU's land and sea and requested a binding governance framework towards 2050 with 2030 targets – comparable to the EU climate law.

The proposed nature restoration law is argued, by many, to be an essential step, yet policymakers across the Council and Parliament have questioned the best approach to safeguarding our natural capital, citing concerns for farmers and food security in particular (see box below); trilogues between the institutions started in July 2023. [Scientists](#), [NGOs](#) and various organisations, including joint statements from '[EU Farmers for Nature Restoration](#)' and the industry-linked [Forum for the Future of Agriculture](#), reconfirmed their full support for the proposed legislation, stating that 'the science is clear that nature restoration will increase our resilience to extreme weather events and support long-term food security'.

In focus: The fate of the proposed EU nature restoration law

The June 2022 proposal for a nature restoration law is the core element of the EU biodiversity strategy for 2030. It sets multiple binding restoration targets and obligations across a broad range of ecosystems, complementing existing legislation. These nature restoration measures should cover at least 20 % of the EU's land and sea areas by 2030, and all ecosystems in need of restoration by 2050. The proposed nature restoration law also has a specific objective to [reverse the decline of pollinator populations](#) by 2030.

In May 2023, the EU nature restoration law was voted in the opinion-giving committees, where the European Parliament's [Committee on Agriculture and Rural Development](#) and [Committee on Fisheries](#), both associated to the Committee on the Environment, Public Health and Food Safety (ENVI) file on EU nature restoration law, voted to reject the proposal. In a speech to the ENVI committee, European Commission Vice-President Frans Timmermans said there [would not be another proposal](#), stating that '[the] nature restoration law is a climate law of biodiversity and therefore a pillar of the Green Deal' and that 'there is no such thing as supporting the outcome of COP15 but refusing to implement it at home'. His final statement concluded that we cannot 'maintain the Green Deal without the nature pillar, because without the nature pillar, the climate pillar is also not viable'.

The ENVI committee voted on amendments to the proposed text on 15 and 27 June 2023. The [final vote](#) was tied (44 votes in favour, 44 against, with no abstention), meaning that, even if it was not rejected, there [was no clear majority](#) in the ENVI committee to support the proposal as amended. ENVI was therefore bound to table [a proposal](#) to reject the Commission's text.

The Council adopted [its general approach](#) on the file on 20 June 2023, supporting an ambition for restoration measures to cover jointly at least 20 % of the EU's land and 20 % of sea areas by 2030. However, it introduced various flexibilities in the ecosystem-specific obligations, a step-by-step approach for the delivery of national restoration plans, provisions on financing, and some derogations.

During the plenary on 12 July, the proposal to reject the Commission's proposal did not pass (312 votes in favour to 324 against, with 12 abstentions). In a tight vote, Parliament finally [adopted its position](#) in favour of the nature restoration law (by 336 votes to 300, with 13 abstentions). A proposed amendment to increase to 30 % the overall 2030 restoration target, with reference to the COP15 agreement, was not adopted, with the target of 20 % from the [Commission proposal](#) being agreed to. Yet, other amendments resulted in a weaker position from the [Parliament](#) than that of the original proposal or even the Council's general approach. Examples of such amendments include the deletion of the proposed article concerning restoration of agricultural ecosystems and sub-targets regarding rewetting of drained peatlands. The Council reduced the proposed mandatory indicators for forest ecosystems from six to three, while Parliament left only one of them (Article 10). Article 4 revisions deleted the time-bound targets (2030, 2040 and 2050, with linked percentages) and non-deterioration obligations, and (in 4.1) limited land, coastal and freshwater restoration measures to within Natura2000 areas only. The new Article 22a would allow targets to be postponed due to socioeconomic concerns and Article 23 would require an impact assessment on food security before the law would apply.

Following the plenary vote, several environmental NGOs released a [joint statement](#) noting that the fact the proposal was not rejected was a victory, but criticising the resulting 'shell of a law' due to the low level of ambition.

As regards the uptake of NBS, a key obstacle frequently noted by city authorities and private developers concerns knowledge gaps about the types of NBS available on the market, as well as a

perceived lack of evidence of the effectiveness of such solutions; this in turn results in a lack of experience when it comes to public and private procurement of NBS. The [2022 independent expert report](#) on 'nature-based solutions in a nature positive economy' outlines these obstacles as well as the evidence supporting the effectiveness of NBS for specific sectors.

For agriculture in particular, NBS are highlighted as a transition pathway towards sustainable agriculture, where agricultural activities become part of the natural system using methods which conserve and restore soils and ecosystems over those that degrade the environment on which it depends. NBS in the agricultural sector can comprise agricultural landscapes or agricultural production. For agricultural landscapes, the focus is on multifunctional landscapes and waterscapes, improving conditions for biodiversity, increasing resilience to extreme events, and enhancing ecosystem services. For agricultural production, there is a focus on optimisation through nutrient management and retention, and resilience through mixed production such as in agro-forestry.

In general, the report states that working with NBS increases resilience to extreme weather events, improves yields over time and has lower costs. For other sectors, such as tourism, applying NBS can help conserve tourism activities and attractions by lowering the impacts from visitors on the natural world and engaging tourists in conservation. For the water management sector, its relevance was touched upon in the section above on EU policy responses – although it is important to reiterate that water management is not only essential to secure drinking water and irrigation for human society, but that it also includes returning nutrients to the soil and ensuring resilience of wetlands and river systems providing both economic and biodiversity benefits.

Obstacles to the implementation of NBS and evidence of their benefits therefore point to a need for greater attention to be paid to integrating biodiversity across different sectors and policies, to deliver co-benefits.

As Figure 43 highlights, the next decade has significant milestones and opportunities for pushing higher ambitions or, at the very least, reflection at all levels on the adequacy of EU actions. The obstacles already experienced in implementing the WFD and agreeing on the nature restoration proposal put in question the commitments to address the environment and climate crisis, where the global stocktake is likely to demand increased efforts by developed countries.

Figure 43 – Timeline of key milestones in action to safeguard natural capital



Source: EPRS.

Policy gaps and pathway proposals

On the global level, at the recent COP15 meeting of the UN CBD, it was agreed that [investors and businesses](#) need to integrate nature and biodiversity issues into their strategic planning and reporting, alongside climate change. [It was agreed](#) to mobilise, by 2030, at least US\$200 billion per year across all sources and raise international biodiversity financing from developed to developing countries to at least US\$20 billion per year by 2025, and to at least US\$30 billion per year by 2030. In the EU, the [biodiversity strategy for 2030](#) envisages the need to unlock at least €20 billion a year for spending on nature, and further expects a significant part of the [EU budget](#) dedicated to climate action to go towards biodiversity and NBS. The European Parliament [secured](#) the introduction of an annual biodiversity spending target of 7.5 % from 2024, with the aim of reaching 10 % in 2026 and 2027.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Biodiversity-proofing components in the financial instruments	Commission/ Parliament/ Council	Include biodiversity-proofing components in their financial instruments to avoid adverse effects on biodiversity	EP Resolution on COP15 to the Convention on Biological Diversity	
2	2030 EU land degradation neutrality objective	Commission/ Parliament/ Council	Calls for an EU objective of land degradation neutrality in the EU by 2030 to ensure that the corresponding target under the UN SDGs is fully met in the EU, given that the EU is not currently on track to meet the SDG target, as highlighted in the ECA 2018 special report on desertification	2022 EP resolution on the consequences of drought, fire, and other extreme weather phenomena: increasing the EU's efforts to fight climate change (2022/2829(RSP))	
3	EU water strategy – potentially leading towards a trans-European water network (TEN-W)	Commission/ Parliament/ Council	Calls for a comprehensive EU water strategy, including the organisation with Member States of a European water conference to rapidly develop guidelines on the management of transnational shared river basins, especially in the event of multi-annual droughts, and to ensure a balanced prioritisation between water uses	The European Economic and Social Committee is working on water as a cross-cutting theme in 2023 and has announced it will call for an EU Blue Deal	
4	EU soil health/monitoring and resilience law	Commission/ Parliament/ Council	Underlines the importance of soil health for water retention and filtration; calls on the Commission to make water retention and filtering capacity as well as soil moisture a key pillar of the draft EU soil health law (published in July as the soil monitoring and resilience law) to be published in 2023; underscores that peatlands have huge potential as carbon sinks and play a significant role in filtering water and mitigating floods, droughts and wildfires		

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
5	CAP/EU water policy	Commission/ Parliament/ Council	Parliament called for several actions from the Commission, including: specific programmes to improve water management in agriculture, increase resilience and ensure water supply; support for the development, storage and use of treated wastewater for agriculture; accelerated implementation of cohesion policy and specific infrastructure to combat extreme droughts in Europe; measures to promote vertical farming, which requires less water and pesticides; ensuring primary availability of farmland for sustainable production of food and feed, since this land contributes to biodiversity conservation while also contributing to food security; speeding up the adoption of legislation on the use of new breeding techniques, while complying with the precautionary principle in order to sustainably increase yields and make crops more resilient to climate change	2023 EP resolution on ensuring food security and long-term resilience of the EU agriculture (2022/2183(INI))	
Proposals submitted by the European Commission/ongoing processes					
6	European Green Deal – zero pollution package	Commission/ Parliament/ Council	Includes measures to improve air, water and soil quality, reducing soil nutrient losses, the use of pesticides and waste generation	Zero pollution action plan	
7	Legally-binding EU nature restoration targets	Commission/ Parliament/ Council	As part of the biodiversity strategy, the Commission has proposed setting legally-binding EU nature restoration targets to restore degraded ecosystems	Nature restoration law	
8	2040 climate target	Commission	The Commission has launched its public consultation to gather input for the impact assessment under preparation, towards a proposal to establish the EU's intermediary climate target for 2040, as required by the EU climate law	EU climate target for 2040, public consultation	
Policy suggestions from think tanks and academia/policy examples from third countries					
9	Restore the critical role of nature and healthy ecosystems in supporting sustainable agriculture	Commission/ Parliament/ Council	The Forum states that Europe does not have a food security problem. However, to address risks of access to affordable and healthy foods, the biodiversity and climate change crisis, the Forum highlights the need to: <ul style="list-style-type: none"> • Develop and scale regenerative agriculture, underpinned by common metrics. • Support farmers through knowledge sharing, technology advice and financial support for their sustainability efforts. 	Forum for the Future of Agriculture, 2023	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
			<ul style="list-style-type: none"> • Integrate sustainability in global supply chains and the agri-food trade system and ensure that the market fairly awards efforts made. • Lead the development of more coherent agri-food policies. 		
10	Ensure strong nature restoration targets and their implementation	Commission/ Parliament/ Council	<p>Civil society recommendations regarding the proposed EU nature restoration regulation:</p> <ul style="list-style-type: none"> • Ensure that all restoration targets are fully met by 2040, at the latest. • Ensure the long-term non-deterioration of restored ecosystems. • Ensure that, by 2030, at least 30 % of the EU's land and sea area are covered by effective area-based restoration measures, respectively. • Support a strong accountability framework to ensure all Member States contribute fairly and can be held accountable. • Call for dedicated nature restoration funding as part of the next EU budget. 	Joint statement from 207 civil society organisations (EEB, Client Earth, WWF, etc.)	

Managing antimicrobial-resistant infections

Clément Evroux and Luisa Antunes

The issue(s) in short: The challenge and the existing gaps

The World Health Organization (WHO) describes [antimicrobial resistance](#) (AMR) as the ability of a microorganism (for instance a bacterium, a virus, a fungus, a protozoon) to survive in the presence of a medicine designed to inhibit or kill it.

According to a 2022 [article](#) by the Lancet on the global burden of bacterial antimicrobial resistance, in 2019 1.27 million deaths were attributable to AMR. The European Commission [staff working document](#) accompanying the proposal for a Council recommendation on stepping up EU actions to combat AMR estimates that a yearly death toll of 35 000 is attributable to AMR in the EU alone. Public health authorities and experts have also referred to the spread of AMR as a '[silent pandemic](#)' that might claim up to [10 million deaths](#) by 2050. In 2019, the WHO declared AMR one of 10 global public health threats, and in 2022 the Commission identified AMR as one of three priority [health threats](#).

The interplays between microorganisms and microbial agents are not limited to the human realm: they also include animal breeding facilities and sewage infrastructure, for instance. Furthermore, such interactions and their consequences cross borders, and AMR is a phenomenon which calls for a holistic response, based on inter-sectoral and international cooperation. Monitoring and reversing antimicrobial-resistant infections is a multi-faceted challenge entailing policy responses and coordination in several sectors such as public health, agriculture, environment and research. Therefore, such an approach has been defined and operationalised under the notion of '[one health](#)' by international, EU and national authorities. It aims to promote a set of integrated policy responses balancing and optimising the health of people, animals and ecosystems.

At EU level, while some progress has been made over the last two decades on curbing the overuse and misuse of animal and agricultural antimicrobials,¹ a 2023 [study](#) for the Commission expects global consumption of antimicrobials from food to increase by 67 % between 2010 and 2030. From a public health perspective, in 2022 the European Centre for Disease Prevention and Control (ECDC) published an [assessment](#) of the health burden of infections with antibiotic-resistant bacteria in the EU/EEA between 2016 and 2020, showing the annual number of cases of infections rose from 685 433 in 2016 to 865 767 in 2020. Research policy is supporting the further understanding of different aspects of AMR, especially those to be studied further, such as the transfer of AMR across ecosystems and animals. It also facilitates the creation and dissemination of innovative solutions, both those that are technological (new sequencing of pathogens) and those that are not technological (new strategies for infection prevention).

Position of the European Parliament

During the current legislative term (2019-2024), the Parliament has deliberated over the different dimensions of AMR and the corresponding policy responses.

In its [resolution](#) of 17 September 2020 on a strategic approach to pharmaceuticals in the environment, the Parliament tackled the spread of AMR as one of the relevant challenges of the zero

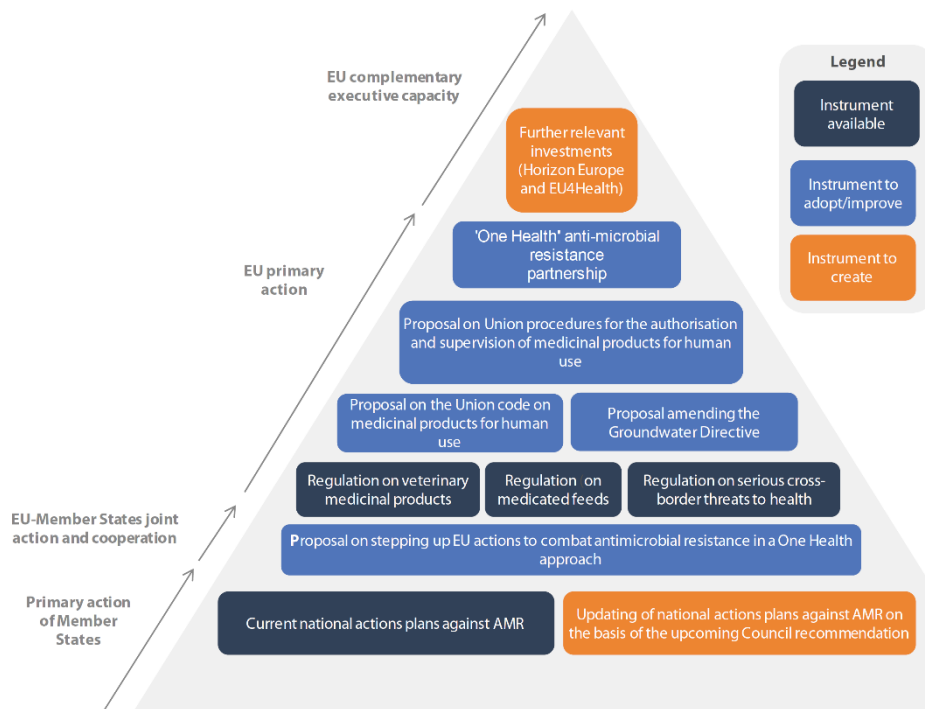
pollution action plan for water and soil, noting, in particular, the role of animal manure in the discharge of antimicrobials. The policy responses, while stressing the need for a holistic approach, identified several corresponding actions; for instance, for the pharmaceutical industry it highlighted the development of specific industry-driven principles and targets under the common antibiotic manufacturing framework, and also stressed the need to ensure the training of health professionals in the latest scientific knowledge.

In its [resolution](#) of 20 October 2021 on a farm to fork strategy for a fair, healthy and environmentally-friendly food system, the Parliament acknowledged the progress made so far across Member States to reduce the use of antimicrobials in animals, while noting the need for a further reduction. In this respect, it welcomed the Commission's plan to reduce antimicrobial sales for farmed animals (including aquaculture) by 50 % by 2030 and noted the need to improve animal husbandry practices. More broadly, the Parliament recalled the importance of a One Health approach to curb AMR, which is a transnational and cross-border health threat requiring coordinated EU action. In particular, the Parliament called on the Commission and Member States to focus on sustainable innovative solutions, not least in prevention tools and alternative treatments. It also indicated further efforts to ensure equivalent standards for products of animal origin imported into the EU to those established under the [Veterinary Medicines Regulation](#).

In its [resolution](#) of 24 November 2021 on a pharmaceutical strategy for Europe, the Parliament further substantiated its position regarding pharmaceuticals and AMR. It recalled the seriousness of the risks of AMR to public health, the environment and socioeconomic conditions; renewing its support for a One Health approach to fight AMR, it also outlined several policy options and targets on prevention and treatment. Regarding prevention, the Parliament supports the role of awareness campaigns to promote prudent use of therapeutics. It also recognises the value of vaccination among public health campaigns for the whole population aiming at the prevention of infections, as well as specific campaigns for patient and health professionals to encourage more targeted treatments based on patients' actual needs; such campaigns should be coordinated at EU level through a single calendar to optimise their reach. On the development of treatments against AMR, the Parliament stressed the need to develop new diagnostics and to create a common EU therapeutic guide for antimicrobials.

According to the Parliament, research and development investment in new pharmaceuticals should aim to cover unmet medical needs, including AMR. In this regard, the Parliament invites the Innovative Medicines Initiative and the European Investment Bank in particular to play a more active role in providing funding for such research and innovation endeavours. It has also stressed the need for the Health Emergency Preparedness and Response Authority (HERA) established by the Commission to be entrusted with commensurate resources to support the development of new therapeutics for bacterial pathogens.

Figure 44 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

The Commission [staff working document](#) mentioned above refers to the adoption in 2001 of the first [strategy](#) on AMR by the Commission. This communication referred to relevant investments under the EU framework programme for research, and was then further substantiated by specific legislative initiatives, such as [Regulation \(EC\) No 1831/2003](#) of 22 September 2003 on additives for use in animal nutrition, and the [Council Recommendation](#) of 15 November 2001 on the prudent use of antimicrobial agents in human medicine.

In 2011, the Commission adopted a communication on an [action plan](#) against the rising threats from AMR, including 12 actions on a five-year time horizon. Such actions include legislative and non-legislative initiatives, such as EU research and innovation investments, as well as coordination measures among Member States.

In 2017, following [Council conclusions](#) on developing a new and comprehensive EU action plan on AMR based on the One Health approach, and including measurable goals, the Commission adopted an [action plan](#) structured around three pillars and 15 specific objectives:

- **making the EU a best practice region**, by promoting the prudent use of antimicrobials, enhancing cross-sectoral work, improving infection prevention, and consolidating surveillance of AMR and antimicrobial consumption;
- **boosting research, development and innovation**, covering the full One Health spectrum, (addressing human, animal and plant health as well as the role of the environment), to generate new knowledge, improve science-based policies and support the creation and dissemination of solutions to prevent and/or treat AMR;
- **supporting international cooperation to shape a global agenda on AMR**, to ensure the implementation of the [WHO global action plan](#) on AMR.

The implementation of the plan has relied on several specific EU legislative initiatives as well as EU investments. In addition, the EU response to COVID-19 in public health directly supports the objectives of the EU action plan on AMR.

Specific legislative initiatives addressing AMR

The main legislative initiatives addressing AMR have been adopted as elements of various sectoral strategies aiming to accelerate the ecological transition of the EU, such as the [farm to fork strategy](#), the [zero pollution action plan](#), and the [strategic approach to pharmaceuticals in the environment](#). They include two regulations on veterinary medicinal products, which are set to reduce overall EU sales of antimicrobials by 50 % for farmed animals and in aquaculture by 2030: [Regulation \(EU\) 2019/4](#) on medicated feeds, and [Regulation \(EU\) 2019/6](#) on veterinary medicinal products. In 2022, the Commission adopted a [proposal](#) for a directive amending the directive on groundwater to include antimicrobial-resistant genes among the watch list of substances to be monitored by Member States.

The EU public health response to the COVID-19 pandemic has also embedded AMR among significant provisions of the relevant legislative initiatives. [Regulation \(EU\) 2022/2371](#) on serious cross-border threats to health includes AMR as one of these threats, to be tackled by the appropriate preparedness and response established in the text (such as stockpiling, which is the subject of a specific [assessment](#) by HERA in 2023). Also in 2023, the adoption of the [proposal](#) for a regulation laying down Union procedures for the authorisation and supervision of medicinal products for human use reinforces the relevance of AMR. Besides the development of priority antimicrobials to tackle AMR under the objective of addressing unmet medical needs, the prudent use of antimicrobials to avoid the spread of further AMR is also included among the provisions. The parallel adoption of a [proposal](#) for a directive on the Union code related to medicinal products for human use includes relevant steps to address AMR, such as the mandatory medical prescription requirement for antimicrobials, as well as the obligation to provide information on AMR on the packaging of antimicrobials.

The EU response is also addressing the [international dimension](#). In the 2022 Commission [communication on a new EU global health strategy](#), AMR is enshrined as one of the 20 guiding principles of the strategy. It will aim to promote several complementary sets of actions, such as intensifying cooperation with UN agencies (FAO, UNEP, WHO, WOA), promoting 'deep prevention' to mitigate the risk of outbreaks of pathogens and their transmission to humans, and promoting the development of and access to innovative medical countermeasures.

In focus: AMR in the WHO international instrument on pandemic prevention, preparedness and response

AMR features under the 'zero draft' [version](#), prepared for the consideration of the intergovernmental [body](#) that will negotiate the future WHO legally-binding agreement or other international instruments on pandemic prevention, preparedness and response.

Article 9 of the draft measure on increasing research and development capacities includes a point 4 that reads 'each Party should encourage non-State actors to participate in and accelerate innovative research and development for addressing novel pathogens, pathogens resistant to antimicrobial agents and emerging and re-emerging diseases with pandemic potential'.

Article 18 on One Health includes a point 7 under which each Party is required to 'develop and implement a national One Health action plan on antimicrobial resistance that strengthens antimicrobial stewardship in the human and animal sectors, optimises antimicrobial consumption, increases investment in, and promotes equitable and affordable access to, new medicines, diagnostic tools, vaccines and other interventions, strengthens infection prevention and control in health care settings and sanitation and biosecurity in livestock farms, and provides technical support to developing countries'.

Dedicated investments under the EU multiannual financial framework 2021-2027

AMR is included in the relevant EU investments on health and research in the multiannual financial framework for 2021-2027. [Regulation \(EU\) 2021/522](#) establishing 'EU4Health', the Union programme in the field of health, recognises the prudent and efficient use of antimicrobials as a specific objective of the programme. Council Decision (EU) 2021/764 establishing the specific programme implementing Horizon Europe includes AMR in two complementary areas of intervention for transnational collaborative research and innovation activities, programmed under the cluster on 'health' and the cluster on 'food, bio economy, natural resources, agriculture and environment'.² For instance, in 2024, through a €100 million EU investment, Horizon Europe will support the establishment of a joint research and innovation [partnership](#) among the key AMR stakeholders in the Member States, which is expected to ensure the creation and dissemination of knowledge.

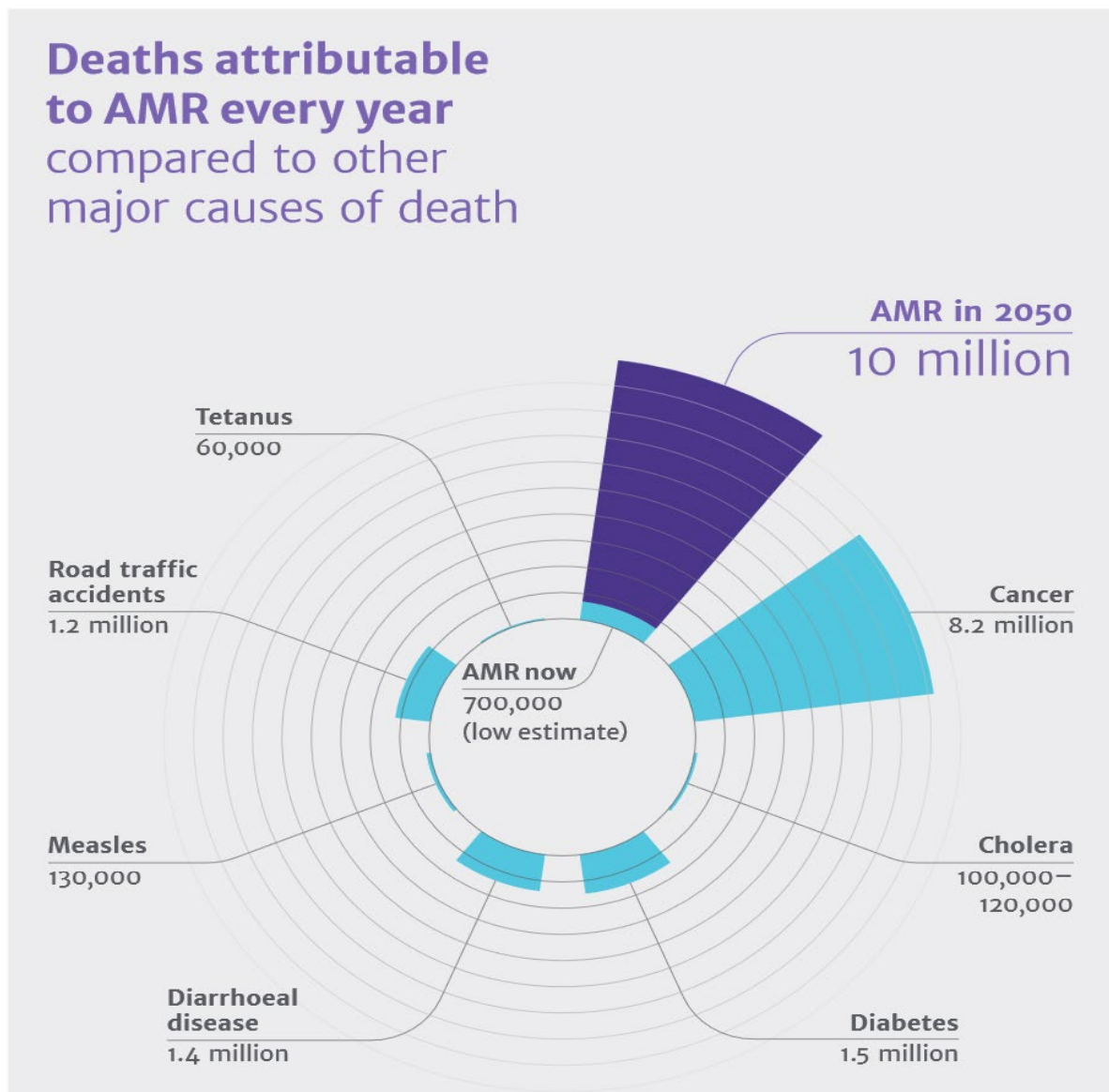
Obstacles to implementation of response

The cross-border nature of AMR, as well as the complexity of its underlying biological basis, constitute the most obvious obstacles to the effectiveness of the initiatives adopted by the EU. However, other factors of a social nature (collective and individual) also play a significant role in the capacity to curb AMR.

Research and innovation gaps

The current lack of a holistic understanding of the underlying biological basis of AMR explains a significant obstacle to curbing it. While the efforts to programme EU and Member State research investments towards One Health strategies are aiming precisely for this holistic understanding, they call not only for (at least) steady financial resources, but also for ensuring the involvement of all the relevant academic and other stakeholders in the research activities, as well as their dissemination. The [study](#) on a future proofing analysis of the 2017 AMR plan provides a set of considerations on the current obstacles in both basic and applied research. While, for instance, 'basic research has not yet led to a precise understanding of the mechanisms by which resistance is transferred', the translation of the knowledge created to design and place new treatments and diagnostics tools is still non-linear, and requires time especially for the development of new antimicrobials, as noted by the Commission staff working document mentioned above. Also, as mentioned by the same study, unlike for single-pathogen threats, such as COVID-19, there is unlikely to be a 'silver bullet' solution to AMR. For instance, in the wake of the COVID-19 pandemic the EU-funded joint action on AMR and healthcare-associated infections stressed the importance of also supporting research on [infection prevention](#), namely through behavioural science.

Figure 45 – Projections regarding the burden of AMR by 2050



Source: [Antimicrobial resistance, tackling a crisis for the health and wealth of nations](#), 2014.

Discrepancies between national responses

Another significant obstacle relates to the differences between countries, both inside and beyond the EU. Inside the EU, the Commission [staff working document](#) highlights the fact that monitoring systems are not operational in all Member States. This corresponds to a state of play where Member States' national action plans vary in scope, and targets. For instance, the 2022 overview [report](#) on Member States' One Health national action plans against AMR found that, by September 2021, four Member States still had a national action plan on AMR without proper inclusion of 'one health' (covering at least human health, animal health and, to some extent, food production and food safety). Environment has only been included in 13 national plans, and only one of them included plant health.

In addition to the differences between Member States' policy responses, another specific difficulty is constituted by the geographical discrepancies in AMR between Member States, which leads to an imbalance of burdens. The [ECDC report](#) on AMR surveillance in Europe between 2020 and 2022 mentions that 'a north-to-south and west-to-east gradient was generally observed, with higher AMR

percentages in the southern and eastern parts of Europe'. Beyond the EU, since 2015 the WHO has launched the global antimicrobial resistance and use surveillance [system](#) to facilitate surveillance around the globe and the creation of knowledge through cooperation.

Education gaps across societies

Education is another significant challenge to fighting AMR. In February and March 2022, [Special Eurobarometer 522](#) focused on AMR, with over 26 500 people interviewed across the Member States. In general, the understanding of the basic functioning of antimicrobial agents is still limited, with only 50 % of the interviewees giving the right answer to the closed question on whether antibiotics kill viruses; a majority of interviewees answered correctly in 15 Member States. Beyond human health, knowledge of the EU legislative measures are not satisfactory across Europe; in only six Member States were the majority of interviewees aware that using antibiotics to stimulate growth is banned within the EU.

Policy gaps and pathway proposals

The AMR policy response can count on the expertise and interest of a wide range of stakeholders.

Scientific communities have structured a transnational platform to design common activities and to facilitate the translation of research into evidence-based policymaking. For instance, the joint programming initiative on AMR ('JPI AMR') gathers national scientific experts from 28 participating states, including 15 EU Member States. In 2021, it adopted a strategic research and innovation [agenda](#) to align relevant national programmes (as well as the EU research and innovation framework programmes) around six main targets: therapeutics, diagnostics, surveillance, transmission, environment and interventions. Each target is also substantiated by further scientific and communication activities. For instance, specific discussions on [vaccination](#) indicate the relevance of vaccines as a useful therapeutic solution: vaccination can either target common infections for which antibiotics are commonly used, or pathogens that often develop resistance to drugs. In addition, it is reported that vaccination programmes are also effective in promoting the prudent use of antibiotics. In a 2022 scientific publication, '[Nordic vets against AMR](#)', a group of academics and scientific practitioners stress the need to provide for mandatory training on the AMR regulatory and policy framework for all veterinary students across the EU.

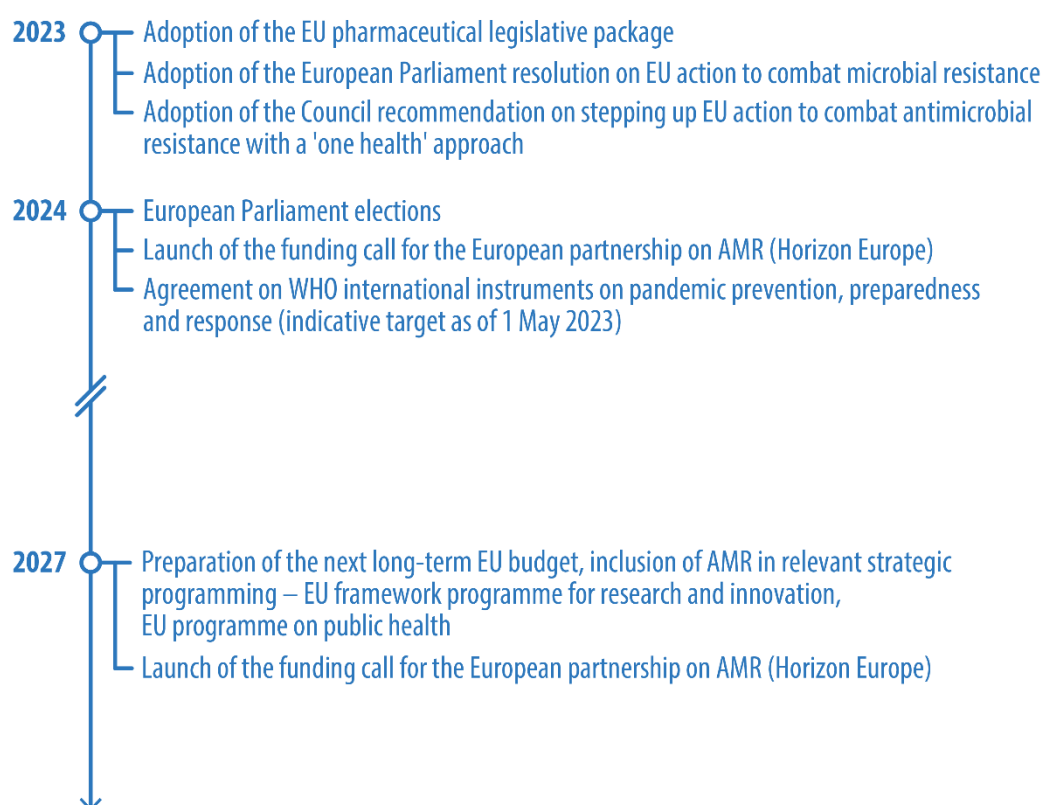
Healthcare staff are also involved in the public debate across the EU and across various professional activities and roles. In a 2023 [article](#) on closing the gaps in tackling AMR, Hospital Healthcare Europe considers that tackling AMR is necessary to achieve the European Health Union and that it requires, in particular, the ability to commit resources (financial, skills) over the long term. It also considers that such an approach might be beneficial for healthcare policies by improving their proactive dimension, offering a balance with the short timeframe associated with the reactive dimension of such policies. Other health professionals convey complementary messages to support their commitment to AMR policy design and implementation. For instance, in 2020 the European Federation of Nurses Associations published a [message](#) on the European antibiotic awareness day, to highlight the key role of nurses in infection prevention both in care premises and, beyond them, across local communities.

Patient organisations also contribute actively to informing the public debate on AMR. For instance, in 2022, the European Patients Forum issued a [statement](#) which fed into the Commission's proposal for a Council recommendation on AMR. While noting in general that tackling AMR is especially key for patients with chronic conditions, it calls for strengthening patients' awareness of their health conditions, not least by ensuring substantial investments for faster and more accurate diagnostics. It also stresses the need to reinforce patients' literacy, through complementary approaches such as

patient-centred practices by antimicrobial prescribers, or by leveraging the information dissemination capacities of patient organisations. Patients and medical communities active in rare diseases have also pointed to the specific [extra risks](#) of AMR for patients with such health conditions.

Several sectors in **industry** are also committed to contributing to the discussion on AMR, including the European Federation of Pharmaceutical Industries and Associations (EFPIA). At the beginning of the current European Parliament's legislative term, EFPIA addressed, together with 16 other civil society organisations and industry stakeholders, a [letter](#) to the Members of the Parliament. The letter presented AMR as a complex and major health threat, inviting the Members to include it as a priority topic across their interinstitutional activities. In a 2021 recommendation [paper](#), EFPIA pointed to the low number of antimicrobials available on the market, and the need to provide financial and regulatory incentives for the development of new ones. The creation of a legal scheme extending the intellectual property protection of such new AMR therapeutics is one of the main proposals brought forward. In addition, agrifood professionals also inform the debate. In a 2022 [statement](#) at an event organised by two Members of the Parliament, the chair of the European platform for the responsible use of medicines in animals mentioned that it is necessary to use antibiotics as little as possible, but as much as necessary.

Figure 46 – Timeline of measures to tackle antimicrobial infections



Source: EPRS.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Coordination of vaccination campaigns	National health authorities	The European Parliament recognises the value of vaccination among public health campaigns for the whole population aiming at the prevention of infections. Such campaigns should be coordinated at EU level through a single calendar to optimise their reach.	EP Resolution of 24 November 2021 on a pharmaceutical strategy for Europe	
Proposals submitted by the European Commission/ongoing processes					
2	Regulation (EU) 2019/6 on veterinary medicinal products	Commission/ Parliament/ Council	Implementation	Regulation (EU) 2019/6	
3	Regulation (EU) 2019/4 on medicated feeds	Commission/ Parliament/ Council	Implementation	Regulation (EU) 2019/4	
4	Regulation (EU) 2022/2371 on serious cross-border threats to health	Commission/ Parliament/ Council	Implementation	Regulation (EU) 2022/2371	
5	Proposal COM(2023) 192 for a directive on the Union code related to medicinal products for human use	Commission/ Parliament/ Council	Finalise the legislative examination	COM(2023) 192	
6	Proposal COM(2023) 193 for a regulation (EU) laying down Union procedures for the authorisation and supervision of medicinal products for human use	Commission/ Parliament/ Council	Finalise the legislative examination	COM(2023) 193	
7	Proposal COM(2022) 540 for a directive amending the directive on groundwater	Commission/ Parliament/ Council	Finalise the legislative examination	COM(2022) 540	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
8	Proposal COM(2023) 191 for a Council recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach	Commission/ Council (upon Parliament's consent)	Implementation by Member States and the EU	Council Recommendation	
Policy suggestions from think tanks and academia/policy examples from third countries					
9	Incentivising the creation and commercialisation of AMR medical countermeasures	European Federation of Pharmaceutical Industries and Associations (EFPIA)	Provide financial and regulatory incentives for the development and commercialisation of new antimicrobials, through public investment in R&I as well as through regulatory measures such as the creation of specific IP schemes	EFPIA paper	

¹ A 2022 joint briefing [note](#) by the OECD, the ECDC, the EFSA and the EMA reports a 43 % decrease in antibiotic consumption among food-processing animals in 25 EU/EEA countries from 2011 to 2020.

² 'Combating antimicrobial resistance, including epidemiology, prevention and diagnosis, as well as the development of new antimicrobials and vaccines', under the cluster on health; 'Antimicrobial resistance and threats from biological and agrochemical hazards, including pesticides, as well as chemical contaminants tackling the links between the health of plants, animals, ecosystems and the public from One Health and Global Health perspectives', under the cluster on food, bio economy, natural resources, agriculture and environment.

De-risking Europe's global critical supply chains

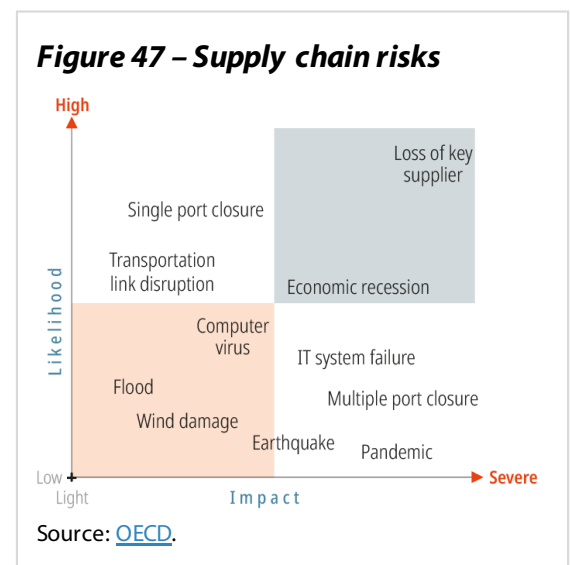
Marcin Szczepański

The issue(s) in short: The challenge and the existing gaps

The hardening [geopolitical environment](#), rising protectionism and the pandemic have led to increased prominence of the [debate](#) on decoupling supply chains in order to increase their [resilience](#). Recently, the tone of this debate has shifted to [de-risking](#) (particularly in the context of relations with [China](#)), which points towards a more nuanced way of ensuring Europe's ambitions for [increased resilience](#) and strategic autonomy in its supply chains. It can be [achieved](#) by increasing domestic production, greater autonomy in critical raw materials (CRMs), use of trade tools and cooperation on the global stage. Such de-risking is becoming increasingly prioritised, so that the EU avoids overdependence on third countries, particularly on [coercive](#) or [hostile](#) authoritarian states. This is especially the case for green and digital technologies, which are quickly becoming the main determinant of long-term resilience and competitiveness. For example, China provides 100% of the EU's supply of [heavy rare earth elements](#), which are key components of electric vehicles' motors and wind turbines, two key technologies to deliver on the EU's green transition. Particular [vulnerabilities](#) exist in the [CRM](#) supply chains, but they are also spread across the [clean tech industry](#) that is crucial for the EU's future.

The EU is an open economy, reliant on global supply chains to a greater [extent](#) than the US and China. At the same time these [complex chains](#) are subject to increasing disruptions and uncertainties, with many areas of fragility. This exposes the fundamental vulnerability of the EU's industry and economy to the adverse effect of segmented and non-diversified key supply chains. As manifested during the pandemic, maintaining sustainable supplies of resources, goods and services is crucial, even when supply chains are severely disrupted by unexpected events. However, as the critical supply chains are global in nature and inherently complex, they are particularly exposed to precisely this type of unexpected and/or rapidly occurring event. Disruptions may be caused by [natural](#) and [man-made](#) disasters, [geopolitical uncertainties](#), inter-state and inter-regional [conflicts](#), [cyber-attacks](#), [health crises](#), [labour shortages](#), [new technologies](#), macroeconomic developments such as [inflation](#) or [recession](#), or [intentional actions](#) such as terrorist attacks, sabotage, or blockages by activists. The bulk of risk-mitigating strategies focus on preventing severe risks that have a high likelihood of occurrence, which constitutes a weakness in itself for these approaches.

As the COVID-19 pandemic has demonstrated, there is a [policy gap](#) regarding measures that can be used to address severe risks with a low likelihood of occurrence (Figure 47). All in all, supply risks are compounded by the evolving wider circumstances, such as [escalating tensions](#) among the great powers (such as a US-China [trade war](#)), challenges to [multilateralism](#), crisis at the [WTO](#), slowing



[globalisation](#), the rise of [protectionism](#), weaponisation of energy dependencies, growing [demand](#), and the increasing use of economic tools to advance [geopolitical objectives](#).

Position of the European Parliament

The Parliament is also a longstanding [proponent](#) of holistic, cross-policy approaches to solving complex issues of supply chain risks.

In its [resolution](#) of February 2023 on an EU strategy to boost industrial competitiveness, trade and quality jobs, the Parliament called on the Commission to assess current dependencies and find alternative sources to diversify supply chains for critical technologies and raw materials. It also highlighted the need for improved coordination and joint efforts to create resilient supply chains. The Parliament is a supporter of the idea of a [European Sovereignty Fund](#) – mobilising investments across the key sectors, including raw materials, to support the twin green and digital transition – and also encourages the Commission to help diversify supply chains.

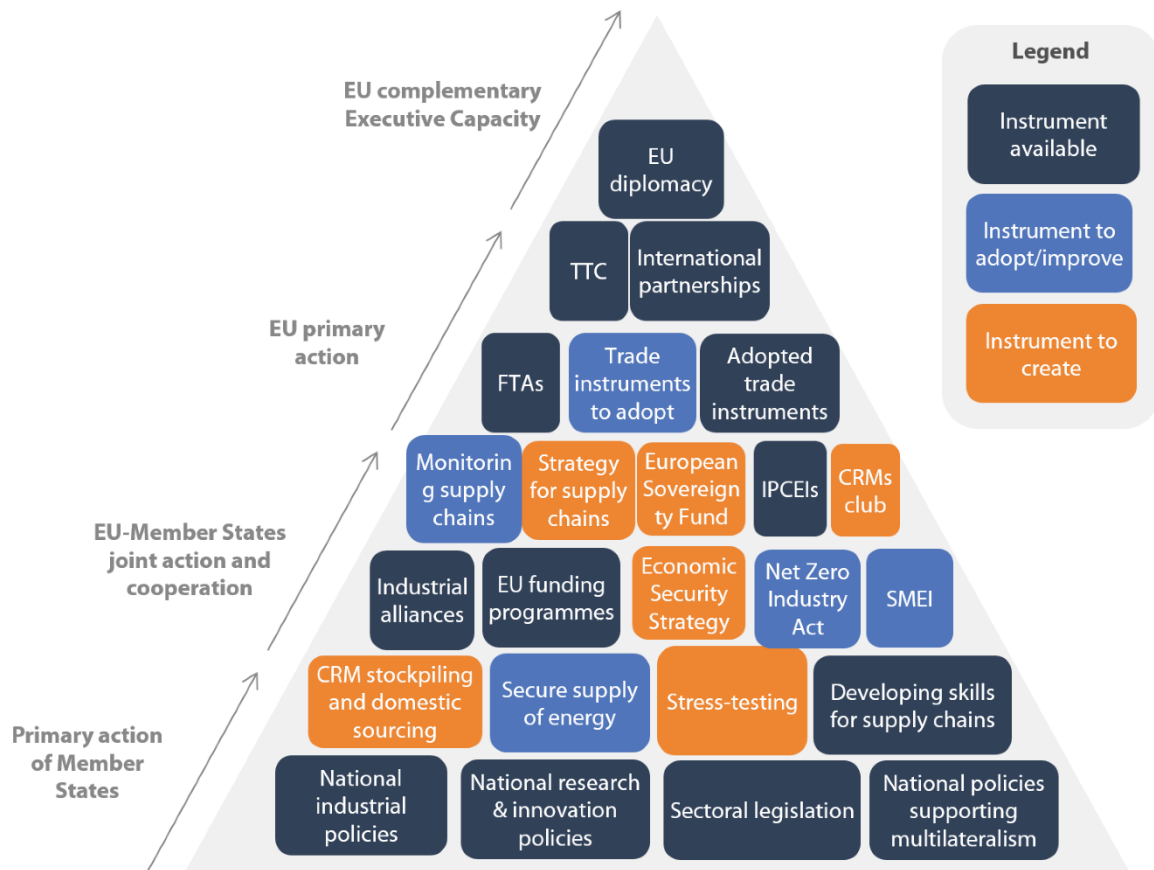
In its [resolution](#) of November 2020 on a new industrial strategy for Europe, the Parliament stressed the need for significant investment in key value chains. To reduce over-reliance on a few markets and increase resilience, it also recommended strengthening, shortening, and diversification of supply chains (also through strategic use of public procurement) as well as increasing their sustainability. It called on the Commission to include, in its recovery plan, concrete measures to attract industries to Europe, and to increase, strengthen and promote relocation and diversification of strategically important EU industries. It also asked for a review of the antitrust rules, seeking a balance between the need to cope with global-scale competition and the protection of the supply chains.

In its [resolution](#) of November 2021 on a European strategy for CRMs, the Parliament stated that an integrated approach throughout the value chain, from waste collection and product design for recyclability to material recovery, is an essential strategy to increase their supply. It called for funding to support research and innovation and skills development. To reduce criticality and dependence, it also called for the establishment of an Important Project of Common European Interest (IPCEI) on CRMs and recommended diversifying supply sources and launching responsible and sustainable mining of CRMs in the EU. The Parliament is also a supporter of transparency and accountability in supply chains.

In its [resolution](#) of March 2021 on corporate due diligence, the Parliament advocated the prohibition of imports of products related to severe human rights violations. It wished to see rules in place allowing for effective due diligence of supply chains by the importing firms, to ensure that products that they place on the internal market are in conformity with environmental standards and human rights; [due diligence](#) helps to identify and mitigate risks along supply chains.

In its resolution of 16 September 2021 on a new EU-China strategy, MEPs highlighted that the EU is particularly dependent on [China](#) in some key supply chains and advocated mitigating this and investigating the use of forced labour in the supply chains of European companies in China.

Figure 48 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

Increasing [resilience](#) of global critical supply chains has been carried out so far through a mix of domestic and external policy measures. The 2020 new industrial strategy for Europe focuses on the monitoring and support of [key industrial ecosystems](#).

The particularly pressing issue of **CRM** supply is tackled in a multipronged way. The 2020 [action plan](#) focused on: (i) developing resilient value chains for EU industrial ecosystems; (ii) reducing dependency on primary CRMs through circular use of resources, investment in research and innovation, and more sustainable products; (iii) promoting sustainable and responsible domestic sourcing and processing of raw materials in the EU; and (iv) [diversification of supply](#) coming from third countries. The plan resulted in the establishment of a European raw materials alliance ([ERMA](#)), a dedicated industrial alliance to address the numerous challenges faced in raw materials value chains. Its mission is to close the gaps in existing supply chains, securing access to CRMs and other advanced materials and 'breaking' deficiencies such as the lack of technologies, capabilities and skills in the EU. Similarly, [EIT RawMaterials](#) works on securing a sustainable raw materials supply by driving innovation, education and entrepreneurship across European industrial ecosystems.

The EU can also de-risk key supply chains by **expanding domestic production and technological breakthroughs**. To achieve this, it has deployed dedicated [industrial alliances](#) at EU level and approved [IPCEIs](#) which strive to achieve the scale and vision needed to overcome persisting industrial weaknesses. The former bring together multiple stakeholders in an industry and its value chains to facilitate stronger cooperation and joint action. Currently they exist for [raw materials](#),

[aviation](#), [photovoltaics](#), [hydrogen](#), [batteries](#), [circular plastics](#), [industrial data](#), [edge and cloud](#), [processors and semiconductor technologies](#) and [renewable and low-carbon fuels](#). The latter are a state aid tool, allowing for large amounts of public funding to help Member States and industry to jointly overcome market failures or societal challenges, by setting up ambitious EU-wide projects. So far, they [include](#) two IPCEIs on microelectronics, two on batteries and two on hydrogen.

These efforts run in parallel with **sectoral regulations**, most notably the recently agreed [European Chips Act](#) that [aims](#) to boost technological capacity and innovation in the EU and enhance manufacturing capacities, and which introduces a mechanism to monitor and mitigate shortages in the field of semiconductors. Furthermore, the [battery regulation](#) will enable sourcing of valuable raw materials from waste batteries, contributing to [security of supply](#) in batteries. In another crucial field, the Commission tabled new [pharmaceutical legislation](#) in April 2023 that aims to address systemic shortages and supply chain challenges.

The war in Ukraine has put the spotlight on the issue of security of **energy supply**. However, even before the war, the 2015 [Energy Union](#) focused on reducing dependencies from import and supply chain vulnerabilities, notably in 2017, when the EU adopted the [Security of Gas Supply Regulation](#). The 2021 [gas package](#) proposal aimed to make energy storage part of Member States' assessments of security of supply risks and to facilitate the voluntary joint procurement of strategic stocks. This was followed by the 2022 [REPowerEU](#) plan, which set out to make Europe independent from Russian fossil fuels by diversifying supply and increasing the use of [liquefied natural gas](#). These initiatives are complemented by efforts to develop [renewable hydrogen](#) as an energy source and reduce the EU's dependence on fossil fuels and its energy supply chain vulnerabilities.

Regarding **financial support**, the [InvestEU programme](#) provides long-term funding to back activities of strategic importance to the EU, including those targeted at enhancing resilience and strengthening strategic value chains; examples include promoting on-shoring and developing sustainable capacities, abroad and domestically. It is expected to mobilise at least €372 billion of public and private investment. The [Recovery and Resilience Facility](#), with its €724 billion financial envelope, also funds the implementation of reforms and investments in digital technologies and infrastructure, which will increase the EU's global competitiveness and make it more autonomous, resilient, innovative and less dependent – by diversifying key supply chains. There is also a host of EU programmes supporting research and innovation efforts as well as infrastructure to reduce strategic dependencies, which, together with boosting cybersecurity, also have de-risking effects on key supply chains. These include [Horizon Europe](#), the [Connecting Europe Facility](#), [Digital Europe](#), the [European Defence Fund](#), the [Innovation Fund](#) and the [European space programme](#), in addition to financing from the [European Investment Bank](#).

Shifting to **trade instruments**, a May 2023 [European Parliament study](#) examines their role in increasing security of critical global value chains for key raw materials, commodities and goods. It concludes that most recent legislative acts play a role in securing existing supply chains: the [FDI screening framework](#) and the [anti-coercion instrument](#) are focused solely on this. Other instruments also have supplementary purposes: apart from securing the key supply chains, they help to develop their sustainable capacities (the [Foreign Subsidies Regulation](#), the proposal for a [Directive on Corporate Sustainability Due Diligence](#), [CBAM](#)), to diversify foreign sources (the [International Procurement Instrument](#)), or to safeguard the implementation of trade agreements, which also has an impact on supply chains (the [Enforcement Regulation](#)).

Regarding **free trade agreements** (FTAs), those already in force cover around 27% of CRM imports, while those waiting for ratification or under negotiation may allow for more than double this coverage. The study also analysed the texts of recently signed FTAs and the proposed texts of those under negotiation, and found that the EU insists on including various measures such as an explicit

chapter for trade and cooperation relating to energy and raw materials in reference to supply chain vulnerabilities and risks. On the other hand, another recent study for the ITRE Committee takes a more [critical stance](#) and sees limited scope for FTAs to influence significantly the EU's CRM dependencies.

In terms of **international agreements**, the EU has deployed [raw materials diplomacy](#) to improve supply chains for over a decade. Recently, it concluded two strategic partnerships with [Canada](#) and [Ukraine](#) on raw materials. This was followed by a [strategic partnership with Namibia](#) on sustainable raw materials and renewable hydrogen, a [strategic partnership with Kazakhstan](#) on raw materials, batteries and renewable hydrogen, and a [strategic partnership on renewable hydrogen and preparing the ground for a just energy transition](#) in Egypt. An important shared goal of these agreements is the integration of value chains. In July 2022, the EU and some of its Member States released a [joint statement](#) with 13 other major economies pledging cooperation on supply chains based on transparency, diversification, security and sustainability. This was followed by the efforts to enhance strategic coordination in the [G7 format](#) to support resilient and sustainable value chains. In addition, the EU launched three [digital partnerships](#) with Japan, South Korea and Singapore that aim to reinforce crucial global supply chains. The EU has also engaged with [Latin America](#) and the Caribbean, prioritising issues of supply chains and CRMs in its [new agenda](#) for these regions. A similar strategic focus was taken in its agendas for [Africa](#) and the [Southern Neighbourhood](#). In June 2023, the Commission proposed to start formal negotiations with the US on the [Critical Minerals Agreement](#) to foster the supply chains of CRMs needed in the production of EV batteries.

One of the strategic priorities of the [EU-US Trade and Technology Council](#) (TTC) is to improve resilience of strategic supply chains. The partners identified [common vulnerabilities](#) in supply chains for solar panels and initial cooperative steps to address them, such as promoting supply chain transparency, and joint work on project development and the design of financing tools. Both sides also identified shared risks in supply chains for rare earth magnets and announced possibilities for future collaboration in research and development in areas such as mining and recycling. Importantly, they launched an early warning mechanism to address and mitigate semiconductor [supply chain disruptions](#) through cooperation. They also committed to unprecedented levels of reciprocal transparency on semiconductor subsidies, to avoid a subsidy race. In May 2023, the [EU-India TTC](#) had its first meeting and announced the deepening of joint work on resilient value chains.

Figure 49 – Timeline of measures to de-risk Europe's global critical supply chains



Source: EPRS.

Obstacles to implementation of response

Complex global supply chains take a considerable time to establish, and during this process their integration deepens. This, in effect, means that they are not very [flexible](#) and are difficult to reconfigure. However, unforeseen events may unfold quickly, leading to sudden materialisation of supply chain risks. At the same time, many of the policy responses described above will take a long time to implement: increasing domestic capacity, improving infrastructure and developing new skills for the workforce are not quick fixes. In addition, significant [opposition](#) exists to mining activities in Europe. This is in stark contrast to China, whose [economic nationalism](#) is manifested by its determination to further dominate the global supply chains for raw materials.

Furthermore, the main actors in control of many key supply chains are [private enterprises](#) that may not share the same objectives as, or may assess the risks differently to, public bodies. They are also more likely to take into consideration short-term economic parameters instead of geopolitical concerns. As supply chains are increasingly being affected and shaped by new disruptive forces, ranging from the rise of new technologies to changing geopolitical circumstances, the risk of policy not catching up with the unfolding reality is higher than ever. It could also go the other way, where realistic timeframes for reconfiguring supply chains make it impossible to [deliver](#) the prompt responses expected by political decision-makers, despite policy frameworks being in place. This is particularly risky where chains are long and complex, which makes it difficult to understand them and to map their risks correctly. Slow political decision-making can indeed be a risk in itself when confronted with rapid risk materialisation.

Since the global supply chains are facing a rising number of multiple dynamic challenges, their de-risking is based on a holistic approach implemented across various policy fields. They also vary significantly depending on their deliverables or objectives. For example, energy supply chains are

fundamentally different to semiconductor supply chains. This creates its own [challenges](#): coordinating efforts in multiple areas and subjects is complicated and difficult to oversee strategically. Setting clear monitoring frameworks is also challenging. Similarly, the funding programmes which are focused on very different areas may miss closing the [funding gaps](#): linking financing areas such as infrastructure, digitalisation, innovation and skills in a coherent way is complex.

The very fundamental concepts behind supply chain security remain debated and point to the careful balancing act that is needed if the policy is to be effective. The [trade policy review](#) mentioned the need to understand 'the right policy mix in terms of diversification of domestic and external sources of supply and the build-up of strategic production capacities and reserve'. Similarly, there is a longstanding debate on [efficiency vs resilience](#) of supply chains: efficiency is pivotal to compete in a fiercely contested business landscape, whereas resilience is required to shield the supply chain from unforeseen disruptions. Furthermore, the implementation of the majority of the trade legislation mentioned above depends on action by both the EU institutions and signatories (e.g. Member States). This reliance on collaborative effort poses risks to their [efficiency](#) – actions dependent only on EU activity can be less complex to launch and enforce. Many actions also contain recommendations or requests for best efforts, not just the legally enforceable provisions.

The [global demand](#) for CRMs is highly likely to skyrocket in the future, and it is uncertain whether supply will be able to keep up. This may make diversification of supply chains even more difficult, since there will be more actors interested in competing for the finite number of resources. This even concerns countries that the EU considers allies: a sign of things to come may be the recent tensions around the [US Inflation Reduction Act](#). Further on in transatlantic relations, the TTC may fail to deliver on its ambitious cooperative agenda or even cease to exist if the [US elections](#) in 2024 bring about a change of power. There are also important nuances in the approach of both sides to China, which may diminish the TTC's effectiveness. As the TTC progresses not through major breakthroughs but in incremental steps, it may not deliver on reducing both partners' strategic dependencies in supply chains before business and policymakers lose interest in influencing difficult industrial adjustments through this transatlantic forum.

The global framework conditions are also becoming more and more difficult. To de-risk its key global supply chains, the EU relies on the openness of the global trade system. This is because, by bolstering and diversifying its trade, the EU [strengthens](#) its position in these chains. Diversifying import sources is also key to ensuring that the EU meets its need for crucial goods, materials and production inputs; this is easier to achieve using multilateral cooperation and coordination. However, many share the view that, with the mounting tensions in the world, multilateralism is in [crisis](#), an oft-mentioned symptom of this being a [weakened WTO](#). As worldwide trade and financial flows have fallen below their [peaks](#), the globalisation process has slowed down, and different supply chain actors may have found themselves in conflicting or competing geopolitical camps. Working via fora such as the G20 and WTO to monitor and sustain supply networks has become ever more challenging, in which context the election of the next US President in 2024 will be of fundamental importance.

In focus: Strategic dependencies and critical supply chains

In May 2021, the Commission published an update to its [new industrial strategy](#), accompanied by an analysis of the EU's [strategic dependencies](#). It reviewed 5 200 imported products and identified 137 products in sensitive ecosystems for which the EU is highly dependent on external suppliers. About a quarter of these (34 products) are very vulnerable, given their low potential for diversification and substitution by EU products. The EU imports about half of these products from China (52 %), followed by Vietnam (11 %) and Brazil (5 %). The report also included six in-depth reviews of supply chains in strategic areas characterised by prevalent use of these materials: active pharmaceutical ingredients (APIs); batteries; hydrogen; raw materials; semiconductors; and cloud and edge technologies. Important dependencies vis-à-vis China particularly concern APIs, CRMs and products needed for the green and digital transition. The updated industrial strategy suggests that, where common dependencies exist, 'the EU may choose to pool resources and build stronger and more diverse alternative supply chains with our closest allies and partners'.

In February 2022, the Commission published the second edition of an in-depth analysis of Europe's [strategic dependencies](#). The report examined a further five areas – rare earths and magnesium, solar panels, chemicals, cybersecurity and IT software – and concluded that, for the first three areas, vulnerabilities are driven by a strong concentration of global production in China, with limited options for supply diversification, including from within the EU. The March 2023 assessment of supply chain dependencies for 15 [critical technologies](#) across five strategic sectors (renewable energy; electric mobility; industry; information and communication technologies (ICT); and aerospace and defence) determined strong vulnerabilities along all these supply chains. As many as 53 of the 70 steps examined in the chains showed vulnerability. However, as the supply chain got closer to the finished products these vulnerabilities diminished, underlining that the EU is weak in raw materials but strong in manufacturing of the final technologies. On the other hand, five technologies (batteries; solar PV; data storage and servers; smartphones, tablets and laptops; and drones) show vulnerability along the entire supply chain, thus highlighting the EU's dependency even in the case of final products.

Policy gaps and pathway proposals

EU industry faces numerous challenges created by supply chain disruptions, which are coupled with high inflation, labour shortages, rising interest rates, and spikes in energy costs and input prices, as well as strong and sometimes unfair global competition. To address them in a strategic and structured way the Commission proposed in June 2023 [the Strategic Technologies for Europe Platform \('STEP'\)](#). The **STEP** will increase (by €10 billion) and leverage existing EU instruments financial envelopes to swiftly deploy financial support for investments in critical technologies. The Commission is expecting that this will lead to total additional investments of up to €110 billion. The STEP aims to direct funding towards strategic technology fields to boost their uptake and scaling up their development and manufacturing, particularly of the digital and deep tech, clean tech and biotech.

On 16 March 2023, as part of its [Green Deal Industrial Plan](#), the Commission adopted a proposal for a [regulation on CRMs](#). The Critical Raw Materials Act introduces the concept of [strategic raw materials](#) (SRMs), which are pivotal for strategic technologies underpinning the green and digital transitions and prone to shortages. The proposed regulation aims to establish a framework ensuring the EU's access to a secure and sustainable supply of CRMs. To achieve this, the proposal focuses on four objectives: (i) boosting the SRM value chain; (ii) diversifying imports of SRMs (so that, by 2030, no third country would supply more than 65 % of the EU's annual consumption of each SRM); (iii) enhancing the monitoring and mitigation of CRM supply risks; (iv) ensuring the free movement of CRMs and products containing CRMs in the single market as well as a high level of environmental protection, through better circularity and sustainability.

The March 2023 [Net-Zero Industry Act](#) has as one of its key goals improving the security of supply for **net-zero technologies** and fostering investment in their supply chains. The accompanying [communication](#) promotes the role of trade in de-risking supply chains by supporting trade openness and sustainable investments, and launching new initiatives with like-minded partners. The temporary [state aid framework](#) has been extended until 2025 (and transformed into a 'temporary crisis and transition framework') to support the actions in the Act. The proposed [regulation](#) introduced a requirement that the projects supported would need to either (i) contribute to the technological and industrial resilience of the EU's energy system by increasing the manufacturing capacity of a component or a part of the value chain for which the EU depends heavily on imports coming from a single third country, or (ii) have a positive impact on the EU's net-zero industry supply chain by contributing to the competitiveness of and creation of quality jobs in this supply chain.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Establish an IPCEI on CRMs	Member States/ Commission	Plan for the EU's demand for the twin transitions, reduce criticality and dependence Unlock unfulfilled potential in CRM-rich EU Member States	Parliament resolution on a European strategy for CRMs	
2	Develop an EU-level supply chain strategy	Commission	Develop an effective strategy to redeploy, relocate and re-shore industries in Europe, diversifying supply chains and reducing greenhouse gas emissions	Parliament resolution on industrial competitiveness	
Proposals submitted by the European Commission/ongoing processes					
3	European Sovereignty Fund	Commission/ Parliament/ Council	European Sovereignty Fund to be established during the mid-term review of the multiannual financial framework (MFF). This would support not only clean-tech, but also strategic sectors and supply chains. On 20 June 2023, the Commission proposed a Strategic Technologies for Europe Platform (STEP) to support European leadership on critical technologies	Parliament resolution on industrial competitiveness	
4	Establish a critical raw materials club	Commission	Bring together raw material 'consumers' and resource-rich countries to improve management of supply chains	Communication on a Green Deal Industrial Plan	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
5	CRM Act	Commission/ Parliament/ Council	Set of actions to ensure the EU's access to a secure, diversified, affordable and sustainable supply of critical raw materials	Ongoing	
6	Corporate sustainability due diligence	Commission/ Parliament/ Council	Promote EU values in global supply chains	Ongoing	
7	Economic security strategy	Commission	Mapping out where to strengthen economic security and how to better use the trade and tech security tools	President von der Leyen's speech on de-risking relations with China	
8	EU-US Trade and Technology Council	Commission/ US administration	Working together on increasing resilience of key supply chains	Ongoing	
9	Advance FTAs to promote free trade and improve the EU's position in global supply chains	Commission/ Foreign governments	Conclude negotiations with Australia, make significant progress with India and Indonesia Commission to seek to make progress with Mercosur and look for partners in the Indo-Pacific	Ongoing	
Policy suggestions from think tanks and academia/policy examples from third countries					
10	Binding international agreements on supply chains	Commission/ Foreign governments/ EU and foreign stakeholders	Concluding formal international agreements, particularly for research and innovation relevant to supply chains. Agreements should lead to the creation of networks and institutions.	Policy recommendations for supporting supply chains with horizontal actions (2021)	
11	Stress-testing essential supply chains	National authorities/ Private sector	Companies to quantify the cost of supply chain disruptions under different scenarios, and to prepare mitigation plans	US and European strategies for resilient supply chains (Chatham House 2021) Part of the CRM Act	
12	Using the Global Gateway to invest in supply chains	Commission/ Foreign governments/ EU and foreign stakeholders	Promote investment in infrastructure and projects, particularly those that diversify mining and – crucially – refining of CRMs outside the EU	Bruegel (2023)	

Delivering economic recovery and resilience

Martin Höflmayr and Magdalena Sapala

The issue(s) in short: The challenge and the existing gaps

The pandemic, the war in Ukraine and related supply shocks have tested Europe's economic resilience and simultaneously increased the pressure to respond to critical challenges. They range from the need to accelerate the green and digital transition, diversifying energy supplies, to the necessity to provide support to Ukraine. To address them, the EU uses existing and newly created initiatives. Prominent among these are the Next Generation EU (NGEU) post-pandemic recovery instrument, with a rich package of reform and investment under the Recovery and Resilience Facility (RRF), and the REPowerEU plan to reduce energy dependence on Russian fossil fuels. Further ambitious projects, such as the [Green Deal Industrial Plan](#) supporting investments for a clean energy economy and the European Sovereignty Fund (see box below), are also in the [pipeline](#). For Ukraine, the EU has [mobilised](#) significant political, humanitarian, economic and military assistance and, by granting it EU [candidate](#) status, has opened a path towards the future recovery and reconstruction of the country.

All these initiatives require substantial, and increased, financial expenditure. As a result, there is a multi-dimensional pressure on the EU's financial capacity to act. Although the budgetary [package](#) agreed under the 2021-2027 multiannual financial framework (MFF) and NGEU is unprecedented in terms of size (€1 210.9 billion and €806.9 billion respectively), and partly based on common borrowing, it is under severe strain and might be insufficient. To avoid the financing gap and thereby safeguard its capacity to effectively respond to internal and global challenges, the EU needs solid solutions and progress in terms of new own resources (OR), innovative financing mechanisms, an adequate fiscal framework and perhaps a complementary central fiscal capacity.

Even before the NGEU-related borrowing, there had been an ongoing [debate on the reform](#) of the EU system of OR, a key goal being to limit the share of OR based on Gross National Income (GNI) and to align the OR system better with EU policies; while [new OR](#) were already proposed back in December 2021, to date there has not been substantial progress. Making borrowing-based financing, modelled after NGEU, a permanent feature of EU funding for common strategic goods, such as energy security or defence, had been mentioned as a [possible option](#) even before the outbreak of the war in Ukraine. Now, the debate on the EU financial architecture is intensifying with the European Commission's proposal for the [revision](#) of the 2021-2027 MFF and an adjusted [package](#) of new OR that the Commission announced in June 2023.

The debate on the EU's financial resources and expenditure is taking place against the backdrop of a challenging economic environment. After an unexpectedly strong economic recovery from the COVID-19 pandemic, the economic momentum came to a premature halt. Due to the war in Ukraine, energy prices increased significantly and contributed to inflation rates rising to double digits towards the end of 2022, significantly above the European Central Bank's 2% inflation target. This has left the EU facing a difficult balancing act – to bring down inflation while sustaining economic growth.

However, the Commission's spring 2023 economic [forecast](#) has seen upward revisions for 2023, with growth projected to reach 1 %, and 1.7 % in 2024. At the same time, the latest inflation numbers point to a broad-based decline of price components, although from an elevated level, as all four main categories of goods and services contributed to the fall in inflation in the euro area, to 6.1 % in May 2023. Playing into both variables, growth and inflation, are unprecedented fiscal efforts to cushion the impact of past crises; as economic tailwinds fade, governments' fiscal plans point to future consolidation efforts. In this context, on 26 April 2023 the Commission published a [package of three proposals](#) to revise the EU's economic governance framework, shaped by the trade-off between reducing higher and more dispersed public debt levels and the need for sustained public investment.

EU policy responses (Commission and Council responses so far)

The European economy is undergoing unprecedented transformation towards a more sustainable, green and digital economy, while at the same time facing the challenges related to the war in Ukraine. Both require ambitious investments and reforms. The recovery from the COVID-19 pandemic has been supported by new EU instruments, including the European instrument for temporary Support to mitigate Unemployment Risks in an Emergency ([SURE](#)), the Coronavirus Recovery Investment Initiative ([CRII](#)), and [NGEU](#) (see more details below).

The [Green Deal Industrial Plan](#) presented in February 2023, partly a reaction to the US's massive funding programme to provide incentives to accelerate the transition to a clean energy economy ([Inflation Reduction Act](#), IRA), is designed to enhance the competitiveness of Europe's net-zero industry and support the fast transition to climate neutrality. As part of this plan, the Commission proposed the [Net-Zero Industry Act](#) and the [Critical Raw Materials Act](#) to scale up the EU's manufacturing capacity for net-zero technologies; it also announced the European Sovereignty Fund. Following Russia's invasion of Ukraine, there has been a more [generous](#) application of State aid rules, with [the temporary crisis framework](#) created in March 2022, and its latest modification transforming it into the [temporary crisis and transition framework](#) (TCTF).

Created in 2020, NGEU is a key initiative helping to repair the damage caused by the pandemic, and at the same time making Europe more resilient and sustainable. Together with the 2021-2027 MFF, it represents 1.8 % of EU GNI and is the largest investment package ever implemented through the EU budget. The main advantage and innovation of NGEU is the way it is financed, its performance-based nature, its national ownership and its focus on the climate and digital transformation. To finance the instrument, the Member States agreed for the Commission to carry out borrowing operations on behalf of the EU.

Although resorting to the financial markets to provide Member States with financial support has happened in the past, this time it is taking place on an unprecedented scale. As a result, since the first auction in [June 2021](#) the Commission has moved from being a small issuer, raising funds to finance relatively small lending programmes like the European Financial Stabilisation Mechanism ([EFSM](#)) and macro-financial assistance ([MFA and MFA+](#)), to being a [significant](#) and [effective](#) issuer of funds. The optimistic views of NGEU are amplified by estimates of its substantial macroeconomic impact. By 2024, it is [expected](#) to trigger at least a 1.5 % increase in the EU's real GDP compared to a baseline scenario without NGEU investments, and to increase employment by up to 1 % during its period of operation. It provides a much-needed [catalyst](#) for public and private investment, particularly in the green transition, and modernisation of EU economies.

The centrepiece of NGEU is the [RRF](#) (10 % of NGEU's resources are channelled through six other budgetary programmes: React-EU, the Just Transition Fund, InvestEU, Rural Development, Horizon Europe, and RescEU). Worth €723.8 billion, the RRF is a mix of grants and loans, to be invested in line

with six pillars representing policy areas of European relevance, in a package of reforms and investments based on [national recovery and resilience plans \(NRRPs\)](#). These plans take into account many of the 2019 and 2020 country-specific recommendations of the European Semester. Thanks to the introduction of compulsory targets for spending on green transition and digital transformation under each national plan (at least 37 % and 20 % respectively) much of the RRF financing [supports](#) projects in the areas of decarbonisation, renewables, energy efficiency, resilience of key infrastructure, and sustainable transport.

Furthermore, with the new crisis caused by the war in Ukraine, and adoption of the new European initiative to reduce dependence on Russian fossil fuels, known as [REPowerEU](#), the role and scope of action of the RRF has been [extended](#), without changing its initial borrowing limits. The RRF and the NRRPs turned out to be agile crisis-response tools, useful for the financing and implementation of additional reforms and investments in the [energy sector](#). Based on the agreement of [27 February 2023](#), Member States can amend their RRF recovery plans and include new, reinforced measures to save energy, produce clean energy, and diversify supplies. To finance these measures, Member States will be able to use up to €225 billion in loans still available under the RRF, and up to €72 billion in grants (financed by the EU emissions trading system (ETS), the Innovation Fund, and voluntary and limited transfers from the Brexit Adjustment Reserve and cohesion funds).

No later than 2028, the EU will begin to repay the liabilities incurred by the borrowing allocated to NGEU. The EU budget will repay the grants and their borrowing costs, while Member States that have resorted to loans will be in charge of their repayment. The maximum timeframe for the repayment is spread over 30 years and should finish by 2058 at the latest. Since the EU budget is financed mainly by OR based on the Member States' GNI, value added tax (VAT) and custom duties, if there are no new OR, other options – such as an increase in national contributions to the EU budget or cuts to existing MFF programmes after 2027 – will be necessary to secure funds to repay the NGEU grants when they became due.

Bearing this in mind, the decision to create NGEU was linked to the agreement on [interinstitutional cooperation](#) on a roadmap towards the introduction of new OR. Apart from the guiding principles of the reform, the roadmap includes a timetable for the introduction of different types of resources, between January 2021 and January 2026, and is divided into [three steps](#). However, apart from the new OR from plastic packaging, [introduced in 2021](#) and already contributing some [€6 billion per year](#) to the EU budget, the implementation of the roadmap has not gone as planned. In 2021, after a delay, the Commission [proposed](#) the first basket of the next generation of OR, namely the revenues from emissions trading (ETS), resources generated by the carbon border adjustment mechanism (CBAM), and the recent OECD/G20 agreement on a reallocation of taxing rights over multinational corporations ('Pillar One'). The proposal – which, if adopted, could [generate](#) up to €17.3 billion (in 2018 prices) on average annually from 2026 to 2030, and thereby help to repay the NGEU funds – has been [stuck](#) in the Council. In the meantime, the Commission has announced that it [intends](#) to propose further new OR in the third quarter of 2023.

One aspect of a broader discussion on the EU budget concerns the resources and tools needed to ensure the EU contribution to the recovery and rebuilding of Ukraine. Among various [options](#) and [strategies](#) that have been presented, the financial involvement of the EU is considered [vital](#), not least since Ukraine (along with Moldova) has been granted [EU candidate](#) status. With a view to catering for the short- and medium-term recovery needs, in June 2023, as part of the mid-term [review and revision](#) of the 2021-2027 MFF, the Commission proposed to create the [Ukraine Facility](#) for 2024-2027. Questions about [financing](#) both the recovery and the possible accession process will certainly also be an important part of preparations for the post-2027 MFF.

Obstacles to implementation of response

The pandemic and energy crises put a heavy strain on public finances, with public debt-to-GDP levels peaking above 90 % in early 2021. While declining since then in the majority of Member States due to strong nominal GDP growth, debt levels are still markedly above pre-pandemic levels, at 84 % of GDP in the fourth quarter of 2022 for the EU overall. In the context of heightened economic and geopolitical uncertainty, on 26 April 2023 the Commission published a [package of three proposals](#) to revise the EU's economic governance framework. The reform proposals are shaped by the trade-off between reducing higher and more dispersed public debt levels after several years of unprecedented fiscal challenges on the one hand, and the need for sustained public investments for common EU priorities on the other.

To reorganise the current fiscal governance framework, the Commission proposes to establish a new type of document: medium-term fiscal-structural plans. These plans are the cornerstone of this proposal and would encompass, besides country-specific fiscal trajectories, an incentive for investment and reform commitments through a possible extension of the fiscal adjustment path. In addition, public investment under EU programmes would not count towards the underlying deficit indicator. Whether this framework is [compatible](#) with the [required](#) increase in investment in defence, secure energy supply and a competitive green economy is currently a subject of debate.

As far as the implementation of NGEU is concerned, potential obstacles concern both financing and spending. On the financing side, the provision of support under NGEU would not be possible without successful borrowing operations conducted by the Commission on behalf of the EU. The first [assessments](#) of the implementation of the Commission's [borrowing strategy](#) were positive and encouraged [discussion](#) on the possibilities of making it a permanent solution. However, with the escalation of the war in Ukraine, deteriorating market [conditions](#), and the [growing cost](#) of the debt, the debate has become more focused on the risks related to the costs and repayment of NGEU funds.

While the cost of the NGEU funds programmed under the 2021-2027 MFF ([€14.9 billion](#)) was based on the assumption of an increase in interest rates from 0.55 % to 1.15 % over the period, the actual level was close to 2 % at the end of 2022 and reached 3 % in 2023. In this situation – and in the context of the process to draw up the EU budget for [2024](#) and of the mid-term review of the 2021-2027 MFF – the European Parliament [cautions](#) that the amounts envisaged to cover the borrowing costs could be insufficient. Given that the limited flexibility and narrow margins available under the MFF have already been used extensively for unexpected needs, the Parliament warns there is a risk that, in order to pay the interest, reductions will have to be made in EU programmes and funds.

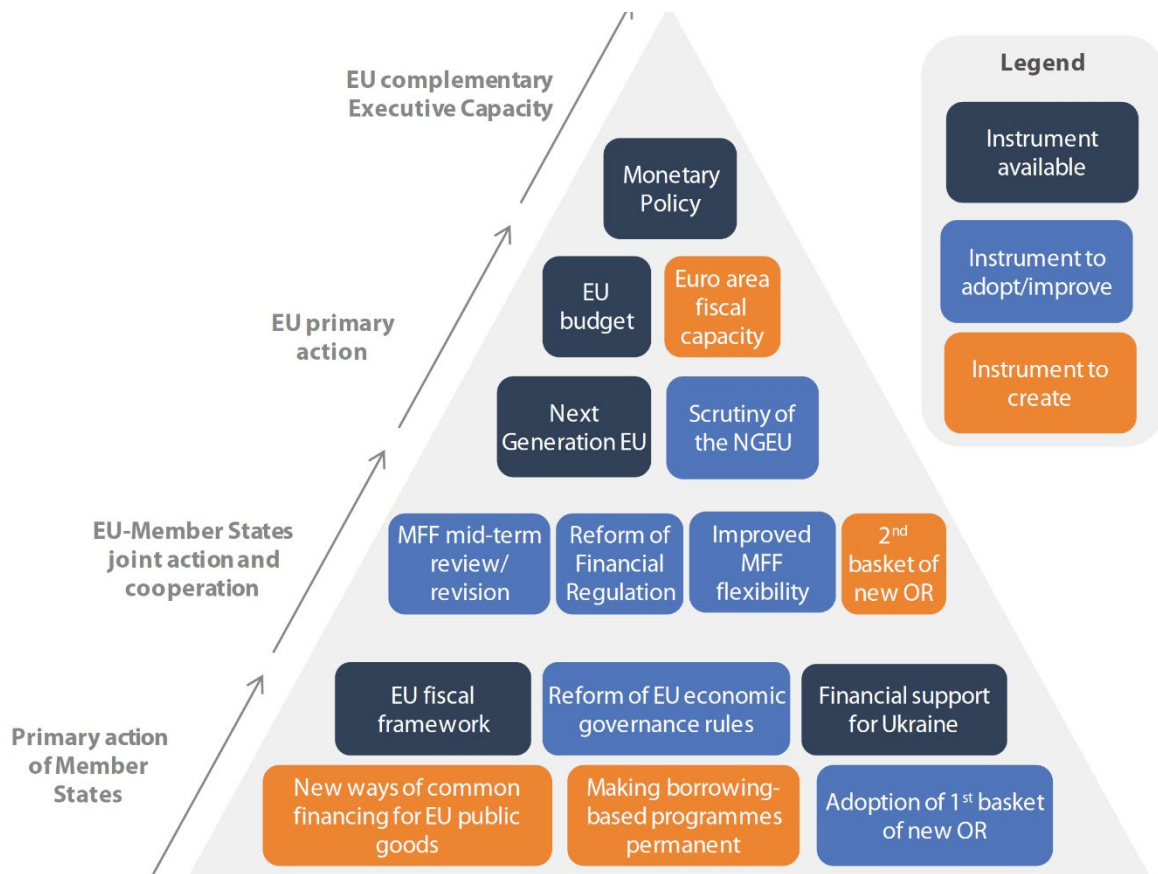
The Parliament sees the risk as yet another argument for urgent reform of the OR system. Over the years, such reforms have proven to be [difficult](#). The need for a unanimous decision by all Member States when negotiations happen in the spirit of *juste retour*, rather than that of common interest and European added value, makes the process challenging, and even more so when discussing such reform in the current context of the war and volatile economic situation. However, if the new resources are not in place in time to repay the NGEU funds, or if they do not deliver the expected and needed revenues, some policy options are either to increase Member States' contributions based on GNI, or to limit the spending on EU funds under the next MFF. As mentioned above, despite some progress made in implementing the roadmap for the new OR agreed together with the 2021-2027 MFF and NGEU, the delays and bottlenecks are already [apparent](#).

On the spending side, the risk is mainly related to the delays in implementing the NRRPs and the possibility of misusing or wasting resources under the RRF. Two years since the first NRRPs were submitted for assessment, the Commission [reported](#) that RRF implementation was firmly under way.

In May 2023, slightly more than 30 % of the approved grants and loans had been paid out and, on average, the RRF seemed to be operating according to the agreed timeline. However, progress has varied between Member States. In some, [increasing prices](#) and the changing political landscape and priorities have not been conducive to the smooth implementation of the agreed investments and reforms. Whereas payments have been highest in Spain (53.3 % of the approved resources), Lithuania (37.4 %), Greece (36.4 %), Croatia (35.2 %) and Italy (34.9 %), countries such as Hungary, Ireland, Poland, Sweden and the Netherlands have not received a single euro. In particular, unblocking the resources in [Hungary](#) and [Poland](#) depends on politically tough reforms related to the rule of law. In some countries, the difficulties in fulfilling certain milestones and targets have resulted in the decision to postpone requests for payments or to amend the NRRP. This is the case, for instance, for the plans of Belgium, Germany, Lithuania, Slovakia and Slovenia. Moreover, there are signals that Italy, the biggest beneficiary of the RRF, after a good start, is beginning to [struggle](#) to meet the conditions for the next payments.

Doubts are also arising over how the RRF funds are used and governed. Concerns relate to the limited [budgetary scrutiny](#) over the borrowed funds, and to the transparency of the [performance-based](#) implementation and [disbursement method](#) of the RRF, which differs from the approach used for EU budgetary instruments so far. Right at the beginning of the implementation, analysts [raised](#) the issue that speedy implementation of such large amounts should not take place at the cost of quality of reforms and investments, and of proper control of spending, also in the context of [rule of law conditionality](#), with experts [highlighting](#) the risk of fraud and corruption. These concerns are all the greater due to the off-budget character of NGEU resources and, consequently, limited transparency and democratic scrutiny of spending. Treated as [external assigned revenue](#), NGEU resources are not part of the usual budgetary procedures – for example, only the grant component of the funds is subject to the ex-post discharge. Moreover, the involvement of the European Parliament as the budgetary authority is [restricted](#) compared to the rest of the EU budget, and the European Court of Auditors has highlighted the existence of '[assurance and accountability gaps](#)' in the systems for protecting the financial interests of the Union under the RRF.

Figure 50 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

Position of the European Parliament

Whereas a substantial share of the investment will be borne by the private sector, public investment will have to increase as well. To mobilise private investment more efficiently, a functioning Banking Union and progress on the Capital Markets Union are crucial, including action on sustainable finance. On the fiscal side, in its [resolution](#) on the 'review of the macroeconomic legislative framework' from June 2021, the European Parliament stressed the need to strengthen the democratic legitimacy, accountability and scrutiny of the economic governance framework; thus, responsibilities should be assigned at the level where decisions are taken or implemented, with the Parliament scrutinising the European executives. Furthermore, the Parliament adopted an [own-initiative report](#) on the European Semester, calling for an urgent review of the EU fiscal framework, preferably to be completed prior to deactivating the general escape clause.

The Parliament's role in the overall management and [scrutiny of NGEU](#) is bigger than with other [intergovernmental tools](#) created in response to various crises over the last decade, such as the European Stability Mechanism. Still, it is rather limited due to the legal basis chosen for the creation of the recovery instrument (Article 122 of the Treaty on the Functioning of the EU), the treatment of the resources borrowed as external assigned revenue (see above) and in comparison, for example, with the role it has as the EU's [budgetary and discharge authority](#) over the EU spending on cohesion or agriculture. The Parliament [sees](#) it as a risk to central budgetary principles and [calls](#) for more transparency in the implementation process, and for [relevant changes](#) to the [financial rules](#) applicable to the general budget, in particular making external assigned revenue an integral part of the budget.

The Parliament closely [monitors](#) the implementation of the RRF, including through regular dialogues with the representatives of the European Commission, the Standing Working Group on the RRF, and in the budgetary discharge procedure (albeit the latter is limited to the grant part of the NGEU). Among the key aspects discussed and monitored by Members of the European Parliament are the quality of the reforms and investments included in the NRRPs, risks and delays in the implementation process, assessment of the payment requests and verification of the milestones and targets that are the condition for payments. Also under discussion are equal treatment of the Member States, application of rule of law conditionality, and involvement of national parliaments and regional and local authorities in implementing the RRF.

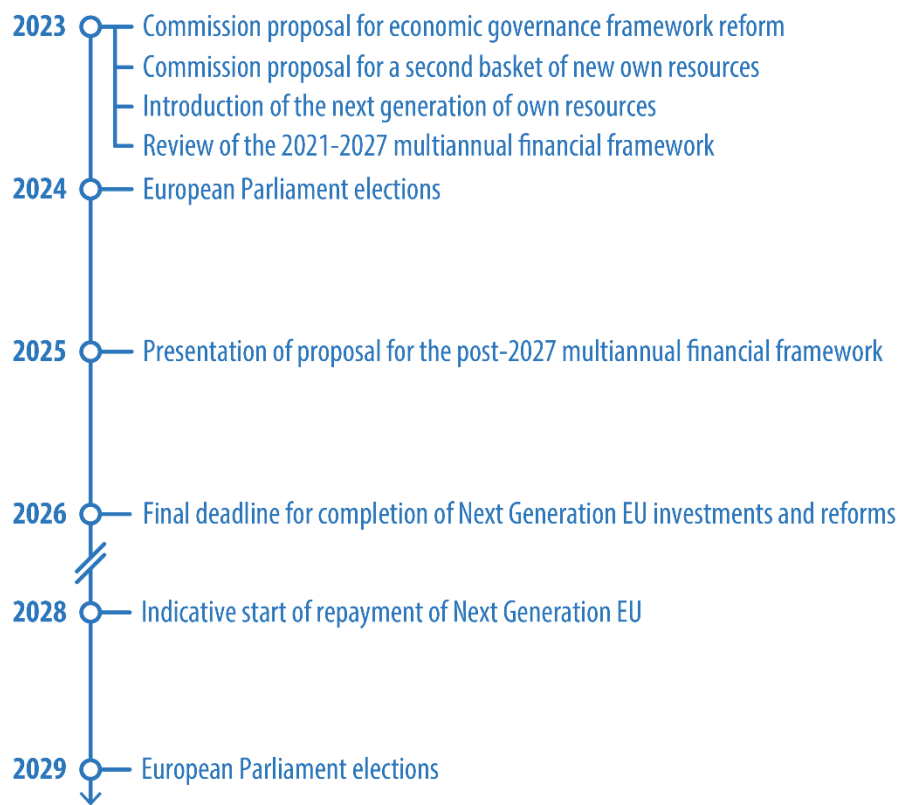
The Parliament pays much attention to the [borrowing](#) process, [its costs](#), and the preparations for the repayment of NGEU funds. In this context, the Parliament sees the solution to be in creating new, fair sources of revenue, which will unload the pressure on the GNI-based resource and guarantee the EU's capability to repay NGEU-related debt without risking limitation of existing EU policies. The Parliament's long-term commitment to the reform of the OR system was recently reiterated in the resolution of [10 May 2023](#), where it stresses that EU finances are going through a critical period and that a lack of reform can have highly detrimental effects on the future of the EU, its policies and objectives, and the trust of Europeans and investors in the Union.

In focus: Strategic Technologies European Platform (STEP)

In [September 2022](#), in her State of the Union address, European Commission President Ursula von der Leyen announced the Commission's intention of proposing an EU Sovereignty Fund. With the aim of creating a more sustainable, efficient and self-sufficient industrial policy, the fund would support projects of common interest in critical and emerging technologies across different sectors of EU industry, [including](#) microelectronics, quantum computing, artificial intelligence, biotechnology, biomanufacturing and net-zero technologies. It will be one of the key EU financial tools for the implementation of the [Green Deal Industrial Plan for the Net-Zero Age](#).

The details of the proposal were announced in the framework of the mid-term [review and revision](#) of the 2021-2027 MFF. Instead of creating a new fund, the Commission proposes to bring together and adapt existing instruments under a common framework called the Strategic Technologies European Platform ([STEP](#)). It would include such programmes as: InvestEU, the Innovation Fund, Horizon Europe, EU4Health, Digital Europe and the European Defence Fund. In addition, the proposal envisages involvement of the RRF and cohesion funds.

Figure 51 – Timeline of new EU financing mechanisms to boost resilience



Source: EPRS.

Policy gaps and pathway proposals

The successful launch of NGEU and the RRF is seen as a [turning point](#) for the EU. It has demonstrated that the European Commission's borrowing on behalf of the EU as a way of financing the EU's common needs is politically and legally possible, and has added a new dimension to the debate on a [fiscal capacity](#) for the euro area, [reforming](#) the European Semester, and financing the EU's common needs, for instance those related to the [green and digital](#) transformations. Besides the supply of high-priority EU public goods, recent large-scale [temporary shocks](#) have prompted [discussions](#) about a [fiscal capacity](#) to ensure [public investments](#). Some analysts consider transforming NGEU into a [permanent facility](#) to be a [key priority](#) for reinforcing the EU's economic policy framework, seeing it as [a way](#) to solve financial constraints that the EU is facing and a tool to finance the provision of EU public goods.

The idea of extending NGEU to cover new objectives or even to resort to new joint borrowing gained even more momentum after Russia's invasion of Ukraine put the EU on the path to a [new crisis](#). Although, so far, resorting to new joint debt has been too [controversial](#), it remains one of the options under consideration, particularly in the context of the [rebuilding](#) of Ukraine.

Some experts [emphasise](#) that a positive evaluation of the implementation of NGEU and the RRF will be crucial for a decision on using them as templates for any future instruments. Among the aspects that need improving, analysts mention [anti-fraud measures](#), transparency, control mechanisms and broadening the [accountability](#) of RRF management. In addition, there are many voices calling for better involvement of [national parliaments](#), the [European Parliament](#), [civil society](#) and [regional](#) partners.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Improvement of NGEU transparency and democratic scrutiny	Commission/ Parliament/ Council	For example, reform of the Financial Regulation to make external assigned revenue an integral part of the budget	EP Resolution of 24 November 2021 on the revision of the Financial Regulation Discharge for the 2021 budget	
2	Revision of the 2021-2027 MFF	Commission	MFF to be increased and made more flexible	EP Resolution of 15 December 2022 on upscaling the 2021-2027 MFF	
3	Provide the EU with the necessary financial means to attain its objectives	Commission/ Council	Introduction of diversified and enlarged set of own resources	EP Resolution of 10 May 2023 on own resources	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
Proposals submitted by the European Commission/ongoing processes					
4	Next generation of own resources	Council	To unblock the procedure to introduce new own resources	Commission proposal	
5	An adjusted package for the next generation of own resources	Commission/ Council	To adopt new types of own resources	Interinstitutional Agreement (IIA) Commission proposals	
6	New economic governance rules	Commission	Comprehensive reform of the EU's economic governance rules	Commission proposals	
7	The EU economy after COVID-19: implications for economic governance	Parliament	Improved effectiveness of economic surveillance in the Union	COM(2021) 0662	
Policy suggestions from think tanks and academia/policy examples from third countries					
8	Change of budgetary priorities	Commission/ Parliament	New priorities in proposal for the next MFF (post-2027 round of MFF negotiations)	Various sources	
9	Making the borrowing permanent to finance the EU's common needs	Member States	Creation of a common European fiscal instrument	Various resources, i.e. EFB , CEPR , ECB, PIIE	
10	Extension of NGEU to cater for increasing needs in the areas of energy security and defence	Member States	New borrowing	Various think tanks and some Member States	
11	Introduction of various new own resources	Commission	Proposals for new resources (not already planned for the second package of new OR) can be envisaged with the proposal of the new MFF or if a new EU borrowing programme is drafted	Various sources	

Defending the EU's democratic information sphere

Naja Bentzen

The issue(s) in short: The challenge and the existing gaps

The democratic information sphere has undergone a rapid and profound evolution over the course of the past two decades. The public space for debate – where we not only express our opinions, but also form our opinions, which feeds into our individual and collective decision-making – has the potential to unite, but also to divide people. This complex, multi-layered ecosystem is shaped and impacted by a vast number of strategic and systemic actors, where interests sometimes dominate over democratic values and freedoms.

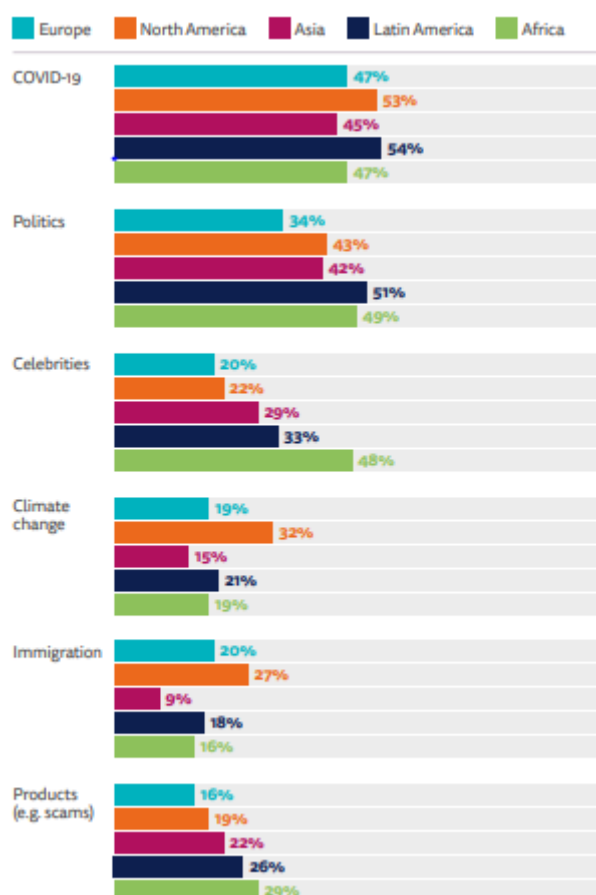
- **Geostrategic threats:** Foreign information manipulation and interference (FIMI) – conducted in an intentional and coordinated manner – aims to manipulate political views and preferences through deceptive information. Actors engaging in FIMI are typically authoritarian state or non-state actors, including proxies inside and outside their own territory. Russia, China and Iran are among the most visible and increasingly aggressive actors. These actors coordinate their narratives – typically designed to undermine democracy – and export their tools to other countries and continents. They also use proxies, including outside their territory, to further their goals while maintaining deniability. Increasing efforts to game – and thereby undermine – the multilateral system, with the United Nations as a prominent example, is part of the strategic erosion of international decision-making processes.
- **Undermining the integrity of elections** – and thereby public trust in the electoral system and democratic institutions – erodes democracy as a system. Two key elections in 2024 – for the European Parliament in June and the US elections in November – will create ample opportunity for information campaigns and interference by authoritarian actors, both with a view to distracting from their own failures and to achieving a certain desired outcome. US domestic political polarisation could play into this.
- **Systemic threats:** Distortion of the information space – impacting public opinion as well as individual and collective decision-making – through filtering, ranking and recommendation of content and interactions (for example, via newsfeed algorithms, de/prioritisation or removal/amplification of content and accounts). Engagement is generated by algorithms that prioritise polarising content over facts, pushing users towards extremes ('algorithmic radicalisation'). This is, at least partly, a [consequence](#) of the business models of platforms that dominate the online ecosystems.
- **Societal vulnerabilities:** Interlinked with systemic and strategic threats, societal weaknesses increase vulnerability to manipulative information, which uses emotional content to trigger and maintain engagement; people are more prone to deceptive messages if they feel that the system is not working for them. Mental health issues – in part triggered by social media and accelerated by the pandemic – have created a [profound risk of harm](#) to children and youths. This could feed into a vicious circle of addictive behaviour and vulnerability to deceptive information, with algorithmic curation pushing some people towards extremist messaging. Computer games are [increasingly used](#) by extremist actors to groom and radicalise users.

Across the world, there is increasing awareness of and concern about deceptive narratives spread by a growing number of state and non-state actors and enabled by global tech companies. Correspondingly, the need to find cross-border responses that take different aspects and actors into account is pressing. Globally, the EU has the potential – via its important internal market and its standard-setting power (the so-called 'Brussels effect') – to promote, represent and defend its democratic values, extending far beyond Europe. However, international and multilateral cooperation to tackle the multidimensional threats from actors who supply and enable information manipulation is facing a number of challenges.

At the same time, efforts to reduce the demand for deceptive narratives in a strategic manner would require pre-emptive responses to predictable developments. This includes addressing drivers of polarisation such as growing economic inequality – a key perceived [threat to democracy](#) – as a result of job losses to AI-powered services. This could, as similar developments have done in the past, further exacerbate [status anxiety](#); the fear of downward mobility that historically risks providing fertile ground for authoritarian tendencies and messaging. Moreover, there are increasing calls for digital and media literacy across generations (not only young people) to equip people to detect deceptive tactics, a threat that is expected to be exacerbated by AI-powered information manipulation.

At their December 2022 summit, the EU and the US [agreed](#) to promote their values worldwide via an open, free, global, interoperable, reliable and secure internet, as reflected in the [Declaration for the Future of the Internet](#), which has been signed by more than 70 partners so far, including the EU and its Member States. Moreover, they agreed to seek to eliminate the use of arbitrary and unlawful surveillance that targets human rights defenders. Transatlantic cooperation on internet freedom and internet governance – including within the UN framework, which would include the Member State level – will be key to advancing democratic norms and standards. As the importance of transatlantic cooperation to respond to the evolving threats to our joint information sphere will continue to grow, it will be crucial to counter the repercussions of the growing polarisation and what some experts call 'truth decay' in the US, which can affect legislative responses, including in Congress, and call into question important institutions involved in this work.

Figure 52 – Proportion who saw false or misleading information about each topic in the last week – selected regions



Source: [Reuters Institute, 2022](#).

Position of the European Parliament

Foreign information manipulation and interference: The European Parliament has [consistently](#), and with broad political consensus, been pushing the issue of a European response to information manipulation and foreign interference to the top of the agenda, urging the EU to provide sufficient tools and resources to respond adequately and in a coordinated manner.¹ Most recently, the second Special Committee on foreign interference in all democratic processes of the European Union, including disinformation, and the strengthening of integrity, transparency and accountability in the European Parliament ([ING2](#)), have significantly increased the visibility of the related threats, and broadened and deepened the understanding of and focus on the interlinked challenges. The scope of ING2 was further expanded in early 2023 to include threats to Parliament's integrity and transparency. Parliament's strategy for the 2024 elections includes a focus on preventing and addressing information manipulation, without interfering in the political or wider social debates, with full respect for the independence of the Members' mandate.

Stricter rules on political advertising: Parliament's [mandate for negotiations](#) with the Council proposed a number of changes to the Commission's proposal – for example, excluding political views expressed under editorial responsibility from the concept of 'political advert'. MEPs also proposed banning the financing of political advertising services by non-EU sponsors that reside or are located outside the EU. Moreover, they called for easy access of citizens, authorities and journalists to information on political advertisements, including creating an online repository for online political advertisements and related data. Additional changes include reinforcing obligations for providers of political advertising services in the last month preceding an election or a referendum, banning the use of targeting and ad delivery techniques involving processing of sensitive personal data, and limiting the use of those techniques when they involve the use of non-sensitive personal data.

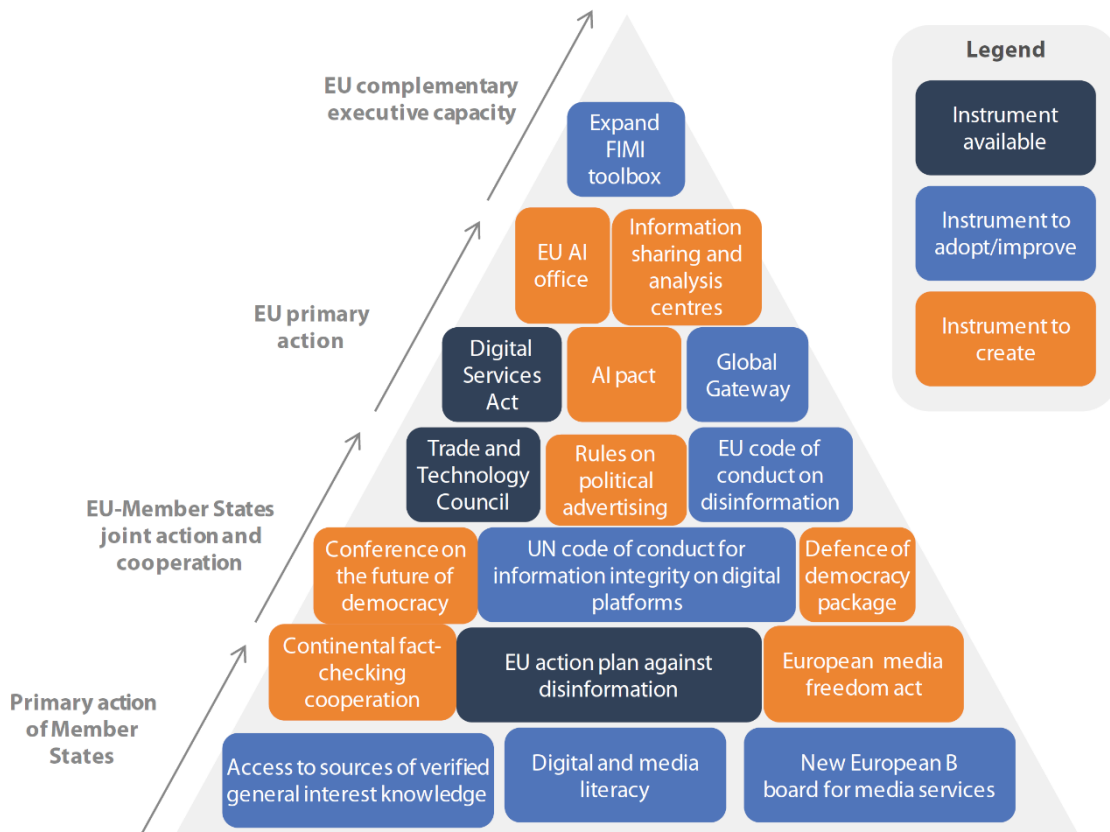
Artificial Intelligence and information manipulation: In June 2023, the European Parliament [adopted](#) its negotiating position on the Artificial Intelligence Act (AI Act); MEPs expanded the list of high-risk AI systems, adding AI systems to influence voters in political campaigns and in recommender systems used by social media platforms (with more than 45 million users) under the Digital Services Act (DSA). According to Parliament's position, generative foundation models, like GPT, would have to comply with additional transparency requirements. This would mean disclosing that the content was generated by AI, designing the model to prevent it from generating illegal content, and publishing summaries of copyrighted data used for training. Furthermore, Parliament wants to impose an obligation on providers of [foundation models](#) to ensure robust protection of fundamental rights, health, safety, the environment, democracy and the rule of law. MEPs also added safety mechanisms by making it easier for citizens to file complaints about AI systems and receive information about decisions based on high-risk AI systems that impact their rights. Moreover, MEPs proposed to set up an EU AI Office with its own legal personality, funding and staff. The EU AI Office would be tasked with monitoring the implementation of the AI Act.

European Media Freedom Act (EMFA): Parliament's Committee on Culture and Education (CULT) presented its draft report on the EMFA on 26 April, with the deadline for amendments set for 5 May 2023. The CULT committee's draft report sparked [criticism](#) from a number of prominent European media freedom groups (see below). The vote on and adoption of the report in the CULT committee is planned for September 2023, followed by a vote in plenary, possibly in October 2023.

In focus: Foreign information manipulation and interference

Following the creation of the European Parliament's Special Committee on Foreign Interference in all Democratic Processes in the European Union, Including Disinformation (INGE), the European External Action Service (EEAS) developed the [concept](#) of foreign information manipulation and interference (FIMI). The visibility of the threats related to FIMI increased during the pandemic and were further exacerbated by Russia's full-scale war of aggression against Ukraine, launched in February 2022, as well as the global repercussions of the escalating information war. The capacity of the EEAS to address related challenges has expanded significantly since 2015, when the problem first appeared on the EU's political agenda. In addition to a more precise understanding and diagnosis of the problem – from 'fake news', to 'disinformation', to FIMI – the EEAS has been developing and improving the means to prevent, deter and respond to FIMI. It has done so in close contact and collaboration with other EU institutions, Member States, international partners such as the G7 and NATO, civil society organisations, academia, journalists, media and private industry. In addition, the three Strategic Communications Task Forces cover and help respond to FIMI activity in the Eastern Partnership, the Southern Neighbourhood and the Western Balkans. The EEAS is also working to protect its common security and defence policy (CSDP) missions abroad and build the capacities of EU Delegations to address FIMI.

Figure 53 – Pyramid of instruments at the disposal of the EU and its Member States



Source: EPRS.

EU policy responses (Commission and Council responses so far)

Foreign information manipulation and interference: The actions by the EEAS to counter FIMI constitute the core executive response to related threats. Since 2015, the EEAS has been the [key EU driver](#) behind actions to counter (Russian) disinformation, and continues to expand its remit as the main actor in developing and implementing measures and actions in line with the evolving understanding of the threats to the EU. This work feeds into the EU's overall framework to tackle FIMI, in particular through the evolving FIMI toolbox.

Building on the 2020 European democracy action plan, the [2022 Strategic Compass](#) called for the EEAS to further develop the EU's FIMI toolbox, and include this in the CSDP missions and operations. In July 2022, the Council [welcomed](#) the FIMI toolbox and called for more systematic use of the full range of available tools, such as situational awareness – among others, through the Rapid Alert System and the Single Intelligence Analysis Capacity, in particular its Hybrid Fusion Cell. Most recently, the [defending democracy package](#) – announced in February 2023 – aims to cover the review of the implementation of the European democracy action plan and look into ways to further strengthen democratic resilience, taking into account the recommendations of the [Conference on the Future of Europe](#).

Media freedom: Reflecting the acknowledgement that complementary tools are needed at EU level to counter growing politicisation of the media in some Member States, the Commission presented the EMFA in September 2022, together with a recommendation. The proposed EMFA builds on the Audiovisual Media Services Directive and seeks to set rules to protect media pluralism and independence in the EU, including safeguards against political interference in editorial decisions. In the Council, the proposal is being discussed within the Audiovisual and Media Working Party; a progress report was presented in November 2022 and a second one in May 2023 at the Education, Youth, Culture and Sport Council. In the Parliament, the draft legislative report was presented in the CULT committee in April 2023. A vote on and adoption of the report in the CULT committee is planned for September 2023, and Parliament will possibly vote in plenary in October 2023.

Addressing vulnerabilities: The Commission funds the [Radicalisation Awareness Network](#) (RAN) – an umbrella network for practitioners working on preventing radicalisation and violent extremism across Europe. RAN facilitates the exchange of ideas, knowledge and experience among field experts, social workers, teachers, NGOs, civil society organisations, victims' groups, local authorities, law enforcement authorities and academics. Within RAN, a special [Communication and Narratives Working Group](#) (C&N) focuses on online and offline communication that counters extremist propaganda and/or challenges extremist ideas.

Political advertising: In the context of its [2020 European democracy action plan](#), the Commission announced its intention to complement the rules on [online advertising](#) included in the DSA through a legislative proposal on sponsored political advertising. The proposal was presented by the Commission on 25 November 2021 and draws on previous EU initiatives to ensure greater transparency in political advertising. [Trilogue negotiations](#) are ongoing.

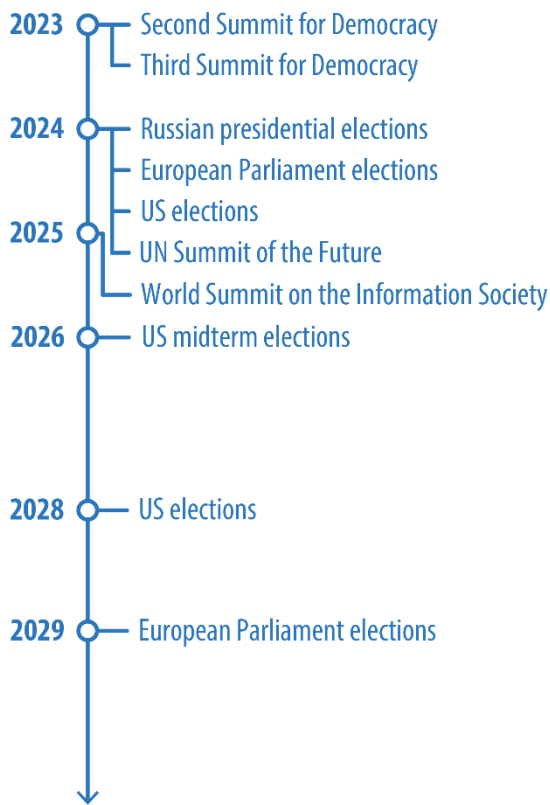
Artificial Intelligence: The Commission unveiled a proposal for a new AI Act in April 2021, aiming to enshrine in EU law a technology-neutral definition of AI systems. The proposal tailors the rules according to four levels of risk: unacceptable, high, limited and minimal. 'Unacceptable risk AI' – harmful uses of AI that contravene EU values (such as social scoring by governments) – will be banned. 'High-risk AI' refers to systems that adversely impact people's safety or their fundamental rights. The proposal envisages transparency obligations for systems that (i) interact with humans, (ii) are used to detect emotions or determine association with (social) categories based on biometric

data, or (iii) generate or manipulate content ('deep fakes'). People must be informed if they interact with an AI system, or if their emotions or characteristics are recognised through automated means. If an AI system is used to generate or manipulate an image or audio or video content that appears authentic, there should be an obligation to disclose that the content is generated through automated means, with exceptions for legitimate purposes (law enforcement, freedom of expression). This would allow people to make informed choices or step back from a given situation. In June 2023, the Commission [called](#) on online platforms that are part of its strengthened code of practice to identify and label AI-generated content to tackle disinformation, to make it easier for people to spot manipulated information.

Transatlantic cooperation: The [EU-US Trade and Technology Council](#) (TTC) was created in 2021 as a key forum for EU-US coordination on key trade and technology issues to include transatlantic cooperation based on shared democratic values in line with the 2020 'new [EU-US Agenda for Global Change](#)' (JOIN(2020) 22 final). According to the joint statement issued after the [fourth ministerial meeting](#) in Luleå on 30-31 May 2023, the EU and US [agreed](#) on shared standards for structured threat information exchange and on a common methodology for identifying, analysing and countering FIMI, to be made available to stakeholders globally. Moreover, the EU and the US agreed to explore 'further support for capacity building' in countries in Africa, Latin America and the EU Neighbourhood to counter FIMI. TTC cooperation also includes a call to action for online platforms operating in Africa, Latin America and EU Neighbourhood countries to ensure the integrity of their services and to effectively respond to disinformation and FIMI, building on the example of the EU's code of practice on disinformation.

The EU and the US also reaffirmed their commitment to a risk-based approach to AI to advance trustworthy and responsible AI technologies, and [agreed](#) to treat generative AI as a matter of urgency and to work together to swiftly produce a draft Code of Conduct for AI to be signed on a voluntary basis, including by governments from other regions. This comes in the wake of the launch of OpenAI's ChatGPT in November 2022, which prompted mounting calls – including in the US – to [urgently regulate AI](#). Although a number of prominent US tech actors have [called](#) for a [moratorium](#) on training large AI systems, the sector and its investors appear at the same time to be [engaged](#) in an ['arms race'](#) on AI that has accelerated dramatically since the launch of ChatGPT.

Figure 54 – Timeline on defending the EU's democratic information sphere



Source: EPRS.

Obstacles to implementation of response

Geostrategic obstacles

In the face of increasing pressure on the democratic information sphere – including strategic pressure from foreign authoritarian actors who are increasingly cooperating to undermine liberal democracies – the importance of multilateral, international and transatlantic cooperation will continue to grow. At the same time – also given the important role and visibility of the European Parliament and the US Congress, especially in the context of the upcoming elections in 2024 – threats to and setbacks for democracy on both continents can impact not only the overall credibility of democracy as a system, but also hamper global efforts to counter information manipulation and strengthen the joint information sphere. Moreover, AI-driven surveillance tools – putting journalists at risk of automated suppression – could further exacerbate this crisis of the democratic information sphere.

A related dimension of the multispectral threats to the information sphere is the [practical, strategic cooperation](#) on and [export](#) of internet censorship and surveillance tools from authoritarian actors such as China and Russia, which is furthering these countries' geostrategic interests by normalising the use of these technologies and standards. Against this backdrop, coordinating responses both within the EU and with like-minded partners – including NATO and the G7, as well as within the UN framework – will be of increasing importance, especially in the face of what appears to be growing coordination between authoritarian actors regarding the spreading of deceptive narratives. The push for more accountability and for the strengthening of democratic values in the information sphere has become an integral part of EU diplomacy in recent years. The pressure on democracies

from within will continue to challenge transatlantic and international cooperation and coordination, likely making these efforts even more delicate.

Given the broad scope and the variety of actors involved in strategic and systemic challenges to the information sphere, one of the greatest obstacles to achieving a coherent and holistic response in the future will be coordination and – linked to this – an adequate level of trust between key actors that should drive the global response. Such trust issues can be further exploited and weaponised by external authoritarian state actors with a geostrategic interest in weakening the democratic response to information manipulation and interference. Internationally, differing interests can slow down or hamper the efforts to rein in some of the market forces that contribute to polarising debates. Moreover, political forces in the US that also contribute to polarising debates could hamper transatlantic efforts to counter deceptive narratives.

FIMI: Creating or amplifying fissures within democratic countries has been part of the Kremlin's toolbox for years. The use of proxies to create plausible deniability and export narratives and tools to non-state actors, including within democracies, are fixtures in the authoritarian playbook. The mandate and strategic priorities of the EEAS limit the institutional focus and implementation of measures against state actors, notably Russia and China. However, given the blurring boundaries between state- and non-state actors, and between domestic and foreign actors, the strict focus on certain countries makes it easier for such state actors to exploit grey areas.

Systemic obstacles

Transatlantic tensions over tech regulation: In May 2023, two [rulings](#) by the US Supreme Court decided, in line with the big tech companies' position, not to deviate from the immunity principle granted to internet providers for the content they channel under Section 230. These rulings make it clear that it is the internet service provider's ['house rules'](#) rather than public authorities or lawmakers that governs what is objectionable. In a separate development on the other side of the Atlantic, the EU's [decision in May 2023](#) to fine Meta €1.2 billion for privacy violation exemplifies the persistent gulf between democratic values and freedoms on data privacy. Ongoing issues in Twitter under Elon Musk's leadership have brought the clash between corporate interests and democratic values to the fore, most recently in the company's decision in May 2023 to [leave](#) the EU's voluntary code of practice on disinformation. Other online platforms have also cut staff and scaled back on content moderation: Meta's [decision](#) before the launch of Threads – a new platform that amassed over 100 million users in five days – to lay off global staff working to counter disinformation and coordinated troll campaigns has sparked concern over potential new waves and avenues for information manipulation ahead of the important 2024 elections in the US and Europe.² The focus in Washington on securing the US's competitive and strategic edge vis-a-vis China could be increasingly used as an argument to push back against EU regulation.

Threats to the implementation of the DSA: Some stakeholders have expressed concern that exemptions for media content in the EMFA – which is still under negotiation – could undermine the implementation of provisions in the DSA that would otherwise make online platforms responsible for content moderation. Under this exemption, if any self-declared 'media' published false information via Twitter, Facebook or TikTok, the platforms would need to contact the 'media' and inform them about a fact check or takedown, which would, in practice, prevent timely and effective content moderation of viral disinformation.

As part of the broad spectrum of systemic obstacles, economic threats to the online media ecosystem – as noted by the [European University Institute \(EUI\)](#) – require action, although they go beyond the scope of the EMFA: 'economic threats that have increased in the online ecosystem of the media, in which the resources that are used to finance the media content providers –

advertising – are increasingly gathered by the digital intermediaries'. The EMFA does not address public subsidies to the media, 'neither calling for them nor addressing the related risks of political interference'. The authors note that the Digital Markets Act – covering the data and online advertising market – and EU financial support programmes for the media sector address the issues, but recommends using the EMFA as an opportunity to coordinate legislative and regulatory tools.

Societal obstacles: On the demand side of viral deceptive content, anxiety, loneliness, stress and declining trust in media, democratic institutions and political leaders can increase the vulnerability of citizens to deceptive, emotional messages. Societal grievances – creating fertile ground for deceptive information campaigns – could be further exacerbated by increased climate change-driven migration, increased inequality as a result of inflation and economic crises, as well as massive job losses as a consequence of the rollout of AI large language models (LLMs). According to some [estimates](#), 40% of working hours could be impacted, which could result in a significant decline in clerical or secretarial roles, according to the [World Economic Forum](#). At the same time, copyright issues, combined with the abundance of information online, news avoidance – connected with overabundance of information of fluctuating quality – and declining ad revenues for news media, could accelerate the mounting pressure on journalism.

Policy gaps and pathway proposals

Given the cross-border nature and broad spectrum of information manipulation, following emerging narratives from multiple actors – beyond the 'usual suspects' such as China and Russia – would better equip the EU to prebunk rather than debunk deceptive information once it has already started to spread. Since one democratic country's domestic actors can be another country's foreign actors, expanding the mandate of the EEAS – which, by nature, is limited to external actors – to take the global, cross-border and multiactor threats into account would facilitate the forecasting of information threats. Strategic foresight to pre-empt future corrosive narratives and which shares not only findings, but also forecasts, with the public can – in [combination](#) with media and information literacy, targeting all age groups – strengthen prebunking efforts to boost collective cognitive resilience.

Imposing costs on state actors that engage in FIMI hinges on attribution capacity. The final [ING2 report on FIMI](#), adopted on 1 June 2023, proposed that the FIMI toolbox should include a specific sanctions regime on FIMI as well as measures to strengthen the attribution capacity of European institutions and national governments. MEPs underlined the corrosive phenomenon of disinformation-for-hire, services to government and non-government actors – typically via the dark web – to attack electoral processes and called for a permanent body in the European Parliament to ensure effective monitoring. Moreover, they called for increased protection for media and journalists who are targeted by foreign powers to undermine the right to information, as well as 'mirror clauses' where the openness of the European information space would depend on access given to European media in other countries. In addition, MEPs called for an EU-wide regulatory system to prevent editorial control of media companies by foreign governments, and to prevent foreign high-risk countries from acquiring European media companies, using existing foreign direct investment screening mechanisms.

Coordination is key to successful cooperation at all levels – intergovernmental, interinstitutional, and with all relevant stakeholders. To this end, in February 2023 the EEAS [proposed](#) to standardise information on threat actor behaviour and infrastructure, including ensuring a consistent framework for sharing insights on FIMI incidents. Moreover, the EEAS proposed the creation of Information Sharing and Analysis Centres (ISACs) – trusted entities to foster information sharing and

good practices on threats and mitigation – to pool insights from the organisations that identify and expose manipulative activity using common frameworks and standards.

Election integrity: Ahead of the European Parliament elections in May 2024, followed by the US elections in November 2024, [efforts to encourage](#) EU and Member State election candidates and parties to make pledges of electoral integrity, and political incumbents to pledge not to engage in online manipulative practices, could be promoted to candidates, parties and stakeholders in the US.

AI pact until the AI Act can be applied: European Commissioner for the Internal Market Thierry Breton – following a meeting with Sundar Pichai, CEO of Google and its parent company Alphabet – [announced](#) on 24 May 2023 the decision to develop a voluntary AI pact with European and non-European companies to bridge the time until the EU's AI Act is ready for implementation.

Media legislation: In January 2023, the European Broadcasting Union [called](#) on the EU to 'ensure that the final EMFA will help to tackle threats to media independence and improve audiences' ability to access the media that matters most to them, both offline and online' by protecting and promoting the independence of media and journalists; ensuring that citizens can easily discover and find media services of general interest; and tackling arbitrary behaviour by global platforms towards media content.

In a [10-point plan to address our information crisis](#), the 2021 Nobel Peace Prize laureates and journalists Maria Ressa and Dmitry Muratov called on the EU to ensure that no media exemption be included in any tech or media legislation. The EU [recommended](#) using the EMFA as an opportunity to coordinate legislative and regulatory tools, including the Digital Markets Act, covering data and online advertising.

The CULT committee's draft report on the EMFA sparked [criticism](#) from a number of prominent European media freedom groups, citing in particular the removal of almost all references to editorial independence in the proposal and the insertion of media owners' right to assume a leading editorial role (Article 6.2); the insertion of VLOPs into the media plurality assessment and the exchange of a mandatory nature for a voluntary one (Article 21); and the failure to strengthen media ownership transparency rules (Article 6.1).

Reduce societal vulnerabilities in a strategic manner: Using the security lens, address the root causes of divisions and vulnerabilities, including increasing economic inequality, partly caused by structural job losses.

Boosting inclusive participatory democracy: In addition to other diplomatic efforts to promote democracy, the EU could initiate a Conference on the Future of Democracy – building on the experience from the [Conference on the Future of Europe](#) – as a global exercise in participatory democracy to engage citizens worldwide in a debate on challenges to democracy, as well as potential solutions.

Transatlantic cooperation: Big tech companies and internet providers – many of them from the US – play a key role in advancing or hampering democratic norms and standards. Increased cooperation between the US and the EU – including in the [EU-US Trade and Technology Council](#) – to manage the inherent tension between interests and values at the intersection of government and the corporate sector will be key to sustaining democratic norms and standards in the long term. Such efforts will include investment in technologies that further internet freedom in the face of rampant internet censorship and surveillance – the flipside of authoritarian (state) efforts to manipulate the information sphere.

Strengthening the global information sphere and increasing cooperation and coordination with like-minded partners to boost the media ecosystem in third countries: Within the Global Gateway

framework, the EU – in cooperation with like-minded democracies, including the US, the UK, Australia, Japan and Canada – could increase strategic investment in strengthening the media ecosystem across the world, including making European newsagency services available to local and regional media in the 'Global South'. Moreover, the EU could invest strategically in local news in its neighbourhoods and across the world, coordinating with and complementing ongoing efforts by democratic allies.³ Boosting the media and information landscape, including in sources that provide access to general-interest knowledge (for example, verified encyclopaedias) in key languages spoken in and beyond Europe – including Spanish, French, Arabic and Russian – could contribute to collective cognitive resilience not only within the EU, but also in third countries.

Multilateral cooperation: Close coordination within the UN on a future Global Code of Conduct for Integrity in Public Information could improve the chances that democracies gain an edge over the increasing autocratic coordination within the UN system that would further weaken multilateral and international decision-making. In this context, the EU could boost its diplomatic efforts to promote democracy, including promoting responsible state behaviour online. The European Parliament – as a flagship for multinational democracy, and with its significant tradition of support for democracy in mind – could play a more visible role in promoting the parliamentary dimension of such a push.

Possible action

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
European Parliament requests					
1	Sanctions regime on FIMI	EEAS/ Commission/ Council/ Member States	Include sanctions regime on FIMI Strengthen attribution capacity of EU institutions and national governments	Final report of Special Committee on Foreign interference (ING2), May 2023	
2	Effective defence of democracy package	Commission/ Council/ Parliament	Facing foreign influence efforts, a 'risk-based approach' would factor in the risk country (Russia, China, Iran)	Final report of Special Committee on Foreign interference (ING2), May 2023	
3	EU AI Office	Commission/ Council	Set up an independent EU AI Office with its own legal personality, funding and staff	Draft compromise amendments to the draft report on AI, May 2023	
4	Broadening the new European Board for Media Service	National media authorities, including some third countries	Coordination of national measures to counter disinformation; EP ING2 suggests including the Western Balkans and the Eastern Partnership countries and making EBMS independent of the Commission and Member States' governments	Final report of Special Committee on Foreign interference (ING2), May 2023	
5	Strategic communication cooperation with partners	EEAS	Proactive, effective and transparent communication, in cooperation with partner organisations and countries, to counter FIMI in accession countries	Final report of Special Committee on Foreign interference (ING2), May 2023	
6	Clear(er) rules on political advertising	Commission/ Council	Ban political advertising services sponsored by non-EU entities European repository for online political adverts	Transparency and targeting of political advertising (P9_TA(2023)0027)	
Proposals submitted by the European Commission/ongoing processes					
7	Information Sharing and Analysis Centres (ISACs)	EEAS	Establishing Information Sharing and Analysis Centres to foster information sharing and good practices on threats and mitigation	EEAS Report on Foreign Information Manipulation and Interference Threats 2023	

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
8	Digital Services Act	Commission/ Parliament/ Council	Provides a set of new EU-wide rules to ensure transparency, accountability and institutional oversight of the EU online space; results depend on implementation	2020/0361 (COD)	Yellow
9	European Media Freedom Act	Commission/ Parliament/ Council/ Member States	Proposals submitted by the European Commission	2022/0277(COD)	Yellow
9	AI pact	Commission and tech companies	Voluntary pact to bridge the gap until the AI Act is applicable.	Commissioner for the Internal Market	Red
10	Proposal on the transparency and targeting of political advertising	Commission/ Parliament/ Council	Lays down harmonised rules for a high level of transparency of political advertising and related services (offline and online)	2021/0381 (COD)	Yellow
11	Trade and Technology Council	EU and US	Countering FIMI in third countries	Annex on FIMI, TTC Ministerial meeting (TTC4)	Yellow
Policy suggestions from think tanks and academia/policy examples from third countries					
12	Continental fact-checking cooperation	Civil society organisations, academia	Expand fact-checking cooperation beyond Europe, to include fact-checking organisations on other continents	European Digital Media Observatory (EDMO)	Red
13	Design FIMI tools to target domestic actors	EEAS	Tools designed to fight foreign information manipulation and interference (FIMI) can help tackle the challenges of domestic information manipulation and interference (DIMI)	EU Disinfo Lab	Red
14	Access to information about foreign interference attempts	Commission/ Platforms	Information on the detection, analysis, and mapping of attempts to interfere with democratic processes to be shared openly with journalists, media professionals, academia and fact-checking organisations	European Broadcasting Union	Red
15	Protect media freedom by cutting off disinformation upstream	Commission/ Parliament/ Council	No media exemptions for content moderation in the DSA, as suggested in the EMFA	A 10-point plan to address our information crisis , M. Ressa, D. Muratov, 2022	Red

	Objective/ instrument	Likely lead actors	What could be done?	References (sources of ideas)	Degree of implementation
16	Expand the Global Gateway	EEAS/ Commission	Include a broader spectrum of 'soft' digital infrastructure issues, including local media and knowledge supply chains	European Council on Foreign Relations , May 2023	
17	Conference on the Future of Democracy	All EU institutions, led by the EEAS and the European Parliament	Initiate a Conference on the Future of Democracy – exporting the Conference on the Future of Europe – potentially in the context of the Summit for Democracy		

-
- ¹ In its [push](#) for a coordinated European response to information manipulation, Parliament has used a mix of tools: non-legislative resolutions, hearings and its budgetary power. The latter was used particularly visibly in its support for the East StratCom Task Force. In its November 2016 resolution on strategic communication to counteract anti-EU propaganda by third parties, Parliament called for the StratCom Task Force to be turned into 'a fully fledged unit within the EEAS [...] with proper staffing and adequate budgetary resources, possibly by means of an additional dedicated budget line'. Parliament's amendments to the EU budget for 2018 included the pilot project 'StratCom Plus', aiming to increase capacity to counter information manipulation in and beyond the EU. This effectively resulted in the first dedicated StratCom budget.
 - ² The decision has also sparked criticism that Meta has failed to learn from its experience from 2017, when Facebook's algorithms helped promote anti-Rohingya content in Myanmar, resulting in [real-life violence](#) against the Rohingya people.
 - ³ One example of relevant undertakings is USAID's [Advancing Digital Democracy](#) (ADD) initiative, which aims to support 'open, secure, inclusive, and rights-respecting digital democracies' in partner countries. In the new Promoting Information Integrity and Resilience (Pro-Info) Initiative – introduced in 2023 to strengthen information integrity and resilience globally – USAID will work with Congress to help build digital and media literacy and resilience to information manipulation in partner countries. In cooperation with the State Department, the project promotes technologies that flag manipulated information, while 'prebunking' efforts aim to equip communities to recognise information manipulation.

The European Parliament started monitoring future shocks during the coronavirus crisis, and has continued to do so during Russia's unprecedented war on Ukraine.

The annual 'Future Shocks' series reviews global risks, with a focus on specific risks and the capabilities and resilience of the EU system in the face of multiple challenges. It seeks to provide up-to-date, objective and authoritative information on these risks, based on risk literature from a broad range of sources. 'Future Shocks' includes, but is not limited to, areas where the EU has primary competence, and identifies the benefits of concerted action by the EU as well as the ability of its institutions and Member States to find new and effective solutions to deal with major shocks.

The 2023 edition, the second in this annual series, highlights 15 risks related to geopolitics, climate change, health, economics and democracy that could occur in the coming decade, and 10 policy responses to address existing governance capacity and possible ways to enhance capabilities within the EU. Among the options set out are those previously included in European Parliament resolutions, positions from other EU institutions, and policy papers from think tanks and stakeholders.

EPRS | European Parliamentary Research Service

This document is prepared for, and addressed to, the Members and staff of the European Parliament as background material to assist them in their parliamentary work. The content of the document is the sole responsibility of its author(s) and any opinions expressed herein should not be taken to represent an official position of the Parliament.

PE 751.428
ISBN 978-92-848-0924-0
ISSN 2600-5174
doi:10.2861/88235