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Economic and Monetary Affairs

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Industry, Research and Energy

Internal Market and Consumer Protection



**Briefing for the ENVI  
delegation to Turkey  
Food Safety and Public  
Health situation in Turkey**

ENVI





**DIRECTORATE GENERAL FOR INTERNAL POLICIES**  
**DIRECTORATE A: ECONOMIC AND SCIENTIFIC POLICY**

# **Food safety and Public Health situation in Turkey**

## **ENVI Delegation (2-4 November 2011)**

### **NOTE**

#### **Abstract**

Part 1 reviews the Turkish food and drink industry, the organisations and controls involved in food safety, food safety concerns, the risk management and risk communication of animal diseases and finally the status of the preparation of Turkey against the acquis in the area of food safety.

Part 2 shows that the Health status in Turkey has improved over the last decade, and for many health indicators Turkey has come closer to average EU levels. Since 2003, the Turkish government has implemented a major reform programme to improve healthcare. These reforms appear to have played a role in the improvements in health status. Despite the reforms, the health care system faces ongoing challenges including: a lack of qualified healthcare staff and facilities, and regional disparities in access to and uptake of health services.

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## **PART 1: FOOD SAFETY SITUATION IN TURKEY**

### **LIST OF ABBREVIATIONS**

<b>AI</b>	Avian Influenza
<b>ADNS</b>	Animal Disease Notification System
<b>BIP</b>	Border Inspection Post
<b>CA</b>	Competent Authority
<b>CCA</b>	Central Competent Authority
<b>ENVI</b>	Environment Committee
<b>EC</b>	European Commission
<b>EP</b>	European Parliament
<b>EU</b>	European Union
<b>EUROSTAT</b>	Statistical Office of the European Communities
<b>FMD</b>	Food and Mouth Disease
<b>FVO</b>	Food and Veterinary Office
<b>GDP</b>	Gross Domestic Product
<b>GDPC</b>	General Directorate of Protection and Control
<b>GMO</b>	Genetically Modified Organism
<b>HACCP</b>	Hazard Analysis and Critical Control Points
<b>IATC</b>	International Agri-Technology Centre
<b>MARA</b>	Ministry of Agriculture and Rural Affairs
<b>MoFAL</b>	Ministry of Food, Agriculture and Livestock
<b>MRG</b>	Mass Retail Grocery
<b>MRL</b>	Maximum Residue Level

- ND** Newcastle Disease
- OIE** World Health Organisation of Animal Diseases
- PPP** Plant Protection Product
- R&D** Research and Development
- RASFF** Rapid Alert System for Food and Feed
- RMP** Residues Monitoring Plan
- TGDP** Turkish Food and Drink Federation
- TRY** Turkish Lira (Exchange Rate Euro/TRY 2.54 FT 24.10.2011)
- TSE** Transmissible Spongiform Encephalopathy
- TURPAK** Turkish Accreditation Agency
- WAHID** World Animal Health International Database

## EXECUTIVE SUMMARY

### Background

This briefing has been prepared in relation to the Environment Public Health and Food Safety (ENVI) committee of the European Parliament delegation visit to Turkey scheduled for November 2011.

### Aim

The report reviews the Turkish food and drink industry, the organisations and controls involved in food safety, food safety concerns, the risk management and risk communication of animal diseases and finally the status of the preparation of Turkey against the *acquis* in the area of food safety.

The EU member states are Turkey's main trading partners, with approximately 45% of Turkish total exports destined for the EU-27 countries. Main exports include fruit and vegetables. Traditionally the agricultural industry in Turkey has been the largest sector and a major contributor to the country's GDP, exports and industrial growth. As the country has developed, however, agriculture has declined in importance relative to the rapidly growing industrial sector.

The food and drinks industry in Turkey employed almost one million people in 2007. Most of the sector comprises small to medium-sized enterprises, which are mostly privately owned. However, the number of foreign owned companies in both food and drinks manufacturing, and agriculture, is increasing.

Consumption patterns have also been shifting to packaged and processed foods, such as ready-to-eat meals and frozen foods and the increase in the number of women in full-time employment has supported this trend. Whilst the large number of small and medium enterprises may lack the resources and capability to operate according to European Community norms the penetration of larger international companies and the growth of supermarkets in the domestic market is an important driving force behind food quality and safety.

The main organisation responsible for food safety is the Ministry of Agriculture and Rural Affairs (MARA) although this is shortly to be restructured and renamed the Ministry of Food, Agriculture and Livestock (MoFAL). This forms a central organisation for the control of all aspects in this area. Although the re-organisation will not be implemented until next year this represents a positive step towards strengthening the official control system.

A notable development in the legislative control of food safety in line with Community norms has been the introduction, in December 2010, of the Veterinary Services, Phytosanitary, Food and Feed Law No 5996. It puts in place the powers to license food production establishments in technical and hygienic terms and to establish an efficient audit and control system.

Recent concerns relating to products originating from Turkey have been the high number of notifications concerning the presence or elevated levels of mycotoxins and pesticide residues; veterinary residues and the approval of establishments. These are discussed in the light of recent FVO reports and progress achieved in these areas.

The control of animal diseases remains a concern and incidences are high, particularly of Foot and Mouth Disease (FMD). The 2011 European Commission reported that a FMD contingency control plan had not yet been adopted although the regulation to control FMD has now entered into force. An intensive FMD vaccination programme and strict movement measures had been implemented between Thrace and Anatolia and Thrace has retained its status of FMD-free with vaccination.

Turkey has fulfilled its obligations with respect to notifications to the World Organisation for Animal Health (OIE) and began notifications to the European Animal Disease Notification System (ADNS) in 2009. A regulation on the notification of animal diseases has entered into force.

Efforts have been made to bring the system of identification and registration of bovines and their movements in line with the *acquis*. A system of identification and registration of ovine and caprine animals has started across the whole country although there has been no progress on the control of the commercial movement of pet animals. Introduction and operation of Border Inspection Posts is not yet complete.

A review of establishments for products of animal origin has been conducted. Steps for developing a national upgrading plan have started.

Turkey has prepared a detailed strategy for the transposition, implementation and enforcement of the *acquis*. Recent progress reports by the European Commission note that significant progress has been made towards harmonisation of Turkish laws to the *acquis*. Further work is however needed to bring the overall control system in line with EU legislation. In particular:

- Animal health and the upgrading of agri-food establishments into compliance with the EU hygiene and structural requirements still requires considerable effort:
  - Legislation transposing the hygiene package and specific rules concerning animal products has yet to be adopted. Steps for developing a national upgrading plan for agri-food establishments has however started.
  - Foot and Mouth Disease contingency plans are still to be enforced and the eradication programme extended to the rest of the country.
  - Border inspection posts are not yet fully operational. Additional specialised staff are required so that phytosanitary and veterinary checks are intensified
  - The incidence of Brucellosis remains high but is decreasing. Incidents of Salmonellosis, Campylobacteriosis and *Escherichia coli* O157 however appear to be increasing.
  - Work is yet to start on TSE; Animal welfare; Feed Hygiene and Controls on the non-commercial movement of pets
- Improvements have been seen however laboratory capability, scope and quality need to support legislative requirements with respect to pesticide, veterinary residue and contaminant analysis to accredited/validated methods. National Reference Laboratories need to be fully operational.

- Detailed follow-up of RASFF investigations required, for example at the growers level in the case of pesticides.
- Support and training for SMEs to comply with new regulations and requirements.

## **Conclusions**

Turkey has therefore made good progress in achieving harmonisation with EU legislation, particularly with the formation of a central organisation and overarching legislation in this area. Areas requiring further work include the control of animal diseases, animal welfare, Feed hygiene and controls, the approval of establishments and the implementation of hygienic principles. The penetration of larger international companies and the growth of the mass retail and food service sectors, coupled with changing consumer patterns, are additional drivers behind food quality and safety

## 1. INTRODUCTION

This briefing on food safety in Turkey has been prepared for the Environment, Public Health and Food Safety Committee (ENVI) Delegation to Turkey in November 2011. It addresses:

- The structure of the food safety and control system;
- Risk management and risk communication of certain animal diseases, notably Foot and Mouth Disease;
- Preparedness (based on the *acquis communautaire*) for Community membership in the area of food safety and forthcoming challenges.

### 1.1. Method

Earlier reviews (Koletzko 2006, 2008; Guittard 2006) have examined the subject. This paper, therefore focuses particularly, but not exclusively, on developments since 2008.

Sources of information:

European Commission's Food and Veterinary Office (FVO) reports were reviewed to inform an evaluation of the progress made by Turkey in relation to Chapter 12 of the *acquis* - Food safety, veterinary and phytosanitary policy. The FVO helps to ensure that Community legislation on food safety, animal health, plant health and animal welfare is properly maintained and enforced. Its inspections assure effective control systems and evaluate compliance with EU standards in third countries in relation to their exports to the EU. Turkey was granted candidate country status in 1999 and accession negotiations were started in 2005. Turkey has therefore been the subject of four reported FVO inspections since 2008.

Progress reports of the European Commission (2010, 2011) and a Screening Report (2007) were examined to evaluate Turkish progress against the *acquis communautaire*.

The scientific literature was searched and the websites and publications of various regulatory authorities were examined.

## 2. AGRICULTURE, FOOD PRODUCTION AND EXPORTS

### KEY FINDINGS

- Approximately 45% of Turkish Exports are destined for EU-27 countries
- The main exports are fruit (citrus, grapes, pineapple), vegetables (sweet peppers, tomatoes, cucumbers, courgettes, aubergines and green beans) and nuts
- Traditionally agriculture has been the largest sector but has recently declined in importance relative to the rapidly growing industrial sector
- The food and drink processing industry has grown rapidly, representing 19.6% GDP in 2009 and employing one million people. Most enterprises (23.7%) were in the processed fruit and vegetable sector followed by processed bakery products (19.5%).
- The sector is formed mostly of privately owned small- to medium-sized enterprises but the number of foreign owned companies is increasing and major international food production and outlet companies are becoming established
- Consumption is shifting towards pre-packaged and processed foods (ready-to-eat meals and frozen foods) and the mass retail grocery and food service sectors are also growing

This chapter provides general and background information concerning the status and developments of the Turkish food industry.

Turkey is one of the largest of the candidate countries for EU membership with a 2009 population of approximately 72 million. The World Bank (World Bank, 2011) reports Turkey as being one of the world's 20 largest economies in 2008. The economic crisis has seen gross domestic product (GDP) fall in 2009 by 4.7%.

The value of Turkish exports has more than doubled in recent years with the EU-27 countries as the main trading partners. Exports to the EU were valued at about 73 million euro in 2009 (Eurostat, 2011).

Agriculture represents 8% of Turkey's gross domestic product (GDP). The main areas of production are cereals, meat and fish. Traditionally the agricultural industry in Turkey has been the largest sector and a major contributor to the country's GDP, exports and industrial growth. As the country has developed however agriculture has declined in importance relative to the rapidly growing industrial sector.

Whilst poultry accounts for 75% of the meat production, the national sheep and goat herd represents approximately 30% of that in the EU-27 although it fell from 36 million to 27 million between 2000 and 2009 (Eurostat, 2011). There is little pig production (Eurostat, 2011) and beef and veal production (610,000 tons in 2009) has not grown due to high feed costs. (Republic of Turkey Prime Ministry, Turkish Agriculture 2010).

In 2010 Turkey exported 676,000 tonnes of fresh fruit (5.3% of the total imports to the EU) mainly citrus (oranges, mandarins, lemons), table grapes and pineapples. and was the fifth largest exporter. It was the fourth largest exporter of vegetables, supplying approximately 362 000 tonnes or 9.3% of the total imports to the EU (mainly sweet peppers, tomatoes, cucumbers, courgettes, aubergines and green beans).

Between 1998 and 2009 the food and drinks industry has grown more rapidly than that of the GDP (Eurostat Farm to Fork Statistics, 2011) and at TRY 8,852 million was reportedly 19.6% in 2009. The share of food and drink products manufacturing as a proportion of total manufacturing capability increased from 8.7% in 2005 to 12.8% in 2009. Nearly a million people are employed in the sector.

The number of active companies in the food and beverage industry fell from 23,276 in 2007 to just over 17,000 in 2009. Most of the Turkish food and beverage sector comprises privately owned small- to medium-sized enterprises. Traditional Turkish purchasing patterns involve buying fresh food daily. The mass retail grocery (MRG) sector is growing – supermarkets now account for 40% of food retail sales (Republic of Turkey Prime Ministry, Turkish Food and Beverage Report 2010). The widespread presence of MRG outlets coupled with rising disposable incomes, has led to increased consumption of packaged and processed foods, such as ready-to-eat meals and frozen foods. The growth of women in full-time employment has also supported this trend (Report of the Turkey Prime Ministry, Food & Beverage 2010). The food service industry is also expanding due to investment in fast food establishments, young consumer eating habits and the growing tourism industry (UKTI/IATC, 2008)).

The number of foreign owned food and drink manufacturing companies increased sharply from 167 in 2003 to 420 in 2009. Similarly in agriculture the figures increased from 103 to 367. The establishment of major international food production companies (Republic of the Turkey Prime Ministry, Food and Beverage Report 2010; Agriculture Report 2010) and the penetration of supermarkets into the domestic retail market is a further important driving force behind food quality and safety.

### 3. THE STRUCTURE OF THE FOOD SAFETY AND CONTROL SYSTEM

#### KEY FINDINGS

- Progress has been made in organisational and legislative restructuring to transpose and implement the acquis.
- The Ministry of Agriculture and Rural Affairs has been restructured by Decree 639, June 2011, to form a new central and regional structure to control food safety, veterinary and phytosanitary policy.
- An overarching Veterinary Services, Phytosanitary, Food and Feed Law No 5996, implemented in December 2010, reflects the requirements of the General Food Law Regulation 178/2002.
- Analytical studies and compliance monitoring are conducted

#### 3.1 Principal Organisations

Hitherto, the Ministry for Agriculture and Rural Affairs (MARA). has been primarily involved in relation to food safety with responsibility for all food stages from production to consumption, food safety inspections, animal welfare and agricultural production. However MARA has been recently restructured by Decree 639 (Official Gazette No 27958, 3 June 2011), establishing from June 2012 the organisation, duties, powers and responsibilities of the new Ministry of Food, Agriculture and Livestock (MoFAL). Until then the current arrangements apply.

The Ministry will consist of central, provincial and foreign administrations. Whilst under MARA there were five service units; under MoFAL there will be seven:

Comparison of General Directorates under MoFAL and MARA:

MoFAL	MARA
<ul style="list-style-type: none"> <li>• Food and Control</li> <li>• Animal Husbandry</li> <li>• Fisheries and Aquaculture</li> <li>• Plant Production</li> <li>• Agricultural Reform</li> <li>• Agricultural Research and Policy</li> <li>• EU and External Relations.</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural Production and Development</li> <li>• Agricultural Research</li> <li>• Protection and Control</li> <li>• Foreign Relation and EU Control</li> <li>• Support and Organisation</li> </ul>

MARA consists of a central office but it is also represented in each of 81 provinces, where it is responsible for food control/inspections, veterinary and phytosanitary checks, and in some 800 districts. In addition there are 40 Provincial Control Laboratories, nine Veterinary Control and Research Institutes, one Food Control and Research Institute and four Research Institutes on Plant Protection.

MARA's General Directorate for Protection and Control (GDPC) is responsible for activities relating to food safety, veterinary and phytosanitary policy including food legislation, registration of local manufacturing of food and feedstuffs, defining strategies and procedures, and the training and education of MARA employees. It is also the contact point for international institutions and agencies. The provincial offices are responsible for the registration of imported products, inspection of plants, inspection of markets, customs controls and analysis.

Under GDPC there are 81 Provincial Directorates and 801 District Directorates. The provincial directorates are made up of the Plant Protection Unit, Farmer Supervision Unit, Control Unit, Animal Health Unit, Project Statistics Unit and the Support Unit as well as administration and financial affairs. (Screening Chapter 12, Country Session: Republic of Turkey, 24-26 April 2006)

### **3.1.1 Other Ministries and Public Institutions:**

Other public bodies with more limited responsibilities for food safety include:

The Ministry of Health (MoH) (General Directorate of Primary Health Services), which deals with the inspection, safety and quality of drinking water and usage. The MoH also has the right to intervene in public health emergencies.

The Ministry of the Interior, working via municipalities and special provincial administrations, licences and registers food establishments. Although separate arrangements apply within what are termed Organised Industrial Areas.

The Ministry of Environment and Forestry is responsible for the protection of animals, GMOs and forestry propagating materials.

The under secretariat of Foreign Trade carries out export controls in accordance with the National Standards of the Turkish Standards Institute

Local municipalities are responsible for safety inspections in the food service sector.

Finally the Ministry of Industry and Commerce is responsible for supporting SMEs.

### **3.1.2 Other Organisations**

Other organisations, although not directly involved in making and implementing legislation, do contribute to its development and application. For example the Turkish Accreditation Agency (TURPAK) which is responsible for accessibility of standards and quality audits worldwide; the Turkish Standards Institution, prepares Turkish food standards and harmonises some of these with Codex Alimentarius standards; and the Turkish Food and Drink Federation (TGDF), which is the largest non-governmental organisation of the Turkish food and drinks sector.

## **3.2 Legislation**

In 2010 pre existing laws on food, feed, veterinary services and plant health were rationalised into one overarching instrument; The Veterinary Services, Plant Health, Food and Feed Law No 5996, published on June 13 2010 and implemented on December 13 2010 (Official Gazette N0 27610), which reflects the requirements of the General Food Law regulation EC 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

Law No 5996 also provides for the licensing of food production workplaces and the establishment of an efficient audit and control system.

The legislation requires a new approach to enforcement in the case of non-compliances, including a system of fines rather than the existing administrative sanctions, including warnings and notifications. Competent authorities are also able to require the disposal of non-compliant product and, in the case of a direct or indirect risk to consumers, for the non-compliant operator to be prosecuted (FVO, 2011a)

These developments led the 2010 progress report (EC Turkey 2010 Progress Report COM(2010) 660) to conclude that food safety, veterinary and phytosanitary policy progress had been achieved and that the new alignment should facilitate transposition and implementation of the relevant *acquis*.

## **3.3 Laboratories**

Official laboratories carry out the analytical studies for monitoring compliance and identifying issues within the food chain. There are three types of laboratories, namely the Veterinary Control and Research Institute Laboratories, Provincial Laboratories and Plant Health Laboratories:

### **3.3.1 Veterinary Control and Research Institutes**

The GDPC's Animal Health Services Department is responsible for the appointment and control of veterinary laboratories. There are eight veterinary control and research Institutes which act as regional laboratories for animal diseases and one specialist Foot and Mouth Disease Institute laboratory.

### **3.3.2 Provincial Control Laboratories**

The GDPC's Public Health Services Department is responsible for coordinating the 39 Provincial Control Laboratory Directorates, one food control and a central research institute that all carry out official controls of food as well as for appointing 25 private control laboratories to carry out food analysis.

### **3.3.3 Plant Health Laboratories**

There are seventeen plant health laboratories, comprising four Plant Protection Research Institutes, seven Agricultural Quarantine Laboratories, five Seed Certification Central Directorates and one registration and certification central directorate. The Plant Protection Research Institutes also deal with quarantine controls and monitoring programmes.

Certain laboratories are accredited in accordance with EN ISO/IEC 17025 on 'General requirements for the competence of testing and calibration of laboratories'. These include one for animal health and food analysis; six for food and feed analysis and two private laboratories for food analysis.

Other laboratory facilities also exist at the Ministry of Health, Undersecretariat for Foreign Trade; Turkish Standards Institute; TUBITAK Marmara Research Centre, ten municipal laboratories and one University laboratory.

## 4. OVERVIEW OF FOOD SAFETY

### KEY FINDINGS

- Products originating from Turkey have been the subject of a high number of notifications in the RASFF system. These mostly relate to mycotoxins in fruit, vegetables and nut products and seeds or the presence or elevated levels of pesticide residues in fruit and vegetables. Sweet peppers and tomatoes are subject to increased controls due to the problem of pesticide residues.
- Legislation relating to plant protection products (PPPs) has entered into force although further alignment is required for non-authorized substances.
- Legislation on genetically modified organisms is not aligned with the EU acquis
- The classification of agri-food and animal by-products establishments has been completed. Action is required to bring these into line with EU hygiene and structural requirements. The development of a national upgrading plan has started but legislation transposing the hygiene package, and specific rules for animal products, has yet to be adopted.

This chapter considers the assessment of the effectiveness of food safety controls.

### 4.1 Reported Incidents

The European monitoring system for reporting, recording and exchanging information about measures taken responding to serious risks detected in relation to food or feed is the Rapid Alert System for Food and Feed (RASFF)<sup>1</sup>. Products originating from Turkey have been the subject of a large number of notifications. Turkey has repeatedly been ranked second highest in terms of the number of such notifications (RASFF Annual Reports 2007, 2008, 2009). The majority of alerts related to the presence of mycotoxins and pesticide residues.

In addition there were 20 reported border control issues where Turkey allowed products, which did not originate from Turkey, to be imported that were later found with hazards. Nearly all of these were nut products. This may reflect a need for further control of such products when transiting the country en route to the EU.

Those products most often the subject of notifications (RASFF database) include fruit and vegetables, and nut products and seeds. Notifications relating to mycotoxins in fruit and vegetables and in nut products and seeds decreased in 2011 for the former and in 2010 and 2011 for the latter. This may reflect better control of products to address this issue. In contrast pesticide residue notifications increased, perhaps reflecting increased scrutiny and/or the implementation of new regulations to reflect EU controls. The numbers of incidents therefore, whilst acting as a broad guide to a potential problem, may equally be a function of increased level or effectiveness of controls or advances in analytical technique.

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<sup>1</sup> Turkey is not currently a member of the RASFF system. Notifications result when a food or feed inspector has inspected a product at the border or on the market. The Commission must inform a non member of RASFF when a product originating from that country has been the subject of a notification. The country can then take corrective action as appropriate.

The high number of incidents relating to products from Turkey is a cause for concern, particularly those relating to mycotoxins and pesticides, considering the high volume of fruit and vegetable exports to the EU. Mycotoxins and pesticide residues have been the subject of four recent FVO reports (FVO, 2008, 2009, 2010, 2011) which thus chart developments in this area.

Initial reports found no formal control procedures established for users; there was no specific control system in place for pesticide residues in food of plant origin intended for export to the EU; although RASFF follow-up took place, sources of maximum residue limits (MRLs) being exceeded were not always fully investigated, in particular with growers; analytical methods and equipment covered only part of the range of pesticides being used by farmers; validity of the analytical data was not monitored sufficiently closely.

The Competent Authorities (CAs) were in the process of systematically withdrawing from the market pesticides which were not authorised for marketing and use in the EU. In addition a new version of the official register of authorised plant protection products (PPPs) was being prepared. Other measures to bring controls in line with EU legislation included the training and certification of users of PPPs, the sale on prescription of PPPs and the requirement for keeping records of PPP uses.

Significant efforts to introduce new legal requirements within the scope of the audit and implementation of the existing national legislation were reported, in particular for controls on the marketing and use of plant protection products. An important step is the introduction of EU MRLs. New legislation had been introduced for the control of pesticide retailers and growers. However, a structured approach in official controls at growers had not yet been implemented. Legislation has now entered into force in the area of plant protection products concerning licensing, packaging and labelling, control, methods and principles and production practices.

## **4.2 Monitoring Capability (Veterinary residues)**

Commission Decision 2004/432/EC indicates that Turkey's residues monitoring plan (RMP) is approved in accordance with Council Directive 96/23/EC for poultry meat, aquaculture products (fin fish), milk and honey.

Veterinary residues have been the subject of a recent FVO report (FVO 2011b). The conclusions of the report agree with those of the earlier EU report in noting that procedures have improved (from earlier reports in 2005 and 2007) with the implementation and follow up of a national monitoring plan and control of veterinary products, however deficiencies were noted in some laboratories and the inability to test for all substances was of concern.

Whilst the RMP was largely in line with the EU requirements the effectiveness of the plan was weakened by the limited scope of testing for some commodities. While follow-up investigations were found to be carried out for all non-compliant results in the RMP, their effectiveness was hampered by the time taken by the competent authorities to complete their investigations.

Notwithstanding some shortcomings in analysis due to equipment breakdowns, the mission concluded that the competent authority can have confidence in the analytical results of the laboratories. The authorisation of veterinary medicinal products and distribution by authorised wholesalers, pharmacies and veterinary clinics was also found to have been implemented to a standard equivalent to EU legislation.

### **4.3 Import Restrictions**

Following the lack of implementation of adequate internal measures, controls on imports into the EU of live poultry, fresh poultry meat and heat treated products were introduced in 2008 as a result of outbreaks of Avian influenza.

Sweet peppers and tomatoes are the subject of increased controls due to problems of pesticide residues referred to above.

### **4.4 Classification and Approval of Establishments**

The classification of agri-food and animal by-products establishments has been completed. A key element is action to bring these into line with EU requirements. Establishments are licensed for export to the EU in the areas of meat products (8); Live bivalve molluscs (19); Fishery products (89); Treated stomachs, bladders and intestines casing only (21); Gelatine (1); Processing plants (7) and pet foods (inc dog chews & Flavouring innards) (6). (Europa -Third country establishments – List by country).

Initial steps for developing a national upgrading plan for agri-food establishments have started. Responsibilities have been assigned, administrative capacity strengthened and an annual inspection and monitoring programme implemented.

A recent study (Koc, 2009) compared the application of food management systems (ISO 22000/HACCP) in the Turkish poultry industry based on enterprise size. The survey concluded that large firms (> 250 staff) adopted more stringent schemes and made better use of government support services than SMEs (<250 staff). Large firms were also more aware of, and able to deal with, risks from a greater range of contaminants.

Various types of establishments have been the subject of FVO missions (FVO 2008b, FVO 2008c):

#### **4.4.1 Milk and Milk Products**

No milk processing establishments in Turkey have been authorised for export to the EU since 2001. At the time of the mission (FVO, 2008b) four dairy establishments were seeking EU approval. The Central Competent Authority (CCA) had drawn up new instructions and initiated the modification of Turkish legislation. Nevertheless the CCA had not yet taken the appropriate action to verify that these new instructions had been properly implemented. The dairy holdings producing EU eligible milk were not approved according to the new instruction. The introduction of the new rules at regional level was not uniform.

The establishments visited were in line with EU requirements regarding lay-out, structure, equipment, maintenance and hygiene. The checks carried out by Food Business Operators were also acceptable. Progress remained to be achieved in relation to procedures and instructions which needed to be put in place to demonstrate proper separation of the EU and non EU eligible production. In addition, HACCP plans were still not modified to reflect this separation.

#### **4.4.2 Fish and Fishery Products**

Turkey is listed in the most recent amendment to Decision 2006/766/EC as regards the list of third countries and territories from which imports of fishery products in any form for human consumption are permitted.

The Report concluded that the competent authority had put in place a clear and systematic control system with regular checks and frequent pre-export testing. The establishments visited were reported overall to be in adequate condition. There were, however, significant deficiencies, such as lack of adequate controls on histamine, no control of vessels and lack of effective controls on HACCP plans. There was a system for checks on organoleptic criteria and parasites, although often these checks were not well documented. In the case of contaminants, the CA had a monitoring system in place, and the results were generally compliant, although inorganic tin in canned fishery products was not yet tested for. The CA carried out checks on water quality, but these did not cover Enterococci as indicators. At the time of the mission the competent authority had already started to take corrective actions, particularly concerning controls on histamine.

The FVO concluded that the premises visited were, overall, in a satisfactory condition, although some deficiencies had not been detected by the competent authority, such as inadequate labelling concerning additives.

Overall, although there were some areas of concern, potential risks were mitigated by the generally satisfactory guarantees provided by the Turkish control system.

## 5. RISK MANAGEMENT AND RISK COMMUNICATION OF CERTAIN ANIMAL DISEASES

### KEY FINDINGS

- The incidence of animal disease remains high.
- A regulation on the notification of animal diseases has entered into force.
- Foot and Mouth Disease is endemic. A regulation on the control of Foot and Mouth Disease has entered into force but the FMD contingency plan has not yet been adopted. Thrace, however, retains its FMD-free status with vaccination. This results from strict movement control measures and an intensive vaccination programme.
- A system of ovine and caprine identification and registration has started.
- There has been no progress on the registration of commercial pet movements or on animal welfare.
- The incidence of Brucellosis remains high but is decreasing. Those of Salmonellosis, Campylobacteriosis and *Escherichia coli* O157 appear to be increasing.

This chapter reviews the current situation relating to the prevalence of animal diseases, the occurrence of zoonoses and considers Foot and Mouth Disease (FMD) and further considers Avian Influenza and Newcastle Disease.

### 5.1 Overview of Animal Diseases

The European Commission 2011 progress report noted that efforts are continuing in combating animal diseases, the key elements of which include the control and eradication of animal diseases, in particular Foot and Mouth disease (FMD) and Transmissible Spongiform Encephalopathy (TSE), and the notification of animal diseases. A regulation on the notification of animal diseases has entered into force. Turkey has contributed to its international obligations and submitted timely notification of animal diseases via the World Organisation for Animal Health (OIE). Although an informal member, Turkey began submitting data to the EU Animal Disease Notification system (ADNS) in 2009.

The presence of animal disease remains high and therefore represents a potential hazard in trade. Data from 2007 (OIE, WAHID) to date indicates that Anthrax, Brucellosis, FMD, Newcastle Disease, Peste des petit ruminants, Rabies and Sheep pox and goat pox have been reported every year; Avian Influenza has not been reported since 2008 whilst Bluetongue was not reported in 2007 – 2009 but has been reported in 2010 and 2011)

## 5.2 Specific Animal Diseases

### 5.2.1 Foot and Mouth Disease (FMD)

FMD is a highly infectious disease which spreads rapidly if not controlled. The disease is serious for animal health. It is debilitating and causes significant reductions in productivity, for example milk yields may drop.<sup>2</sup> Foot and Mouth Disease (FMD) is endemic in Turkey.

In 2010 Turkey reported outbreaks of FMD across most regions on the Asian side of the country, believed to be indicative of increased reporting. This was seen as an encouraging step as reporting is considered to be an important early step in control. More outbreaks were reported from all regions on the Asian side although there was no sign of spread to the European (Thrace) side, despite an outbreak in its neighbour, Bulgaria. Control measures adopted by Turkey include quarantine, movement control within the country, screening, zoning, disinfection of infected premises/establishments, modified stamping out and vaccination. Sources of the outbreaks are identified as contact with infected wild species (wild boar), introduction of new live animals, illegal movement of animals, contact with infected animals at grazing/watering and animal market. In 2010 Turkey reported over 900 outbreaks of FMD. Experts suggested this may be due to vaccination failure, low levels of vaccination, lack of control, and high levels of natural immunity (OIE, Defra – Food and Farming group, 2008-2011).

The European Commission Progress report 2011 noted that a FMD contingency control plan had not yet been adopted; however the regulation on the control of FMD has now entered into force. An intensive FMD vaccination programme and strict movement measures have been implemented between Thrace and Anatolia which appeared to be effective as although FMD outbreaks increased substantially in Anatolia, Thrace retained its status as FMD-free with vaccination.

### 5.2.2 Avian Influenza (AI) and Newcastle Disease (ND)

Influenza viruses circulating in animals pose threats to human health. Humans can become ill when infected with viruses from animal sources, such as avian influenza virus subtypes H5N1 and H9N2. The primary risk factor for human infection appears to be direct or indirect exposure to infected live or dead animals or contaminated environments. (WHO, Influenza).

Newcastle disease (ND) is a highly contagious disease of birds. Early reporting, rapid action, biosecurity, culling and surveillance remain the most effective way of disease prevention (Defra, Food and Farming, Newcastle Disease).

Avian Influenza was considered in the earlier reports (Koletzko 2006; Guittard 2006). Import controls were placed on live poultry, fresh poultry meat or heat treated poultry products from Turkey into the EU in 2008 as a result of outbreaks of avian influenza.

Turkey has been the subject of a number of FVO inspections in relation to poultry, notably in 2003, 2007 and 2009.

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<sup>2</sup> FMD occurs in cloven-hoofed animals particularly cattle, goats, pigs, sheep and deer. Control mechanisms include stamping out by slaughter of all infected animals and any others which may have been exposed to infection and could be expected to develop the disease. Success of the slaughter depends upon prompt reporting of the disease. Farmers need to be aware of the symptoms to be able to notify local authorities. Control of animal movement and the restriction of all movement on and off farms is required. Vaccination may also be used. (Defra, Animal diseases, Foot and Mouth)

In the report of the 2009 inspection, it was noted that whilst Turkey had been listed in Commission Decisions 1994/85/EC and 2005/432/EC as a country from where poultry meat products might be imported, a previous FVO mission carried out in 2003 had identified a number of weaknesses in the system, which together with a series of outbreaks of mainly avian influenza (AI) but also Newcastle disease (ND), had prevented the competent authorities from guaranteeing the standards required by export health certificates and thus the approval of any establishment for export to the EU.

The FVO concluded that there had been a number of positive changes since the 2007 FVO mission and the performance of the competent authorities had improved significantly in the awareness of the notifiable diseases, the registration of backyard poultry and the diagnostic capacity of laboratories. However, ND was still endemic and the control measures taken following outbreaks of ND and AI had not been satisfactory. The reliability of results obtained in laboratories that have no accredited methods remained questionable in the absence of systematic inspections and national proficiency tests organised by the national reference laboratory.

The heat treatments performed in the processing plants were satisfactory but overall, the practice of exporting poultry meat products prepared from poultry meat of Turkish origin was not in compliance with EU legislation.

### **5.3 Movement of Animals**

The requirement to implement systems for the identification and registration of animals was listed as a key element in the Turkish strategic plan related to the movement of animals and hence the control and traceability of disease.

Efforts have been made to bring the system of identification and registration of bovines and their movements in line with the *acquis*. The system has been strengthened to allow an effective cross-checking system with off-farm and on-farm movement notifications. The administrative capacity of MARA has been improved through information and training of staff and key stakeholders. A system of identification and registration of ovine and caprine animals has started across the whole country although there has been no progress on the control of the commercial movement of pet animals (European Commission, Turkey Progress Report, 2011).

### **5.4 Zoonoses**

A zoonosis is any disease or infection that is naturally transmissible from vertebrate animals to humans. Animals thus play an essential role in maintaining zoonotic infections in nature. Zoonoses may be bacterial, viral, or parasitic, or may involve unconventional agents. As well as being a public health problem, many of the major zoonotic diseases prevent the efficient production of food of animal origin and create obstacles to international trade in animal products (WHO, Health Topics, Zoonoses).

Brucellosis is consistently the main zoonosis in humans in Turkey (humans generally acquire the disease through direct contact with infected animals, by eating or drinking contaminated animal products, or by inhaling airborne agents. The majority of cases are caused by consuming unpasteurized milk or cheese from infected goats or sheep (WHO).

The frequency however has been declining from almost 12,000 cases in 2007 to almost 8,000 in 2010 which could indicate that either the disease was being controlled in the animal population or that the milk was being pasteurised more effectively (OIE).

Mortality is highest as a result of Crimean Congo Haemorrhagic Fever (CCHF), which is caused by infection with a tick-borne virus: humans who become infected with CCHF acquire the virus from direct contact with blood or other infected tissues from livestock, or they may become infected from a tick bite. Generally the majority of cases occur in those involved with the livestock industry, such as agricultural workers, slaughterhouse workers and veterinarians (WHO).

Incidents of other zoonoses that are not reported to have caused deaths but show an increase between 2007 and 2010 include Leishmaniosis and Tularemia (which are tick borne) and, Salmonellosis (1500 to 2500 cases) and Escherichia coli O157 (61 to 115 cases) which are food borne bacterial illnesses. Campylobacteriosis which had decreased during 2008 and 2009 increased to 313 cases in 2010.

## **6. STATUS OF THE PREPARATION OF TURKEY (BASED ON THE *ACQUIS COMMUNAUTAIRE*) IN THE AREA OF FOOD SAFETY AND FORTHCOMING CHALLENGES**

Turkey has prepared a detailed strategy for the transposition, implementation and enforcement of the *acquis*. Recent progress reports by the European Commission (European Commission, Turkey Progress Report 2010, 2011) confirm that significant progress has been made towards harmonisation of Turkish laws to the *acquis*.

The recently published European Commission Progress Report 2011 concludes that good progress has been achieved in all key elements of the accession negotiations. The adoption of the Framework Law on the veterinary services, plant health, food and feed has contributed significantly to the alignment process and the restructuring of MARA is a positive step towards strengthening the official control system. Further work is however needed to bring the overall control system in line with the *acquis*. Animal health and the upgrading of agri-food establishments into compliance with the EU hygiene and structural requirements still require considerable effort.

### **6.1 Veterinary Policy**

In the area of veterinary policy the official control system has been strengthened but further alignment is required to bring the overall system into line with the *acquis*. A regulation concerning the tasks and working principles of veterinary border inspection posts has entered into force although implementation is still incomplete. Three land and two seaport border inspection posts (BIPs) have been completed but neither these nor the BIP at Sahiba Gokecn Airport are not yet fully functioning. Problems also remain in directing consignments from Ataturk airport to Sabiha Gokcen airport. Veterinary and phytosanitary checks need to be intensified at BIPs, mainly by the introduction of specialised staff.

The implementation of systems for identification and registration of animals is a key element and efforts to bring the system for identification and registration of bovines and their movements in line with the *acquis* have continued although further improvements are required for it to fully comply with the EU system. Implementation of the identification and registration of ovine and caprine animals has started across the whole country and continues but there has been no progress in the control of the commercial movements of pet animals.

### **6.2 Animal diseases**

Efforts have continued in combating animal diseases. A Regulation on the notification of animal diseases has entered into force. In addition Turkey has continued to fulfil its international obligations in submitting timely notifications. A regulation on the control of FMD has also entered into force although the FMD contingency plans have not yet been adopted. There has been no progress on TSEs.

Procedures have further improved with respect to the implementation and follow up of the national residue monitoring plan and control of veterinary products. Laboratory performance has increased significantly although the scope of testing remains limited.

There has been no progress on animal welfare or the import requirements for live animals and animal by-products. The system of financing and controls for veterinary inspections is not in line with the *acquis*. Implementation of bilateral obligations under the trade agreement for agricultural products requires further effort.

### **6.3 Approval of establishments and Hygiene**

Work has started in the area of developing a national upgrading plan for agri-food establishments. Responsibilities have been assigned to different departments and institutions leading to a more effective and compliant system for official controls. The administrative capacity has been strengthened via intensive programmes. Annual inspection and monitoring programmes have been implemented.

In the area of hygiene, guidelines have been prepared and implemented more widely in the sectors. Legislation transposing the hygiene package, and including specific rules for animal products, has not yet been adopted and there has been no progress on the rules for animal by-products or the funding of checks.

### **6.4 Food Labelling**

Legislative alignment and implementation has further advanced in respect of labelling, additives and purity criteria, extraction solvents, quick frozen foods, food for particular nutritional uses, ionising radiation, mineral waters.

Transposition is not yet complete with respect to Flavourings; Food supplements; Food enzymes; Contaminants; Novel Foods and there has been no progress on: Food contacts materials (although a law on regenerated cellulose entered into force) or specific rules for feed

Law 5977 on Biosafety (Official Gazette 27533 26 March 2010) (and two implementing regulations) have entered into force, but further progress is required to bring these into line with the EU *acquis*.

### **6.5 Phytosanitary Policy**

There has been some progress in the area of the phytosanitary policy. In the area of plant protection products legislation has entered into force concerning: Wholesale, retail sale and storage; Application methods and principles; Licensing; Classification, packaging and labelling; Control; Methods and principles; Production places

A regulation concerning the plant passport system has entered into force and implementation in pilot species has started. Regulations have also entered into force concerning the registration of operators and plant quarantine fumigation. The alignment of non-authorized active substances has improved. Software relating to variety registration and seed certification has become operational.

Limited progress has been made in the areas of seed and propagating materials or harmful organisms.

## **7. POSSIBLE ISSUES FOR DEBATE WITH THE TURKISH AUTHORITIES**

### **Animal Diseases**

- Foot and Mouth Disease – the measures adopted in the area of Thrace appear to be effective. What plans exist to extend this to the rest of the country?
- The prevalence of other animal diseases remain high – particularly TSE. What other measures are being adopted in the area of animal diseases?
- When will Border Inspection Posts become fully functional?

### **Hygiene controls**

- What are the plans and time scale for the implementation of hygiene controls consistent with EU norms? In particular what is being done to bring Turkish dairy and poultry establishments up to the standard where they can export to the EU?
- What support and training is available particularly to the SMEs?

### **Zoonoses**

- Is the increased incidence of Salmonellosis, E. coli O157 and of Campylobacteriosis being investigated and what causes have been identified?

### **Contaminants and residues**

- Products from Turkey are subject to a very high number of notifications in the RASFF system. What measures are in place to ensure that these are followed up?
- Is there a national system of notification of incidents and of product withdrawal/recall in the event of a problem?
- What further progress has been made to equip official control laboratories so that they can conduct all of the required analyses?
- How quickly are incidents followed up and what actions are taken?

### **Outstanding areas**

- Work has not yet started in the areas of Animal welfare, Feed Hygiene and the control of the non-commercial movement of pets. What is the intended programme in these areas?

### **Training and awareness**

- What schemes are in place to assist SMEs (in particular) to be made aware of changes taking place in the legislation and assistance with complying and implementing appropriate systems?

### **Changing food consumption patterns**

- What are seen to be the implications of the change in consumption patterns to include more processed foods, the increase in mass retail outlets and the food service sector with respect to food safety?

## REFERENCES

- DNS - European Animal Disease Notification Scheme  
[http://ec.europa.eu/food/animal/diseases/adns/index\\_en.htm](http://ec.europa.eu/food/animal/diseases/adns/index_en.htm)
- Conclusions on Turkey extract from the Communication from the Commission to the European Parliament and the Council "Enlargement Strategy and Main Challenges 2011-2012 COM(2011)666 final
- Decree No. 639 on the Organisation and Duties of the Ministry of Food, Agriculture and Livestock Official Gazette No 27958 3 June 2011; Date of Decree 3 June 2011. Available from the website of the General Directorate of Food Control <http://www.kkgm.gov.tr> – Legislation
- Department for the Environment Food and Rural affairs (Defra - UK) – Food and Farming Group, International Animal Health Preliminary Outbreak Assessments - Various Highly Pathogenic Avian Influenza (HPA1) in Turkey 26 March 2008 VITT 1200/Ai (H5N1) – Turkey Peste de Petits Ruminants (PPR) in Turkey (Thrace) 21 April 2009 VTT/1200 PPR – Turkey Sheep Px, Goat Pox in sheep in Turkey 4 August 2009 Food and Mouth disease in Turkey and other diseases of small ruminants 22 January 2010 Update: Food and Mouth disease and Peste des Ruminants in Turkey 26 February 2010 International Disease Monitoring – The Veterinary record Highly Pathogenic Avian influenza H5N1 – 31 May 2008, 13 September 2008, Newcastle Disease 1 August 2009, 30 October 2010  
Peste des petit Ruminants 1 August 2009, 7 May 2011 Sheep pox and gpat pox 7 November 2009, 7 May 2011 Foot and mouth disease 7 August 2010, 30 October 2010, 12 February 2011, 30 July 2011 Department for the Environment Food and Rural affairs (Defra - UK) – Food and Farming Group, Animal diseases  
<http://www.defra.gov.uk/animal-diseases/>
- Europa -Third country establishments – List by country  
[https://webgate.ec.europa.eu/sanco/traces/output/listsPerCountry\\_en.htm#](https://webgate.ec.europa.eu/sanco/traces/output/listsPerCountry_en.htm#)
- European Commission Turkey 2010 Progress Report SEC(2010) 1327, 9 November 2010, Brussels accompanying the Communication from the Commission to the European Parliament and the Council Enlargement Strategy and Main Challenges 2010 – 2011 COM(2010) 660
- European Commission Turkey 2011 Progress Report SEC(2011) 12 October 2011 accompanying the document Communication from the Commission to the European Parliament and the Council Enlargement strategy and Main Challenges 2011 – 2012 COM(2011) 666
  - Eurostat – Pocket Handbook Candidate Countries 2011 – Turkey  
[http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-GM-11-001/EN/KS-GM-11-001-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-GM-11-001/EN/KS-GM-11-001-EN.PDF) Accessed October 2011
- Eurostat – Farm to fork statistics 2011  
[http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-32-11-743/EN/KS-32-11-743-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-32-11-743/EN/KS-32-11-743-EN.PDF)

- FVO, 2008a (Food and Veterinary Office) - [Final Report of a mission carried out in Turkey from 14 October to 23 October 2008 in order to assess the control systems in place to prevent mycotoxin contamination in hazelnuts, pistachios and dried fruit intended for export to the European Union](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2087)  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2087](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2087)
- FVO 2008b (Food and Veterinary Office) Final Report of a Mission carried out in Turkey from 30 October to 07 November 2008 in order to evaluate the situation with regard to animal health and veterinary public health controls of milk and milk based products intended for export to the EU.  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2090](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2090)
- FVO, 2008c Final Report of a Mission carried out in Turkey from 20 October to 29 October 2008 in order to evaluate the control systems in place governing the production of fishery and aquaculture products intended for export to the EU.  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2081](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2081)
- FVO, 2009 (Food and Veterinary Office) Final Report of a Mission carried out in Turkey from 11 to 23 November 2009 in order to evaluate the animal health situation related to the export of poultry meat products to the European Union  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2440](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2440)
- FVO, 2010 (Food and Veterinary Office) Final report of a Mission carried to Turkey from 17 to 21 May 2010 in order to evaluate controls of pesticides in food of plant animal origin intended for export to the European Union  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2510](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2510)
- FVO, 2011a (Food and Veterinary Office) Final Report of a Audit carried out in Turkey from 12 to 18 April 2011 in order to evaluate controls on pesticides in food of plant origin intended for export to the European Union  
[http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2726](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2726)
- FVO, 2011b (Food and Veterinary Office) Final report of an Audit carried out in Turkey from 22 February to 04 March 2011 in order to evaluate the monitoring of residues and contaminants in live animals and animal products, including controls on veterinary residues. [http://ec.europa.eu/food/fvo/rep\\_details\\_en.cfm?rep\\_id=2672](http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_id=2672)
- Gidahatti - Federation of Food and Drink Industry Associations of Turkey Turkish Food and Drink Industry 2009 Inventory  
<http://www.gidahatti.com/resimler/2009envanteringilizce.pdf>
- Guittard, C Food Safety in Turkey September 2006 DG Internal Policies of the Union, Policy Department Economic and Scientific Policy IP/A/ENVI/OF/2006-104 / IPOL/A/NT/ENVI/2006-33.
- ISO International Standards Organisation EN ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories.
- Koc AA et al Food Quality Assurance Schemes in Turkey European Commission, Joint Research Centre (JRC) Scientific and Technical Reports EUR 24672 EN – 2011.

- Kök MS, Application of food safety management systems (ISO 22000/HACCP) in the Turkish Poultry Industry: A comparison based on enterprise size. J Food Protection 72(10), 2221-2225, 2009
- Koletzko, B Food Safety in Turkey September 2006 DG Internal Policies of the Union, Policy Department Economic and Scientific Policy IP/A/ENVI/FWC/2005-77/sc3 / IPOL/A/NT/ENVI/2006-32.
- Koletzko, B. Food Safety Situation in Turkey October 2008 Note DG Internal Policies of the Union, Policy Department Economic and Scientific Policy IP/A/ENVI/NT/2008-20.
- Law 5977 Biosafety Law Official Gazette 27533 26 March 2010 Date of Approval 18 March 2010 Available from the website of the General Directorate of Food Control <http://www.kkgm.gov.tr> - Legislation.
- Law 5996 Veterinary Services Plant Health Food and Feed Law Official Gazette No. 27610 13 June 2010 Date of Admission 6/11/2010 Available from the website of the General Directorate of Food Control <http://www.kkgm.gov.tr> - Legislation.
- Ministry of Agriculture and Rural Affairs (MARA) [www.tarim.gov.tr](http://www.tarim.gov.tr).
- OIE - World Organisation for Animal Health <http://www.oie.int/OIE>.
- RASFF portal database [http://ec.europa.eu/food/food/rapidalert/rasff\\_portal\\_database\\_en.htm](http://ec.europa.eu/food/food/rapidalert/rasff_portal_database_en.htm).
- RASFF - Rapid Alert System for Food and Feed [http://ec.europa.eu/food/food/rapidalert/index\\_en.htm](http://ec.europa.eu/food/food/rapidalert/index_en.htm).
- Republic of Turkey Prime Ministry, Investment Support and Promotion Agency of Turkey, Turkish Food & Beverage Industry Report July 2010 <http://www.invest.gov.tr/en-US/infocenter/publications/Documents/FOOD.BEVERAGE.INDUSTRY.PDF>
- Republic of Turkey Prime Ministry, Investment Support and Promotion Agency of Turkey Turkish Agriculture Industry Report July 2010 <http://www.invest.gov.tr/en-US/infocenter/publications/Documents/AGRICULTURE.INDUSTRY.PDF>
- Screening report Turkey (Acquis Communautaire) Chapter 12 - Food Safety, veterinary and phytosanitary policy Brussels, European Commission 8 February 2007.
- Screening Chapter 12 Food Safety, Veterinary and Phytosanitary Policies Agenda Item1: Introduction to food safety, veterinary and phytosanitary policies and EU harmonisation. Country Session: Republic of Turkey 24-28 April 2006.
- Strategy document Chapter 12 Food safety, Veterinary and Plant Health Framework law on food, feed and veterinary matters compliant with EU requirements Available at [www.abgs.gov.tr](http://www.abgs.gov.tr).
- UKTI UK Trade & Investment British Embassy, Ankara IATC Sector Report - Agriculture, Turkey, September 2008.

- WAHID - World Animal Health Information Database - Laboratory capacity - Turkey  
<http://web.oie.int/wahis/public.php?page=home>.
- WHO (World Health Organisation <http://www.who.int/en/>).
- World Bank - Strategy in Turkey 2008-2011  
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/TURKEYEXTN/0,,menuPK:361718~pagePK:141159~piPK:141110~theSitePK:361712,00.html>

(All websites accessed during October 2011)



## **PART 2: PUBLIC HEALTH SITUATION IN TURKEY**

### **LIST OF ABBREVIATIONS**

- AIDS** Acquired immune deficiency syndrome
- DRG** Diagnosis Related Group
- EU** European Union
- EU12** Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia
- EU15** Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
- EU27** The 27 Member States of the European Union
- HIV** Human immunodeficiency virus
- HTP** Health Transformation Programme
- MoH** Ministry of Health
- NCD** Non-communicable diseases
- OECD** Organisation for Economic Co-operation and Development
- SSI** Social Security Institute
- UHI** Universal Health Insurance
- UNDP** United Nations Development Programme
- WHO** World Health Organisation

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## EXECUTIVE SUMMARY

### Aim

This briefing provides Members of the European Parliament with an overview of the situation in the field of public health in Turkey. It covers the following topics:

- Health status of the population
- Reform of the healthcare system
- Turkey's progress in the adoption and implementation of the *acquis communautaire* in the field of public health

### Background

Turkey is a populous middle income country with a fast growing open market economy. The country has undergone rapid economic and societal transition in recent decades, including urbanisation and growth in industrial production and services. These shifts have led to changes in lifestyles and in health status.

Turkey has seen improvements in life expectancy in recent years; a decrease in child and infant mortality has been a strong component of this progress. In these and other areas, Turkey has come closer to EU averages. For many health indicators, Turkey has reached levels comparable with or better than those of some Member States.

Since 2003, Turkey has been implementing the ambitious Health Transformation Programme to improve healthcare. The Programme has brought together separate government agencies into a single Social Security Institute and it has established a Universal Health Insurance fund. Other elements include strengthening the health policy and monitoring functions of the Ministry of Health. The introduction of an incentive system has sought to improve the quality of healthcare. The reforms have also introduced a system of family doctors, and sought to improve healthcare in rural areas. These measures have led to greater equity and access to health care.

Despite the improvements, further work is needed, in particular for health delivery. The new model of family medicine suffers from an insufficient number of family doctors. The number of physicians, nurses and hospital beds are low compared to EU levels. In rural areas, where health challenges are greatest, healthcare facilities need further strengthening. These are among the key issues for the final stage of the reform.

As a candidate country, Turkey is in the process of aligning its health policy and legislation with EU health policies and the EU *acquis* in the field of health. The October 2011 progress report by the European Commission, however, has concluded that Turkey has not yet made strong progress in terms of transposing EU legislation or building sufficient capacity for implementation and enforcement.

# 1. GENERAL INFORMATION

## KEY FINDINGS

- Turkey’s GDP has grown rapidly over the past decade. Unemployment, and especially youth unemployment, is high.
- Population growth has slowed considerably.

Turkey’s economy has grown rapidly but unsteadily over the past 20 years: GDP increased by 9% in 2010, though it contracted in 2009. By 2010, Turkey’s GDP per capita exceeded 6500 Euros, over one-quarter of the EU average and a level on par with the lowest income Member States. Unemployment is about 10%, and youth unemployment (workers under 25) is about 20% (Eurostat, 2011).

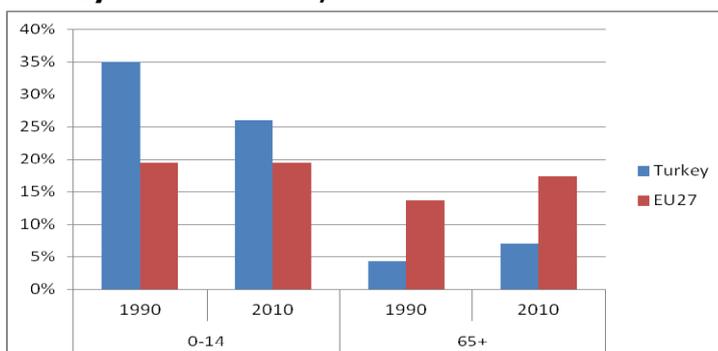
**Map 1: Map of Turkey**



Source: European Commission, 2011b

Turkey’s population reached almost 75 million in 2009. Population growth has slowed considerably in recent years, to just over 1% annually, and the fertility rate was 2.15 children/woman for the period 2005-2010 (UN DESA, 2010). As a result, the share of Turkey’s population under 15 has fallen from about 35% in 1990 to just over 25% in 2010, compared to just under 20% for the EU; the share of the population in Turkey that is 65 and over has increased in this period (see Figure 1).

**Figure 1: Shares of young (14 and under) and old (65+) in the populations of Turkey and the EU27, 2010**



Sources: Eurostat

## 2. HEALTH STATUS OF THE POPULATION

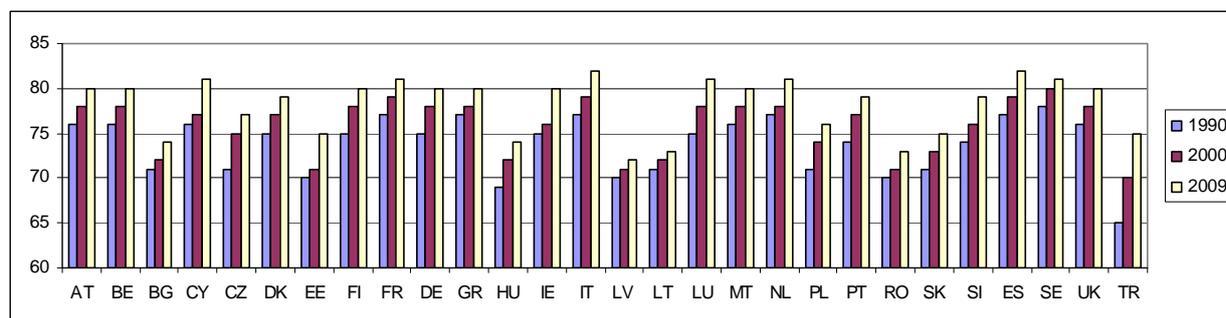
### KEY FINDINGS

- Life expectancy has risen steadily in Turkey in the past two decades; this is closely related to sharp falls in infant and child mortality. Nonetheless, infant and child mortality – as well as maternal mortality – remain higher than in the EU.
- Non-communicable diseases are the main health burden and account for 87% of mortality and almost 70% of years of life lost. The main chronic diseases are heart disease, stroke, cancer, respiratory diseases and diabetes. Mortality from cardiovascular disease and especially respiratory disease in Turkey is higher than the EU average. Mortality from cancer is slightly lower.
- Among communicable diseases, mortality from tuberculosis and respiratory disease is at a higher level than the EU; morbidity and mortality from HIV/AIDS is significantly lower than the EU average.
- Looking at key risk factors for health, the level of smoking among men is higher in Turkey than in the EU. Obesity levels are similar for men, but are higher for women in Turkey than the EU average.

### 2.1. Total burden of disease

Turkey has seen a continuous increase of the average life expectancy at birth<sup>3</sup> in recent decades: from 69.9 years in 2000 to 74.6 years in 2009 (WHO, 2011a). As a result, the gap between life expectancy in Turkey and the average for the EU27 was reduced (see Figure 2, below). The average life expectancy in Turkey corresponds to the average for the whole WHO European region<sup>4</sup> (WHO, 2011b).

**Figure 2: Life expectancy at birth in Turkey and the EU27, 1990, 2000 and 2009**



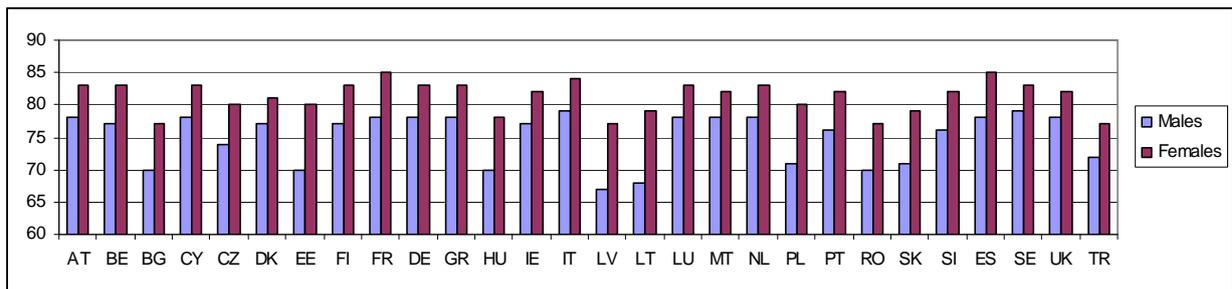
Source: WHO, 2011a

<sup>3</sup> Life expectancy at birth is one of the most frequently used indicators of health of the population. It expresses the average number of years a person can expect to live, assuming that age specific levels of mortality remain constant.

<sup>4</sup> The WHO European region includes: all EU Member States, the European Economic Area, Turkey, Eastern Europe including Russia, Israel, the Caucasus and Central Asia.

The life expectancy of both men and women in Turkey has increased in recent decades. Male life expectancy reached 72.1 years in 2009 and exceeded life expectancy of men in several EU10 Member States. While female life expectancy reached 77.2 years, this remains lower than in any EU Member State, and is lower than the average for the WHO European Region (EC 2011a, WHO 2011a). WHO (2009) suggests that the relatively low life expectancy of women in Turkey is caused by high child mortality and high levels of cardiovascular diseases. Maternal mortality is also high: 0.9 deaths per 100,000 women, compared to 0.1-0.5 deaths in EU Member States; this level is also higher than the average for the WHO European region (WHO, 2011a).

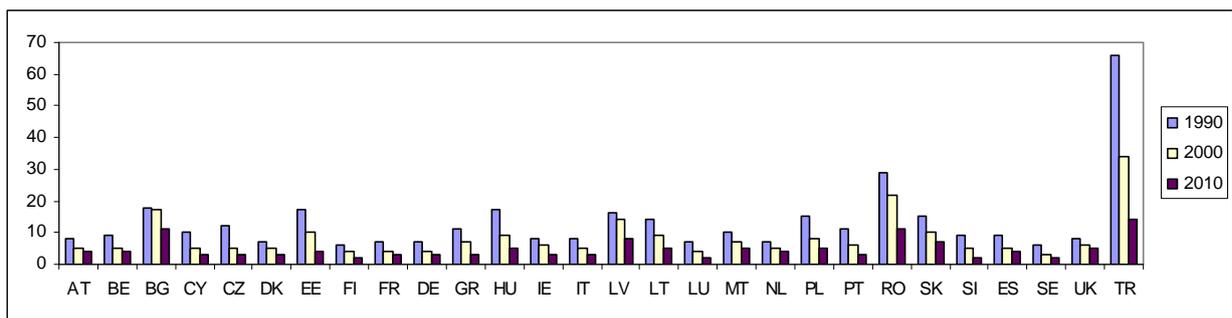
**Figure 3: Life expectancy at birth in Turkey and the EU27 in 2009**



Source: WHO, 2011a

One important factor in the improvement of life expectancy in Turkey has been a significant reduction in infant and child mortality. The infant mortality rate<sup>5</sup> has fallen almost by a factor of four between over the past two decades; nonetheless, it remains higher than the levels in any Member State (see Figure 4). Child mortality<sup>6</sup> has also fallen rapidly, though the level in 2010 (18 per 1000) is still high compared to the EU average of 4.3, and is higher than the levels in any Member State (WHO, 2011a; EC, 2011a).

**Figure 4: Infant mortality in Turkey and the EU27, 1990 to 2010 (number of deaths per 1000 live births)**



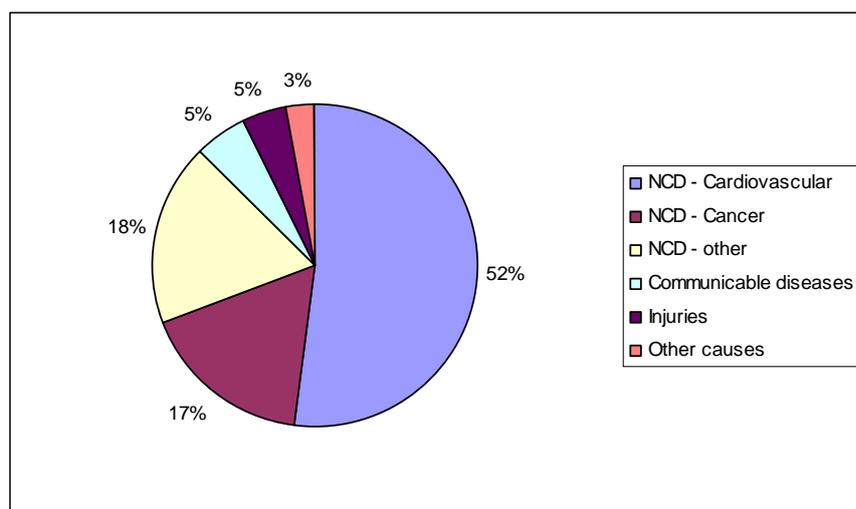
Source: WHO, 2011a

<sup>5</sup> Probability of dying during the first year of life

<sup>6</sup> Probability of dying before reaching the age of 5

Non-communicable diseases are the major burden of disease in Turkey, accounting for 87% of mortality and almost 70% of years of healthy life lost. The main chronic diseases are heart diseases, stroke, cancer, respiratory diseases and diabetes. Infectious and parasitic diseases were responsible for about 5% of deaths, similar to the level for injuries (see Figure 5). Although minor compared to other causes, nutritional deficiencies were nonetheless the cause of 1100 deaths in Turkey in 2008 (WHO, 2011a).

**Figure 5: Total burden of disease in Turkey, 2008 (proportional mortality in %)**



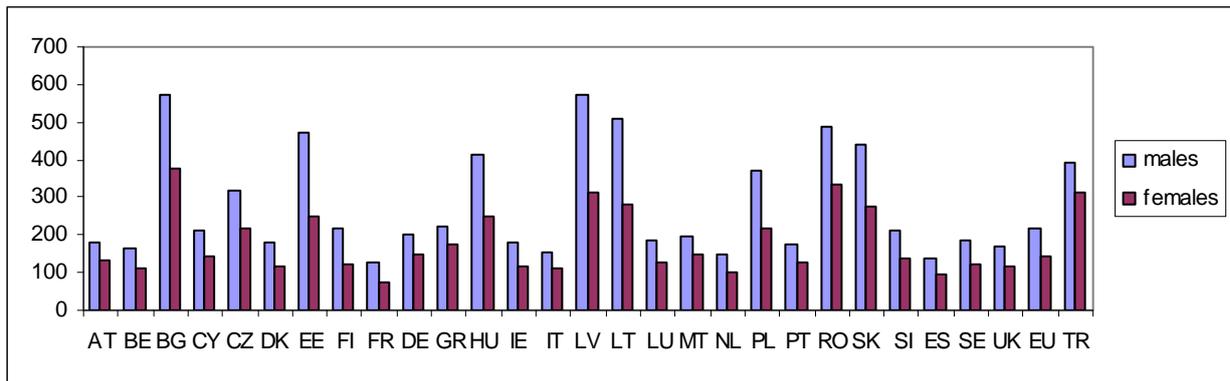
Source: WHO, 2011a

The following sections provide a brief overview of the main chronic and communicable diseases, as well as key risk factors for health.

## 2.2. Chronic diseases

**Cardiovascular disease** is the main cause of death of both men and women in Turkey. Despite recent improvement – Turkey saw a decrease in mortality rate of 475.5 deaths per 100,000 in 2004 to 391.7 in 2008 for men and from 408.3 to 311.7 for women (WHO 2011a) – mortality remains higher than the EU average (218.6 and 145.1 for men and women respectively). There is large variability of cardiovascular disease mortality in the EU. The mortality rate of Turkey is much higher than the EU average, but it is comparable to or better than that in several EU10 Member States (see Figure 6).

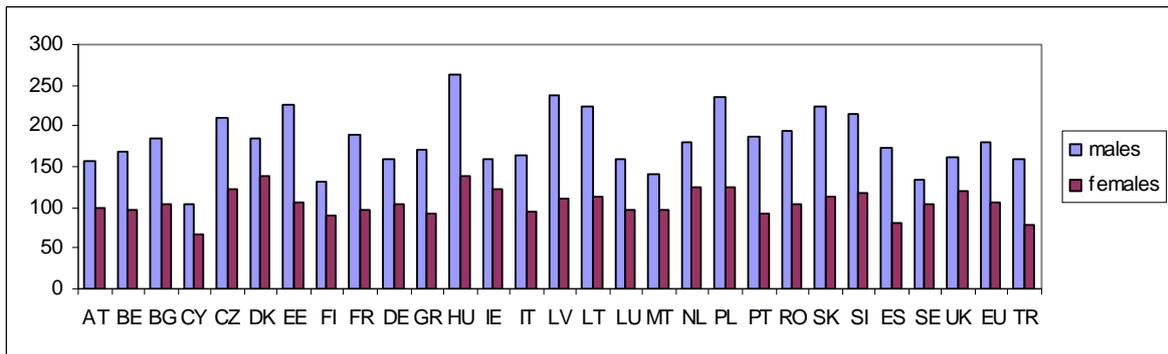
**Figure 6: Cardiovascular disease mortality in 2008 – Turkey and the EU27 (age-standardized death rate per 100,000)**



Source: WHO, 2011a

The rate of **cancer** mortality is slightly lower in Turkey than in the EU27 (see Figure 7). Turkey however has seen a small increase in cancer mortality rate in recent years: from 150.4 deaths per 100,000 population in 2004 to 158.3 in 2008 for men and from 77.1 to 78.1 for women (WHO, 2011a).

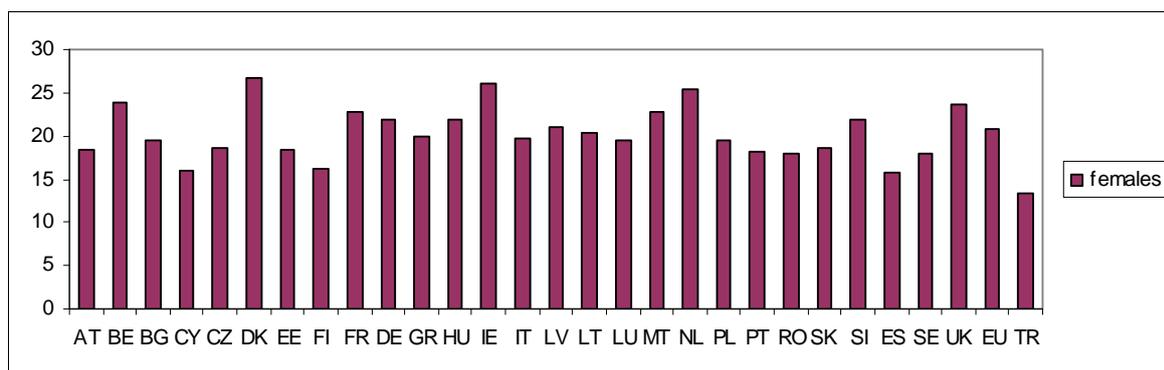
**Figure 7: Cancer mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

Breast cancer is the most common cancer in females and in this case there is a positive trend. The mortality rate has decreased from 15.5 deaths per 100,000 to 13.4 between 2004 and 2008 (WHO, 2011a). The mortality rate is lower than the EU average (20.8) and lower than in any EU Member State (see Figure 8).

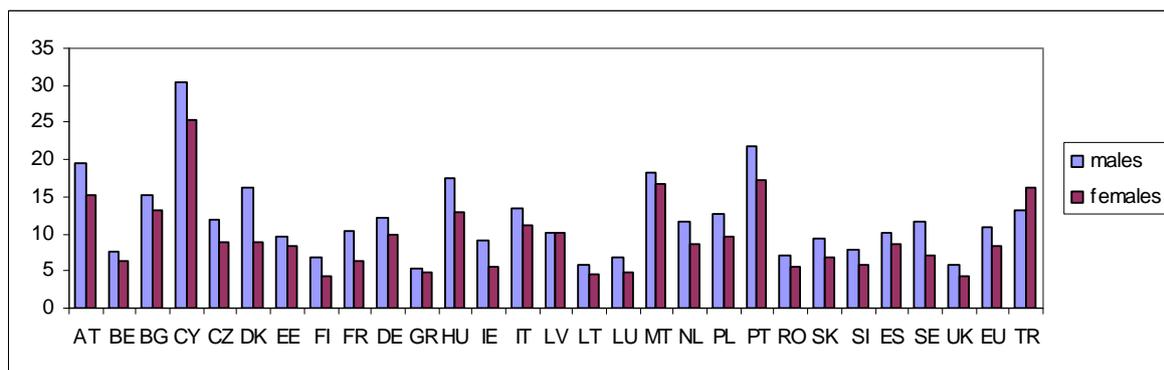
**Figure 8: Breast cancer mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

The mortality rate for **diabetes** decreased from 16.6 to 13.2 for men and from 22.2 to 16.2 between 2004 and 2008 (WHO, 2011a). Despite this positive trend, the rate is higher in Turkey than the EU27 average (see Figure 9) and, notably, almost twice as high for women.

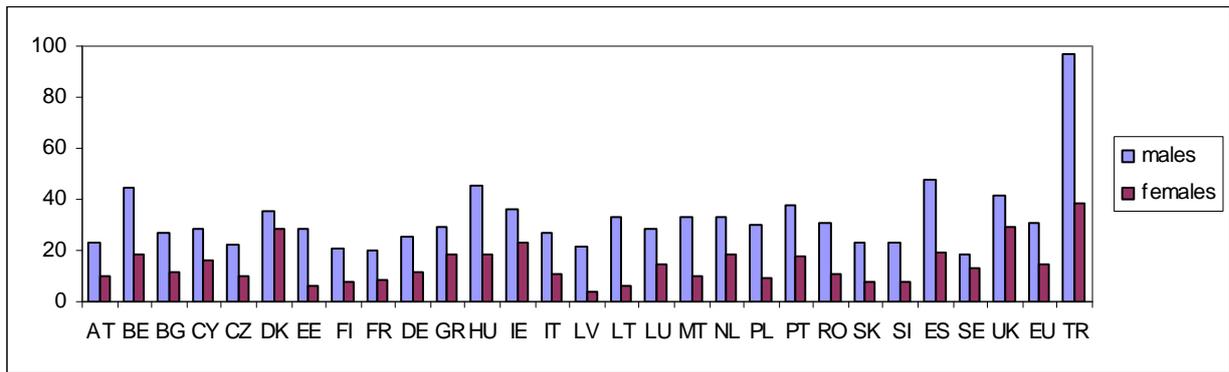
**Figure 9: Diabetes mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

Turkey has seen a reduction in **respiratory diseases**, including chronic obstructive pulmonary disease and asthma. The mortality rate decreased from 112.8 deaths per 100,000 to 96.9 for men and from 50.7 to 38.8 between 2004 and 2008 (WHO, 2011a). Despite this progress the mortality rate is higher than in any EU Member State and is more than twice the EU average (see Figure 10). The level is particularly high for men.

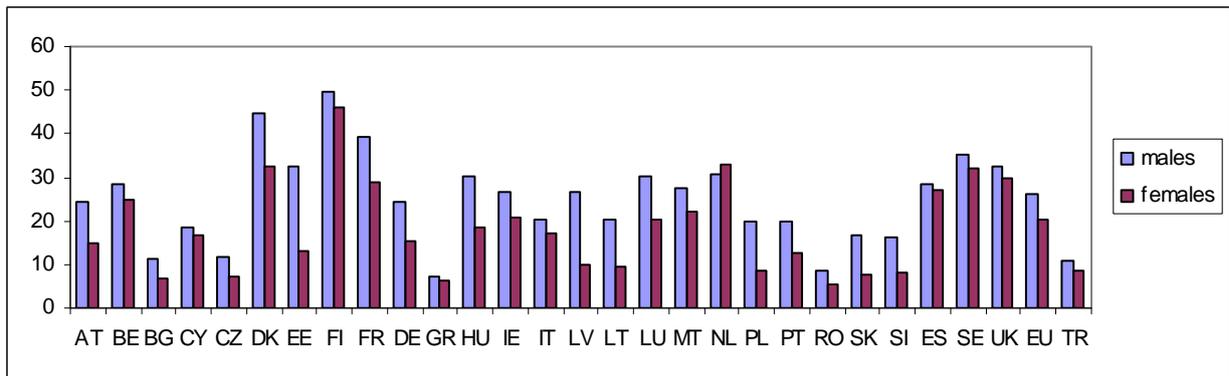
**Figure 10: Respiratory diseases mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

Mortality from neuropsychiatric conditions<sup>7</sup> in Turkey appears to be below the EU average (see Figure 11). There is also positive trend as the mortality rates decreased from 13.5 to 10.8 for men and from 11.6 to 8.5 between 2004 and 2008 (WHO, 2011a).

**Figure 11: Neuropsychiatric conditions mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



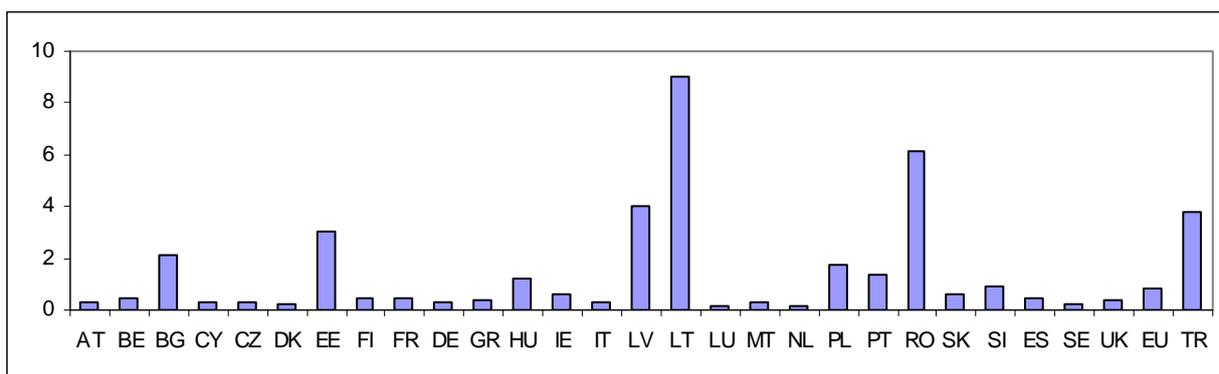
Source: WHO, 2011a

### 2.3. Communicable diseases

**Tuberculosis** has been an important concern in Turkey: the government’s Stop Tuberculosis Strategy has played a role in reducing the incidence of tuberculosis from 40 per 100,000 population to 29 in 2009 (Akdag 2011). Despite this progress, mortality from tuberculosis in 2008 was about four times higher than the EU27 average, though rates in Turkey are comparable with several EU Member States (see Figure 12).

<sup>7</sup> Including Alzheimer and other dementias, epilepsy, multiple sclerosis, schizophrenia and drug use disorders.

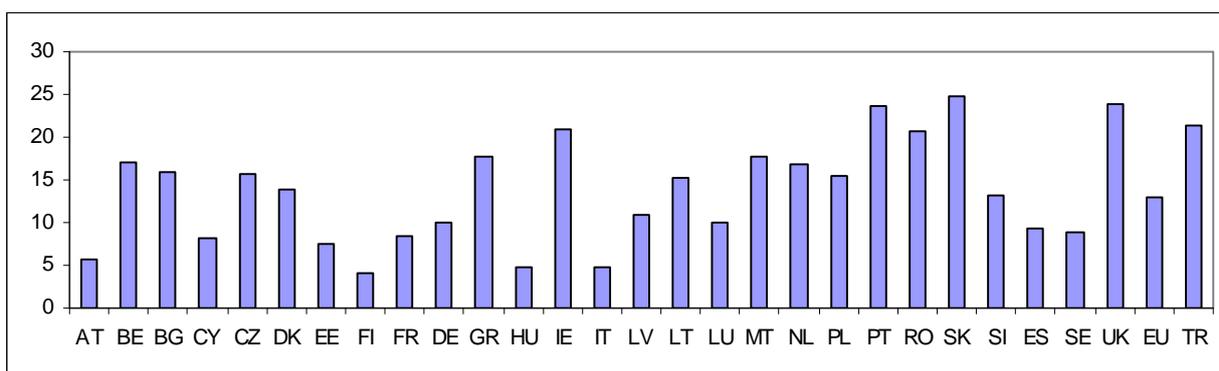
**Figure 12: Tuberculosis mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

Turkey has seen a reduction in mortality from **respiratory infections** (pneumonia and influenza): the mortality rate fell from 26.1 deaths per 100,000 to 22.5 for men and from 26.6 to 20.4 between 2004 and 2008 (WHO, 2011a). The mortality rate is above the EU average but comparable levels in several Member States (see Figure 13).

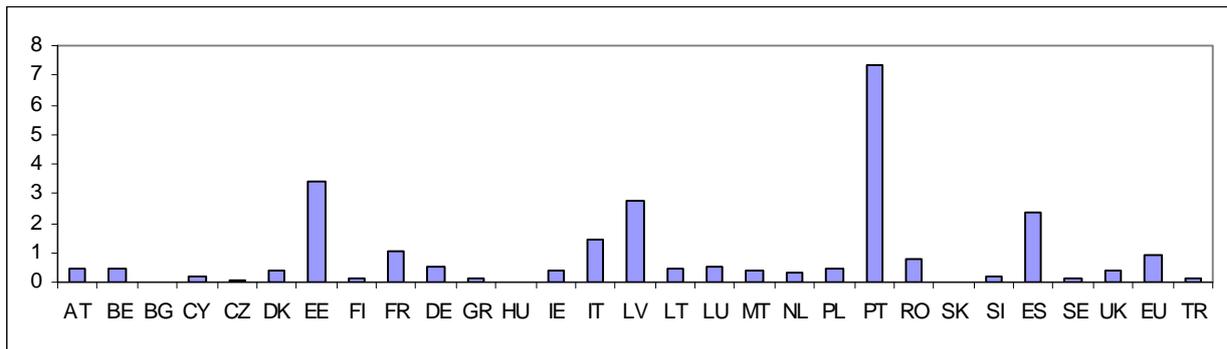
**Figure 13: Respiratory infection mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



Source: WHO, 2011a

With an estimated 4500 adults living with **HIV** in 2009 (of whom 1400 are women), Turkey has a very low prevalence of **HIV/AIDS** (WHO 2011a). As a result of this low prevalence, the mortality rate of HIV/AIDS is much lower than the EU average (see Figure 14).

**Figure 14: HIV/AIDS infection mortality in 2008 – Turkey and the EU27 (age-standardized death rates per 100,000)**



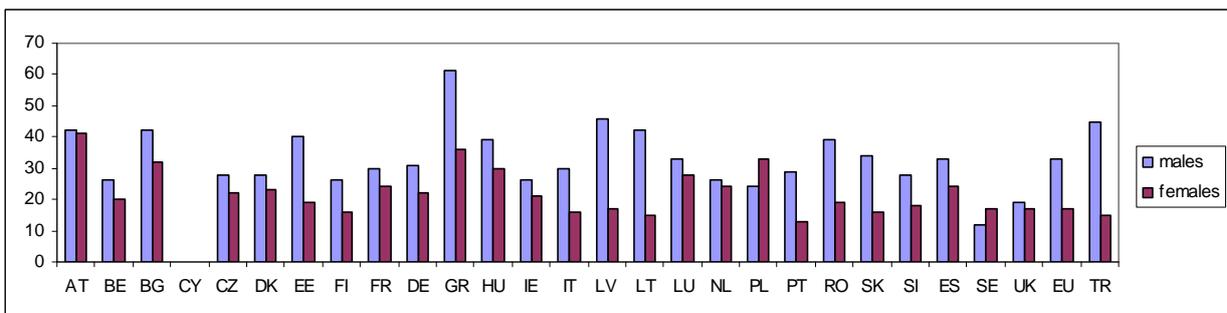
Source: WHO, 2011a

## 2.4. Preventable risk factors

The links between smoking, alcohol consumption and diet and physical activity and number of diseases are well established: these are risk factors that help to determine the health status of the population.

**Smoking** among men in Turkey is well above the EU average, though the level is comparable to that in a few Member States (see Figure 15). The smoking level among women is slightly below the EU average (EC ECHI 2011, WHO 2011).

**Figure 15: Daily smoking, percent of adult population – Turkey and the EU27, 2006**

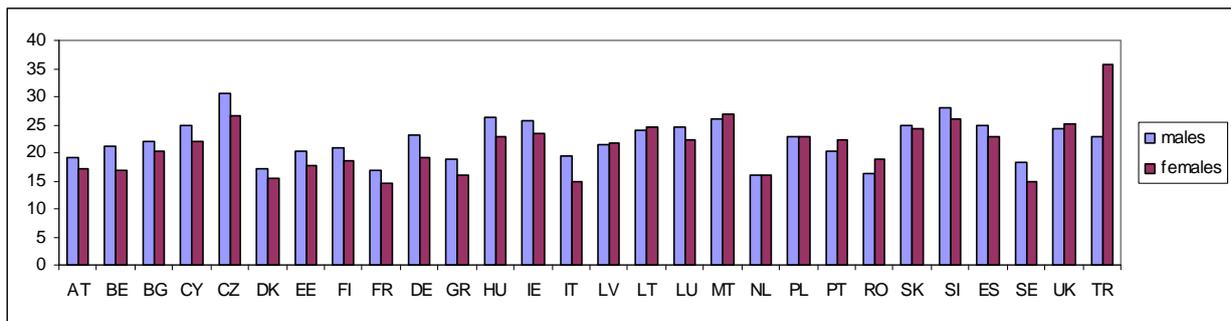


Source: WHO, 2011a, EC 2011a

Turkey as a Muslim country has a very low level of consumption of **alcohol** compared to all EU Member States. Despite a doubling of consumption since 1970s, the annual rate remains below 1 litre of alcohol per capita.

The **obesity** rate<sup>8</sup> for men in Turkey is similar to the level in EU Member States. The obesity rate for women, however, is higher than that for men in Turkey and higher than the level for women in any EU Member State (see Figure 16). There is limited information on child obesity. Studies from different regions of Turkey report the obesity prevalence in children and adolescents between 1.6% and 19% (MoH 2010). Young people from families with higher socioeconomic status are reported to have higher obesity rates.

**Figure 16: Obesity (BMI≥30), percent of adult population – Turkey and the EU27, 2008**



Source: WHO, 2011a

<sup>8</sup> the percentage of the population with the body mass index equal or higher than 30

### 3. REFORM OF THE HEALTHCARE SYSTEM

#### KEY FINDINGS

- Since 2003, Turkey has undertaken a major reform of the healthcare system, the Health Transformation Programme (HTP), and this has been credited as a key factor in the country's improvements in health status.
- Major reforms have been put in place, such as the consolidation of separate government health agencies into a single Social Security Institute and the establishment of a single Universal Health Insurance fund. The reforms have established stronger incentives for medical personnel, both to reward performance and also to reduce informal payments. They have increased access to health among the poor and also in rural areas.
- Despite these improvements, Turkey's public health system still faces several major challenges. One is the relatively low ratio of healthcare providers to the population. Moreover, the provision of healthcare in rural areas remains poor.

Improvements in Turkey's healthcare system have played a role in the improvements in health status described above in Section 2 (Akdag 2011). In the 1990s, government efforts expanded coverage and improved access to health care. In 2003, Turkey launched a new ten-year programme for fundamental institutional, organisational and financial reform in the health sector, the Health Transformation Programme (HTP). This ongoing initiative has sought to provide universal access, improve the efficiency of the public health system and raise the quality of health care.

#### 3.1. The healthcare system before 2003

Prior to the HTP, the public health care sector was fragmented. Health care was funded and provided by several public agencies serving different parts of the population<sup>9</sup>. In the early 1990s, the government introduced the Yesilkart (Green Card) programme to provide access to groups not covered under the existing system, in particular workers in the informal sector and vulnerable groups incapable of paying for healthcare (in total as much as 15% of population lacked coverage).

With this reform, all citizens became eligible for free primary and emergency hospital care provided by the government. Nonetheless, health benefits and delivery mechanisms differed across the schemes: some groups could use only public facilities, while others could use both public and private facilities. The role of private insurance was insignificant, with less than 0.5% population participating. Moreover, there were problems on the delivery side: not all patients had adequate access to timely health services. In particular, there were significant disparities in access between the urban and rural population. Health funding was biased towards expensive hospital-based services. Because of a perception of poor quality of preventive and primary healthcare services, the referral system did not work and most patients sought higher level of care directly. The majority of outpatient visits occurred in the hospital setting.

<sup>9</sup> Sosyal Sigortalar Kurumu was the social security agency for employees in the public and private sector, Bag-Kur for artisans and self-employed and Emekli-Sandigi for retired government officials.

The system of payment for healthcare was complex, and it ranged from direct financing of hospitals by the government and by public insurance agencies to payments for fee. The level of public spending had increased since 1990s and reached 4% of GDP before the 2003 reform. Public spending constituted 64% of total health expenditure in 2003. The majority of public spending (54%) went for curative care, 27% to medicines and medical products to outpatients. Less than 5% was used for prevention.

Before the 2003 reform programme was launched, it is estimated that some 25% of private expenditures were informal payments to doctors. Even Yelsikart holders often had to pay informal fees for physician services and surgery, limiting access to services for the poor. It was a usual practice for doctors working in public hospitals to refer patients to their private practices, where they charged additional fees.

### **3.2. The Health Transformation Programme**

The Health Transformation Programme (HTP) launched in 2003 aims at i) improving health status; ii) improving equity in access to health care; iii) removing the fragmentation in financing and delivery of health services; and iv) improving the quality of care (OECD 2008). The HTP received external support, including from the World Bank (World Bank, 2010) and UNDP (UNDP, 2011).

Key institutional and organisational changes that have been or are being put in place under the HTP include the following (OECD 2008):

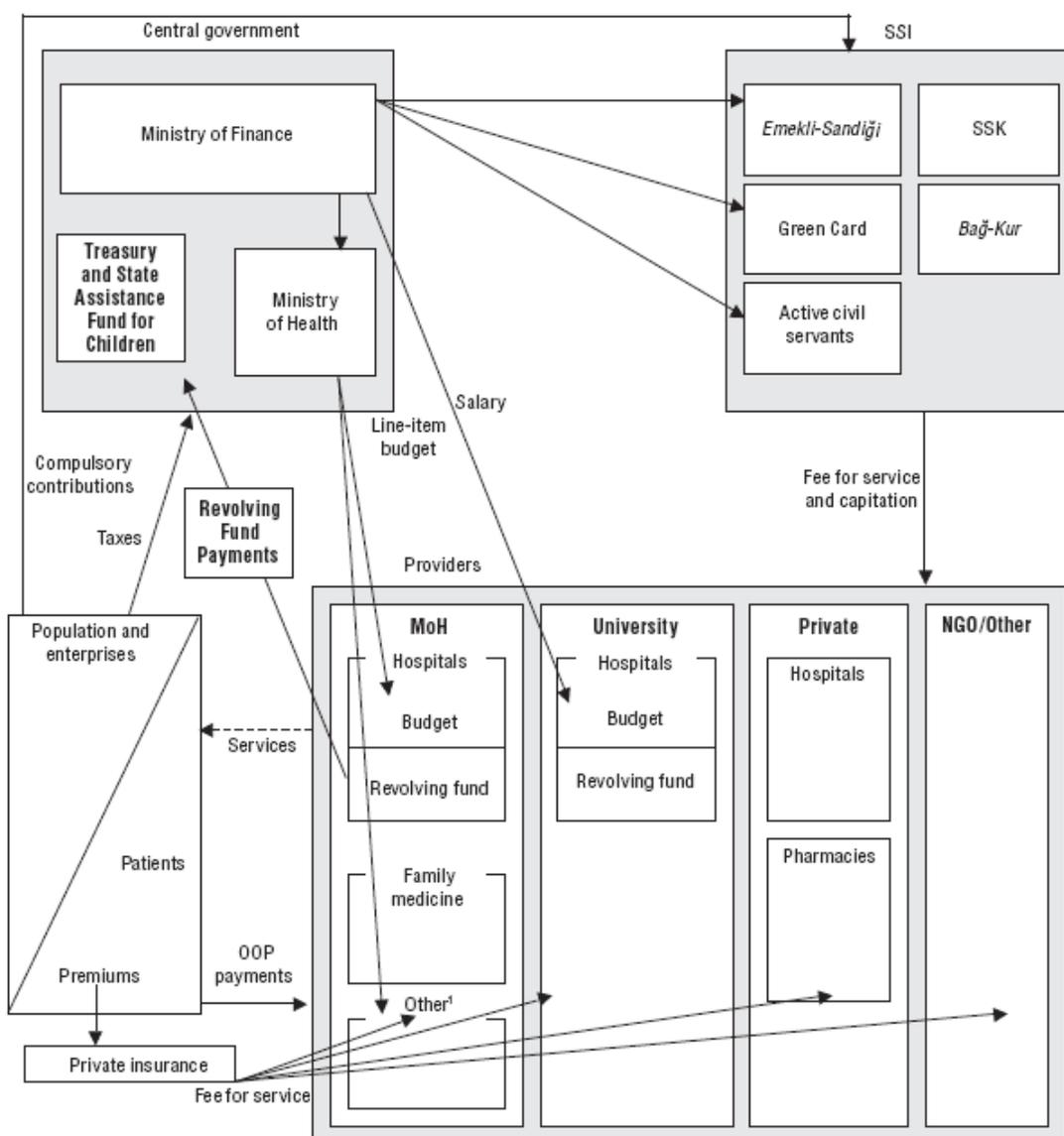
- Restructuring institutions, including the Ministry of Health (MoH): strengthening the Ministry's policy, regulatory and management functions, which include health surveillance, disease control, monitoring and evaluation, health promotion, quality assurance, human resources training and research in public health. Under the HTP, these functions are separated from the Ministry's role in health provision through hospitals and other facilities.
- Establishing a Universal Health Insurance (UHI) system for health financing, combining the previous agencies and programmes under one umbrella, the Social Security Institute (SSI). Contributions to UHI are mandatory, with contribution rates proportional to ability to pay. The government budget covers premiums for those unable to pay, and all beneficiaries are entitled to the same benefits. The SSI, as the single purchaser in the health sector, contracts with public and private providers to provide healthcare (see Figure 17 below).
- Reforming the health services: creating a strong preventive and primary healthcare system based on a model of family medicine, and improving the quality of care across health facilities.
- Increasing the number of qualified health personnel, improving their incentives, strengthening health education and research institutions, and improving information flows.

Since 2003, a number of major reforms have been implemented. Changes in the health care system were introduced through a series of legislative acts, notably the 2006 Law on Social Security and Universal Health Insurance and 2007 Health Budget Act. As a result, the Social Security Institute (SSI) was established out of the old agencies, and a Universal Health Insurance fund (UHI) was created to provide a single public instrument for the collection of health insurance and payment for health services (OECD 2008).

All employees in the public and private sector, self-employed and civil servants contribute 12.5% of their pensionable income. A reduced contribution rate has been set to attract workers from the informal sector who formerly benefited from the Green Card. A new means-tested system identifies those who can benefit from the non-contributory insurance under the Green card.

Under the new rules, the SSI adopts global budgets for state hospitals on the basis of their Diagnosis-Related Groups (DRG). For private hospitals, the SSI is mandated to establish appropriate payment mechanisms based on the scope of services provided. The 2006 UHI Law allows private providers to charge higher rates: based on detailed criteria adopted by the Council of Ministers, private providers can bill up to 100% above the price paid by the SSI. The extra charges are to be paid by patients on an out-of-pocket basis. Secondary legislation recently adopted by the SSI has further defined these limits: for example, private hospitals can only charge to up to 30% above the price paid by SSI (OECD, 2008).

**Figure 17: Financial flows in Turkey’s health care system in Turkey with the implementation of the Health Transformation Programme**



Source: OECD, 2008

Another key component of the reform has been improvement of the delivery system. This has three elements: strengthening primary care, reform of public hospitals and private health care provision (OECD 2008, Akdag 2011).

The plan to strengthen primary care is based on a family medicine approach. The scheme allows salaried general practitioners working at primary-care level or in outpatient departments of public hospitals to opt for the position of independent family doctor (with the possibility to return to their original posts). After initial training, family doctors receive monthly payments based on the number of their enrolled patients. A portion of the payment is linked to performance benchmarks such as vaccination rates, pre-natal visits and referrals. Family doctors are required to follow regular professional training.

The family medicine model is still implemented on a limited scale. Only some 20% of citizens are enrolled with a family doctor, mainly due to the shortage of family doctors. Where they are used, the rate of family doctor per population is low at 1:3400; in comparison, other countries that implement family medicine have ratios of about 1:1200 on average (OECD 2008). To address this problem, the MoH intends to strengthen the existing network of preventive and primary care centres. Where family doctors are not available, the primary care centres will remain the main gateway to health care.

Some 850 public hospitals, formerly run by different government insurance schemes, were integrated under the Ministry of Health (except university and military hospitals). This was motivated by the intention to separate the role of SSI as a purchaser of health services from that of running health care facilities. The reforms carried out include: i) granting hospital managers more autonomy and flexibility over the management of revolving funds, as well as procurement and investment decisions; ii) implementing a performance-based supplementary payment system – the system provides additional payment to regular salaries of health personnel on the basis of combined personal and institutional performance; iii) outsourcing of hospital clinical services (diagnostics) to the private sector (public-private partnerships); iv) upgrading health information systems, and v) implementing hospital quality and efficiency audits (OECD, 2008).

Private health care providers have been integrated into the reformed health care system. The SSI now contracts more than 1000 private health facilities, including 350 private hospitals. As mentioned above there are higher payments to private providers than to MoH managed facilities, along with new regulations under which private facilities operate.

OECD (2010) has praised Turkey for the success of its reforms, in particular the incentives for medical professionals to work for public hospitals, and expansion and improvement of quality of primary care. Along with the structural reforms, overall health spending increased to 6.7% of GDP in 2009 from 4% in 2003.

### 3.3. Healthcare system performance

According to OECD, when health outcomes are compared to the total level of expenditure, Turkey's healthcare system appears to be in a better position than that of other countries at similar levels of per capita income<sup>10</sup>. Moreover, out-of-pocket spending by citizens represents a relatively small part of household expenditure in Turkey and seems to be progressive, i.e. out-of-pocket payments are higher for high income groups in both absolute and relative terms. For example the poorest quintile of the population pays 3.4% of their non-food household expenditure as out-of-pocket payments while for the richest quintile it is 4.2%. It is not clear, however, the extent to which poor people in Turkey have continued to go without needed services they cannot afford in private healthcare (OECD, 2008).

Turkey has 1.6 physicians per 1000 population which is lower than in most EU Member States. Moreover, the number of nurses in relation to both population (2.1 per 1000 inhabitants) and to physicians is also low compared to EU levels. Health professionals in Turkey seem to be quite productive: with almost 3600 consultations per year, Turkish physicians are at a much higher level than the EU average and on par with only a few Member States, such as Hungary, Slovakia and Czech Republic.

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<sup>10</sup> OECD compared Turkey with countries including Brazil, Chile, Estonia, Mexico, Estonia and Slovenia.

The number of consultations per physician has been growing at more than 6% per year in Turkey, while it is declining in most EU countries. This may be a result of performance-based remuneration introduced as part of the reforms. Moreover, with these reforms the incomes of general practitioners have increased by four times between 2000 and 2007 (in constant prices), and those of specialists have more than doubled. Nonetheless, the remuneration of GPs compared to the average wage is still lower than in most EU countries (OECD 2008).

In 2007 Turkey had 2.85 acute-care beds per 1000 population, which is lower than the average for countries with comparable income and significantly below the EU average. However, in Turkey this ratio has grown 1-2% annually in recent years.

One dimension of equity is the geographical distribution of services. Rural regions in Turkey have suffered a higher incidence of mortality from treatable diseases and had lower physician density. For example, in 2008 only 69% of births were attended by a skilled health personnel in rural areas compared to 90% in urban areas; only 69% of 1-year old children were immunised against measles in rural areas compared to 84% in urban areas (WHO 2011b). Turkey has sought to address this problem through the HTP: 16,000 new medical staff have been appointed to under-served areas to ensure a more equitable distribution of medical staff per inhabitant. The Ministry of Health intends to further strengthen the presence of medical staff in deprived areas (Akdag 2011).

Turkey has also recognised the need to address broader socio-economic determinants of health. Notably, in order to tackle obesity the Prime Minister has brought together stakeholders and established an action plan, which aims to reduce obesity levels by 5%.

## 4. ADOPTION AND IMPLEMENTATION OF THE *ACQUIS COMMUNAUTAIRE*

### KEY FINDINGS

- Turkey has made progress in transposing EU health legislation in a number of areas, including on the sale of tobacco. Nonetheless, the European Commission has underlined that further steps are needed.
- A National Institute of Public Health still must be established; the National Cancer Institute has not yet been fully developed.

Turkey signed an Association Agreement with the European Community in 1963. It applied for membership in 1987. In 1999 Turkey was designated a Candidate Country and accession talks started in 2005. Negotiations on chapter 28, on Consumer and Health Protection, were opened in December 2007.

In 2008 Turkey established a National Programme for the Adoption of the EU *Acquis*, defining the legal and institutional measures the country for putting EU legislation in place, including those in the area of health.

In its October 2011 Progress Report on the advances made by Candidate Countries, the European Commission concluded that despite further progress in last year, in the area of health Turkey had not yet 'aligned its legislation with the *acquis* neither it had built up the administrative capacity to improve the enforcement of legislation in order to enhance the health and safety status of the population' (EC 2011c).

The Commission report nonetheless acknowledges that Turkey has made some progress in the transposition of EU health legislation. In the field of tobacco, all legal requirements<sup>11</sup> were met after a new regulation on the sale and supply of tobacco products, alcohol and alcoholic beverages was published in January 2011: this law introduced adequate restrictions on advertisement, marketing, sale and use of tobacco products and alcohol. Further legislative acts in June 2011 prohibited selling of tobacco products through the Internet.

In the area of communicable diseases, a new law on control and surveillance of infectious diseases was adopted. However, the Commission reported that actions to control HIV/AIDS are insufficient, as public awareness about the disease is low. Although the incidence of the disease is low in comparison to the EU, it is increasing. Moreover, a National Institute of Public Health – to be in charge of a comprehensive policy for communicable disease control – has not been established yet.

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<sup>11</sup> Directive 2003/33/EC of the European Parliament and of the Council of 26 May 2003 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products; and Directive 2001/37/EC of the European Parliament and of the Council of 5 June 2001 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco products.

The Commission also reported progress regarding legislation in the management of blood, tissues and cells<sup>12</sup>. The Turkish government adopted guidelines on blood and blood products. A new law on human tissues and cells and the quality and safety of the related tissue and cell centres was adopted in October 2010 and a complementary regulation was adopted in March 2011. These legal instruments set standards applicable for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells. Despite this progress, the Commission reports that Turkey has not yet built sufficient capacity to properly implement the policy in this area, especially where it comes to effective monitoring, inspection, and surveillance.

In the area of cancer, Turkey has recently carried out an awareness campaign on cancer of reproductive organs and launched a screening programme. However, the National Cancer Institute has not been fully developed.

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<sup>12</sup> Directive 2000/70/EC of the European Parliament and of the Council of 16 November 2000 amending Council Directive 93/42/EEC as regards medical devices incorporating stable derivatives of human blood or human plasma; Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003 setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components and amending Directive 2001/83/EC; and Directive 2004/23/EC of the European Parliament and of the Council of 31 March 2004 on setting standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells and implementing Commission Directives.

## REFERENCES

- Akdag, R. (2011): Turkey Health Transformation Programme: Evaluation Report 2003-2010. Saglik Bakanligi, Ankara.
- CIA (2011): The World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/tu.html>
- European Commission (2011a): European Community Health Indicators. <http://ec.europa.eu/health/indicators/echi/>
- European Commission (2011b): Map of Turkey. [http://europa.eu/abc/maps/applicants/turkey\\_en.htm](http://europa.eu/abc/maps/applicants/turkey_en.htm)
- European Commission (2011c): Turkey 2011 Progress Report. European Commission, Brussels.
- Eurostat (2011), National accounts (including GDP). [epp.eurostat.ec.europa.eu/portal/page/portal/national\\_accounts/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/introduction)
- Joumard, I., Andre, C. and Nicq, C. (2010): Health Care Systems: Efficiency and Institution. OECD, Paris.
- Ministry of Health (2010): Obesity Prevention and Control Program of Turkey 2010-2014. Ministry of Health of Turkey, Ankara.
- OECD (2008): OECD Reviews of Health Systems: Turkey. OECD, Paris.
- OECD (2010): Making Reform Happen Lessons from OECD Countries. OECD, Paris
- WHO (2009): Health in the European Union: trends and analysis. WHO Regional Office for Europe, Copenhagen
- WHO (2011a): Global Health Observatory Data Repository. <http://apps.who.int/ghodata/>
- WHO (2011b): Global Infobase. <https://apps.who.int/infobase/Comparisons.aspx>
- WHO (2011c): Turkey: Health Profile. <http://www.who.int/gho/countries/tur.pdf>
- World Bank (2010): Turkey Health Project. <http://web.worldbank.org>
- United Nations Department of Economic and Social Affairs (UN DESA, 2010): Population Division, World Population Prospects: The 2010 Revision. <http://www.un.org/esa/population/unpop.htm>
- United Nations Development Programme (UNDP, 2011): Implementation Support to Health Transition Project: [www.undp.org.tr](http://www.undp.org.tr)

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

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