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France 2025

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Purpose

The national foresight study "France 2025", completed in March 2009, aimed at identifying economic, social, technological and environmental trends up to 2025 – on global scale as well as at the national level. At the same time, the exercise sought to outline different future development scenarios for the country against the background of these trends. Based on those scenarios, policy options and strategies were worked out geared toward strengthening French competitiveness while ensuring social cohesion in the country.

Foresight Attains Importance as Policy Instrument

France's long tradition of using foresight in support of policy-making – both at national and at regional level – goes back to the late 1960s when, most notably, the General Planning Commission as well as the former National Land Planning Commission DATAR employed foresight methods. From the mid-80s till the mid-90s, however, the strategic importance of foresight as a policy instrument had diminished. This changed slightly in 1994 when two national technology-focused foresight exercises were launched at the same time: a Delphi study on future technologies on behalf of the Ministry of Research, on the one hand, and the "Key Technologies 2000" exercise of the Ministry of Industry, on the other. This last foresight initiative, which focused on the technological needs of the French industry and aimed at identifying technologies with the potential for strengthening the competitiveness of the French industry, was repeated in 2000 ("Key Technologies

2005") and 2005 ("Key Technologies 2010"). Nevertheless, after formal multi-year indicative planning had been halted in 1993, there was no comprehensive national foresight initiative in France – in contrast to other European countries like Denmark or UK.

Against this, foresight as an instrument in support of policy-making has been reinvigorated and given greater visibility in France over the last few years – which is reflected in the creation of the Centre for Strategic Analysis in 2006 whose future-oriented activities and analyses shall assist the government in defining and implementing its economic, social, environmental and cultural policies, as well as in the nomination of a Secretary of State in the Prime Minister's Office in 2007 in charge of strategic studies, public policy evaluation and the development of the digital economy. Indeed, while launching the national foresight exercise "France 2025", the Prime Minister and the Secretary of State for Strategic Studies intended to continue the French tradition of using foresight methods and studies to provide a well-informed basis for supporting the development of a middle and long-term policy strategy for France.



Towards Competitiveness and Social Cohesion

The present national foresight study “France 2025” aimed at identifying economic, social, technological and environmental trends up to 2025 (on global scale as well as at the national level), on the one hand, and, against the background of these trends, sought to outline different future development scenarios for the country and work out policy options and strategies for strengthening French competitiveness while ensuring social cohesion, on the other.

The starting point of the foresight exercise was a “preliminary assessment [study] of the state of France in 2008”¹ carried out between fall 2007 and April 2008. It provided an overview of the most determining current and past trends within the international context and offered elements of international benchmarking to underscore France’s relative position.

The actual foresight study was conducted as a participative process mobilising more than 350 stakeholders from all sectors and backgrounds – industry, academia, civil society and policy-makers. Eight independent expert panels – coordinated and supported by the Centre for Strategic Analysis – reflected on areas that have been deemed crucial to France’s future:

- Europe – globalisation
- Scarce resources and the environment
- Technology and daily life
- Production and employment
- Research and innovation
- Risks and security
- Living together
- The state, public action and public services

Though geostrategic developments and aspects related to defence and national security were not in the primary focus of the study, they were still considered since they provide the overall framework in which trends and developments in the areas just named had to be embedded.

For each thematic panel, major trends and trend breaks were identified, different scenarios were derived – depending on the issues considered either for France, Europe or third countries and regions – taking into account major, overarching trends, such as globalisation, ageing or climate change. Policy options were drafted accordingly. For the duration of the foresight process, an Internet website was created allowing the broad public – through Web2.0 technologies (blogs, wikis, video streaming) – to discuss issues facing government and contribute to the work of the expert panels by offering suggestions and comments.

¹ “France 2025 – État des lieux 2008” (2008)

Europe – Globalisation

Globalisation (of trade, financial markets and the workforce) and regionalisation are expected to be major factors shaping the world by 2025 – leading to a **multi-polar world** no longer dominated by the triad USA-EU-Japan. The study predicts that, due to the BRIC countries consolidating their position as global powers as well as new regional powers emerging, like Mexico, Turkey, Vietnam or Indonesia, the centre of gravity of world economic growth and production will shift to emerging countries, particularly to Asia. This may go along with a reorganisation of international relations and regulations and the EU might take a lead by example on designing new mechanisms for global governance.

Due to trade liberalization, economic catch-up in emerging countries and the increasing fragmentation of the production chain, international trade may double by 2025. This and the **rise of the global middle class** (up to 30% of world population) may create new markets for European businesses. However, given the technological catch-up in emerging countries combined with the persistent wage gap compared to developed countries, the study recommends European industry to focus on high value-added and knowledge-intensive products and services to remain globally competitive. Besides, French industrial competitiveness may profit from a strengthened single market and a common European industrial policy.

Some of the main challenges to be faced in 2025 are the **rising global demand for raw materials, energy and food, increasing income inequality** in emerging countries (despite a substantial reduction of global poverty) but also between globalisation winners and losers within OECD countries, **climate change** as well as increasing **pollution** and **waste disposal problems** in developing countries. In this regard, eco-technologies may create new market opportunities, particularly for French companies.

Scarce Resources and the Environment

Mitigating the negative impacts of **climate change** is deemed as the most important environmental challenge – calling for strengthened global regulation to reduce greenhouse emissions (post-Kyoto protocol) and greater harmonization of energy policies at European level.

As for France, the study proposes a four-pillared strategy:

- (1) Promoting the efficient use of energy especially in the following sectors:
 - transport – development of low-emission transport technologies and sustainable traffic concepts,
 - industry – e.g. substitution of fossil fuels by electricity,
 - building – energy-saving refurbishment and low-energy building design.
- (2) Developing electricity from renewable energy sources (most notably wind power and biomass energy).
- (3) Further supporting the production of electricity from nuclear energy (development of fourth generation reactors).

- (4) Strengthening R&D efforts and competencies in the field of energy technologies.

Technology and Daily Life

By 2025, technologies might be available that provide an answer to important environmental, demographic, economic, social, health and security challenges.

Whereas the *convergence* between bio, nano, info, micro and cogno technologies may blur the boundaries between natural and artificial, living and non-living, the diffusion of information and communication technology (ICT), knowledge systems, even robotics and the emergence of the “Internet of things” (even possibly the “Internet of persons”) may generate new applications related to all aspects of everyday life. Possible applications are manifold – ranging from cognitive prosthesis, telemedicine and biosensors to home automation and virtual reality applications for work, education and leisure.

Furthermore, *new transportation modes* and technologies (e.g. hybrid and electric cars) as well as energy efficient *building technologies* will help meeting future mobility and sustainability requirements. Breakthroughs in *genomics* and *molecular biology* may lead to new and personalized treatments (e.g. of degenerative diseases), diagnosis methods and health promoting measures (e.g. determination of the population’s genetic nutritional profile).

Besides their expected benefits, these applications may raise several *ethical concerns*, for instance, related to data privacy, the risk of misuse of genetic information or the impact of technology on the psyche and on social relations.

With regard to public action, the study recommends promoting the domestic development and the diffusion of technologies (e.g. through investments in infrastructure and increased use of new technologies in public services) and strengthening as well as better coordinating public R&D efforts (at national and EU level) – focusing on traditional domains of excellence such as energy, transport, urbanism and dual technologies as well as on new and promising domains like biometric systems or robotics.

Production and Employment

Strengthening productivity in the French economy and reforming the labour market are deemed as essential for France to be able to catch up with leading countries (in particular the US) in terms of wealth per inhabitant by 2025.

Productivity gains are expected to be driven by the diffusion of knowledge and technology. High-tech industry sectors (e.g. nano/biotechnologies, pharmaceutical industry) are assumed to account for a rising share of the value-added of the manufacturing sector. The diffusion of ICT may further blur the boundaries between manufacturing and services, supporting the development of *high value-added product/service solutions* better responding to new consumer needs – in business-to-business as well as business-to-consumer markets. ICT – and depending on scientific breakthroughs also robots – may increasingly be used in all service sectors – particularly in the health and education sectors – enabling new forms of service provision (remote services).

Besides achieving productivity gains, focusing on high value-added products and services – and therefore strengthening R&D investments – is highlighted as a *sine qua non* to ensuring the competitiveness of the French economy.

In order for enterprises to be able to adapt to ever changing market conditions and user expectations (consumers attaching growing importance to health and wellness issues as well as sustainable development), they should become *“learning organisations”* – new and flexible (participative) management and organisation models should be designed. The study furthermore underlines the need to increase the share of working population as well as qualification levels amongst the working population (requiring, for instance, to reform the formal education system to improve equity in education). Moreover, balancing intellectual property rights and competition law and facing rising energy prices are some of the further challenges to face by 2025.

Research and Innovation

The globalisation and internationalization of R&D and innovation activities – furthered by (international) clusters and networks – is expected to increase. At the same time, the emergence of new players like *China and India* will modify the balance of power in the area of R&D – possibly leading to technological breakthroughs in emerging countries. Hence, in order for France to remain an important player on the global R&D scene, the experts highlight the need to define national R&D strategies, enhance the performance and visibility of French universities, promote public-private partnerships for R&D as well as industrial innovation and increase the level of public awareness of science and technology. Increasing public support for R&D and overcoming structural barriers within the French innovation and research system are deemed a necessity.

Four science domains were identified as the most promising in terms of innovation opportunities: environmental and energy sciences, nanotechnologies and material sciences, life sciences and biotechnologies as well as ICT.

Risks and Protection

According to the study, the French social protection system will have to be rethought and adjusted to the different and more diverse *social risks* that society will have to confront in 2025 – the most important ones being:

- environmental risks and their potential impact on health,
- the increasing occurrence of chronic diseases and age-associated loss of autonomy due to population ageing,
- potential large-scale health incidents (such as obesity or health crisis),
- financing retirement systems and facing the risk of poverty in old age,
- facing socio-economic risks related to employment (long-term unemployment, atypical work, working poor, etc.), and
- facing social inequalities, e.g. regarding access to the labour market.

Increased public knowledge and awareness about risks as well as willingness to get involved in risk governance are expected to modify and increase public expectations regarding social protection systems. Public demands may be more and more about anticipating and preventing risks (e.g. new risks emerging from globalisation and structural changes in economy and the labour market) as well as applying the precautionary and responsibility principle (e.g. when dealing with environmental or health risks).

Increased risks, as well as public expectations are expected to jeopardize the sustainability of the French social protection system – making it necessary to debate, both at public and policy level, on the fundamental principles of social protection and on the state's role in social protection systems.

Living Together

According to the study, France will have to face three main societal challenges: (1) preventing and overcoming social inequalities (e. g. in terms of access to education, employment and welfare) and intergenerational conflicts as well as promoting upward social mobility, (2) promoting personal autonomy, individual empowerment and self-determination, and (3) promoting confidence in social and political systems and facing new public demands related to environmental issues, well-being and social cohesion.

The future development of the French social model is expected to strongly depend on developments at European level, in particular, on the capacity of the EU to design efficient mechanisms for political and economic governance at European level so as to promote Europe-wide social cohesion

and sustainable economic growth based on knowledge and research. Three scenarios were developed to highlight possible developments for France – ranging from growing territorial and social divides (urban gentrification vs. urban ghetto; dynamic, autonomous and competitive regions that are well-embedded in international markets versus less attractive regions) to better social and territorial cohesion thanks, for instance, to efficient spatial and urban development policies.

State, Public Action and Public Services

The panel formulated some propositions that aim at making decision-making and public action faster, more efficient and more transparent to the citizens as well as at increasing the efficiency of public services by 2025, for instance, by

- restructuring governance at the sub-national level (grouping several municipalities into larger decision-making entities) and strengthening the role of regions,
- furthering the transfer of competencies to the EU so as to increase harmonisation of regulation and policies, for instance, related to business taxation,
- reforming the public health system (generalisation of ICT in healthcare and shift of paradigm towards prevention of illness and health emergency crisis as well as increased competition so as to reduce healthcare costs),
- designing evaluation mechanisms for the education system,
- reforming the legal system (e.g. evidence acquisition from new technologies, creation of European jurisdiction for cybercrime).

Policy Impact

The broad thematic national foresight exercise “France 2025”, the first of its kind since the mid 1990s, continued the French tradition of using foresight methods and studies to provide a well-informed basis for supporting the development of a middle and long-term policy strategy for France.

Against the backgrounds of global and European trends, policy options were worked out with the potential for contributing to strengthening French competitiveness while ensuring social cohesion in the country.

To some extent, the results of “France 2025” flowed into the elaboration of the French “National Strategy for Research and Innovation” that was published in July 2009 (<http://www.enseignementsup-recherche.gouv.fr/pid20797/la-strategie-nationale-de-recherche-et-d-innovation.html>).

Sources and References

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About the EFP: Policy professionals dealing with RTD, innovation and economic development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. Among the most important tools they apply are foresight and forward looking studies. The EFP supports policy professionals by monitoring and analyzing foresight activities and forward looking studies in the European Union, its neighbours and the world. The EFP helps those involved in policy development to stay up to date on current practice in foresight and forward looking studies. It helps them to tap into a network of know-how and experience on issues related to the day-to-day design, management and execution of foresight and foresight related processes.