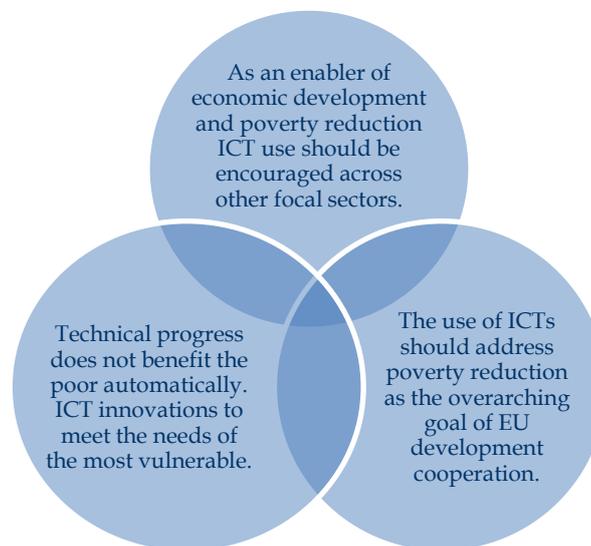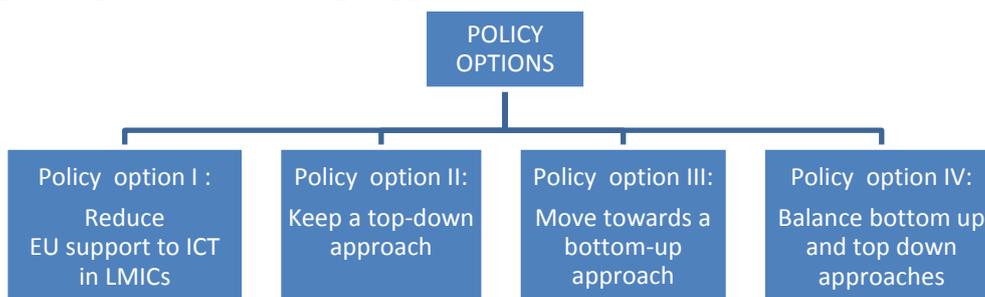# ICT in the developing world

The recent penetration of Information and Communication Technology (ICT) in low and middle-income countries (LMICs) has opened an unprecedented window of opportunities for poor people to participate in and benefit from the information society. As general-purpose technology, ICT can promote a socio-economic progress based on empowerment and participation that can bring about fundamental changes in social structures, including income distribution. Policy options have to be coherent with the general principles that guide EU development cooperation and with the EU approach to ICTs.

Fig. 1 General principles of EU development cooperation and the EU approach to ICTs

As an enabler of economic development and poverty reduction ICT use should be encouraged across other focal sectors.

Technical progress does not benefit the poor automatically. ICT innovations to meet the needs of the most vulnerable.

The use of ICTs should address poverty reduction as the overarching goal of EU development cooperation.

ICT is not a priority sector of the EU development cooperation, but a crosscutting theme to be integrated within focal sectors, such as health or education. EU ICT for Development (ICT4D) interventions are guided by a communication issued by the European Commission in 2001, that would need to be updated to integrate progress in ICT uptake in the developing word. Whereas the lack of an ICT4D strategy increases flexibility, it is also a major limitation, especially in reducing the leadership and federating role of the EU development cooperation in this sector. Within this framework, four possible strategic approaches for EU institutions have emerged. Each option is based on specific assumptions and has its own advantages and disadvantages.
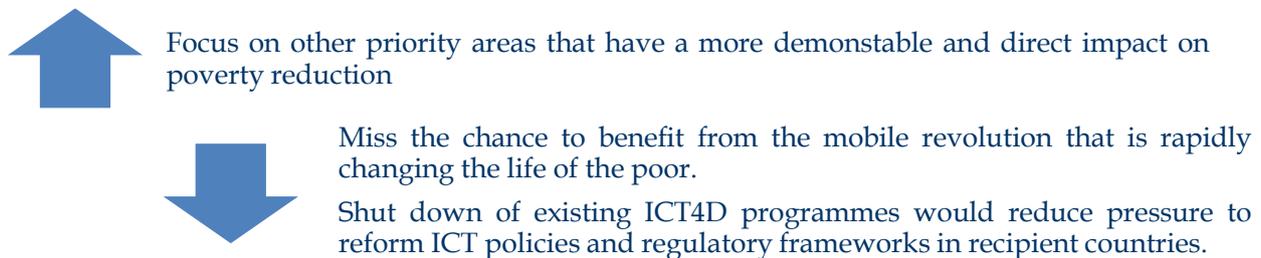
Fig. 2 Four policy options for the strategic approaches of EU institutions

POLICY OPTIONS

Policy option I : Reduce EU support to ICT in LMICs

Policy option II: Keep a top-down approach

Policy option III: Move towards a bottom-up approach

Policy option IV: Balance bottom up and top down approaches

1. Policy Option I - Reduce EU support to ICT4D in LMICs

This option is based on the assumption that, whereas ICT can clearly contribute to economic growth, its role for poverty reduction is more contested. ICT can even enlarge inequalities given that access to ICT is uneven between and within countries. In this line of thought it would be advisable for the EU to focus more on traditional interventions that have more consolidated and proven impact on poverty reduction.

Fig. 3 *Pros* and *contras* of reducing EU support to ICT4D in LMICs

Focus on other priority areas that have a more demonstable and direct impact on poverty reduction

Miss the chance to benefit from the mobile revolution that is rapidly changing the life of the poor.

Shut down of existing ICT4D programmes would reduce pressure to reform ICT policies and regulatory frameworks in recipient countries.
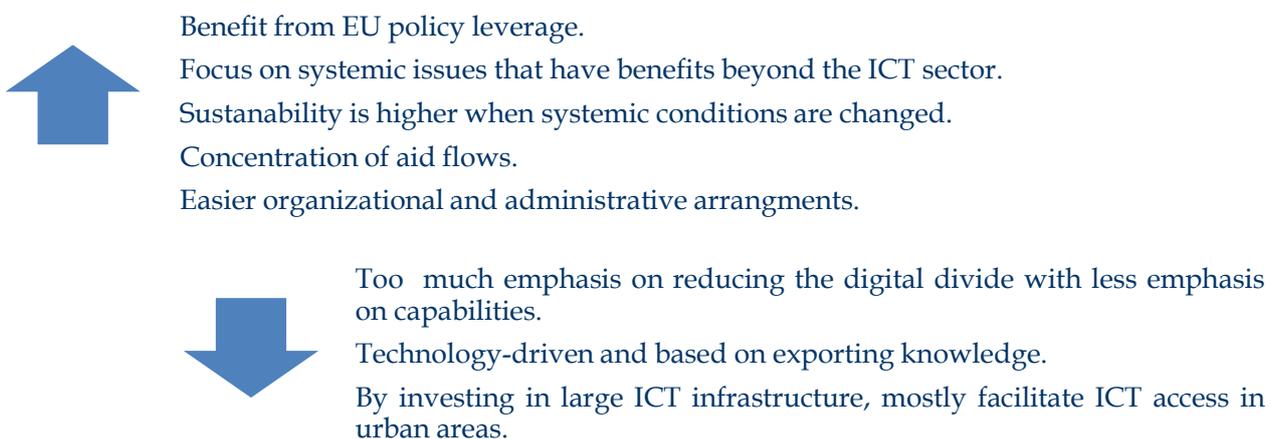
Support from surveyed experts: 3%

2. Policy Option II – Keep a top-down approach

This option capitalizes on past EU experience in promoting ICT. It is set to address the digital divide by providing better infrastructure development in the telecommunications sector and by improving existing policy and regulatory frameworks. This approach looks at the systemic conditions of ICT and is particularly appropriate to address lack of competition that in turn translates in unaffordable prices for ICT access, especially for the internet. In this scenario the EU would continue delivering technical assistance to governments for harmonizing the policy and regulatory framework at country and regional level, and would increase the use of its regional investment facilities to finance ICT-related infrastructure.

Fig. 4 *Pros* and *contras* of keeping a top-down approach

Benefit from EU policy leverage.

Focus on systemic issues that have benefits beyond the ICT sector.

Sustainability is higher when systemic conditions are changed.

Concentration of aid flows.

Easier organizational and administrative arrangments.

Too much emphasis on reducing the digital divide with less emphasis on capabilities.

Technology-driven and based on exporting knowledge.

By investing in large ICT infrastructure, mostly facilitate ICT access in urban areas.
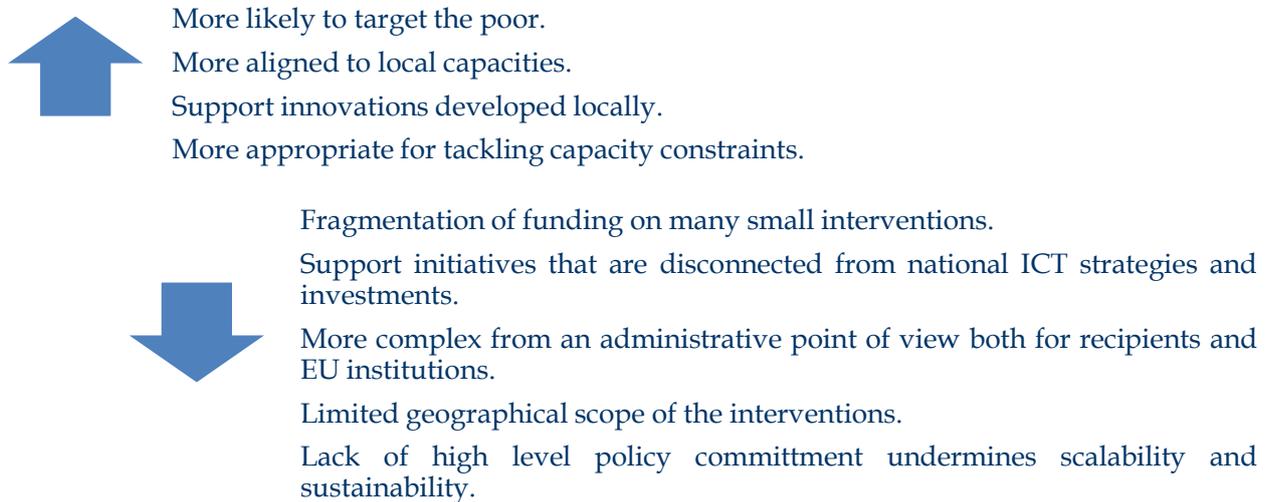
Support from surveyed experts: 7%

3. Policy Option III – Move towards a bottom-up approach

This approach addresses local capacity constraints and is built upon supporting locally developed innovations. It implies that local actors are involved as much as possible in the decision-making process, and its success often depends on the identification of the appropriate change agents. Bottom-up initiatives generally do not need high political support, but are limited in their geographical scope.

Pursuing a bottom-up approach does not do justice to EU development cooperation's competitive advantages. As a matter of fact, there is less experience of this approach within EU development cooperation. A full bottom-up approach would require increased field presence, and a different mix and balance of aid modalities, as compared to the current approach that favours budget support and concentration of aid flows. Most potential beneficiary organizations, would also find too complex to comply with EU grant administrative procedures. This approach is more suitable to support experimental projects, rather than to be applied systematically within EU ICT4D programmes.

Fig. 5 *Pros* **and** *contras* **of moving towards a bottom-up approach**

More likely to target the poor.

More aligned to local capacities.

Support innovations developed locally.

More appropriate for tackling capacity constraints.

Fragmentation of funding on many small interventions.

Support initiatives that are disconnected from national ICT strategies and investments.

More complex from an administrative point of view both for recipients and EU institutions.

Limited geographical scope of the interventions.

Lack of high level policy commitment undermines scalability and sustainability.
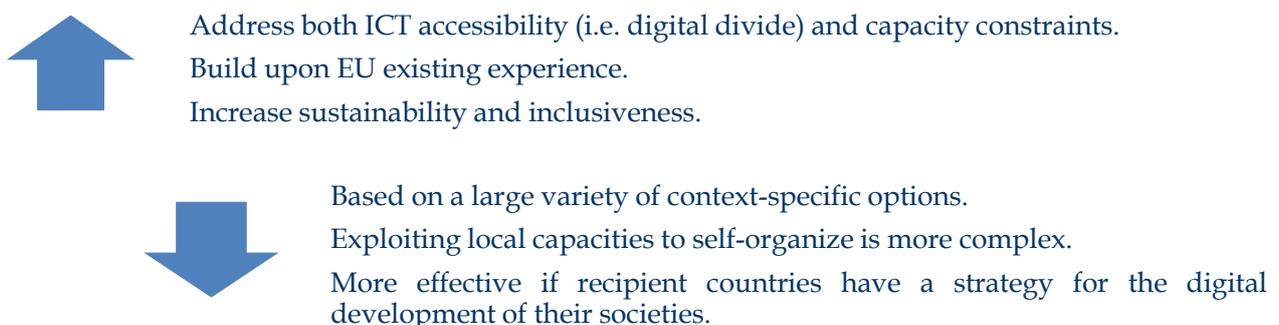
Support from surveyed experts: 26%

4. Policy option IV - Balance bottom-up and top-down approaches

A mixed-approach, which balances top-down and bottom-up ICT4D initiatives, can address access and capacity constraints in parallel, achieving thus greater results in terms of economic growth and poverty reduction. It is based upon a variety of options that consider country-specific circumstances in the recipient country, including level of development, strength of governmental institutions, and strength of civil society and private sector. By bridging the digital divide and increasing digital literacy it builds a more inclusive and sustainable ICT4D approach.

The EU could build upon its existing experience in addressing systemic obstacles to ICT access (i.e. infrastructure and regulation) and in establishing research networks and partnerships that support ICT innovation in developing countries. The challenge for the EU is to enlarge the target of its bottom-up ICT4D initiatives beyond universities and research centers, in order to reach out to the private sector and civil society organizations.

Fig. 6 *Pros* **and** *contras* **of balancing bottom-up and top-down approaches**

Address both ICT accessibility (i.e. digital divide) and capacity constraints.

Build upon EU existing experience.

Increase sustainability and inclusiveness.

Based on a large variety of context-specific options.

Exploiting local capacities to self-organize is more complex.

More effective if recipient countries have a strategy for the digital development of their societies.

Support from surveyed experts: 52%

5. Cross-cutting challenges

In spite of the strategic approach pursued for promoting ICT in developing countries, there are a number of cross-cutting policy options that would need to be carefully considered, as evidence shows that these have relevant impacts on the effectiveness of donor interventions.

5.1 Donor coordination

Lack of donor coordination is a well-known issue in development cooperation. Duplication and fragmentation of European development aid is widespread, as argued in the 'Mapping the Cost of Non-Europe' report of the European Parliament (EP).* In December 2013 the EP adopted a legislative initiative resolution with recommendations to the European Commission on this subject.** In ICT projects, that are often based on specific technologies, the lack of donor harmonization creates a plethora of small-scale interventions that cannot be scaled up at the national level because they lack interoperability. This appears to be particularly relevant in e-health projects, which are too much driven by single-donor-driven experimental approaches. In this respect, the EU could increase its leadership and federating role with other European donors by establishing common platforms and systems for implementing ICT4D programmes.

5.2 Alignment with local systems

In supporting ICT in developing countries donors sometimes develop "parallel systems" that compete or are not compatible with local conditions and capacities. There is too much pressure about exporting knowledge and technologies from donor countries. This is particularly evident in the health sector, that in most low income countries heavily depends on external assistance. EU should increase its efforts towards supporting locally-developed IT applications that are better targeted to the needs of local populations and have a higher chance to become sustainable without donor support.

5.3 Mainstreaming of ICTs

There is a large consensus that mainstreaming ICT in development programmes is the right way to go. However, donors, including the EU, that do not have a clear-cut policy or strategy for promoting ICT face many challenges while implementing this approach. To be effective this approach would require to:

- Raise awareness about the potential use of ICT in development programmes and aid delivery systems;
- Establish an ICT dedicated unit that would assess the possible use of ICT in sector specific programmes and support programme design.

An alternative to full mainstreaming ICT, would be to prioritize the use of ICT in a limited number of sectors, that could be also identified on a case by case basis depending on the specific country context. In this respect, this study found out that education and health are the two sectors where the use of ICTs can benefit the poor the most.