

# SKILLS FORESIGHT

## MAKING SENSE OF EMERGING LABOUR MARKET TRENDS



**Foresight supports decisions in areas which involve long lead times, such as education and training, and long-term labour market planning. Foresight is defined as a “systematic, participatory, future intelligence gathering and medium-to-long-term vision-building process aimed at present-day decisions and mobilising joint actions”<sup>1</sup>. In simple terms, it is a tool which supports the design and implementation of policies with a medium to long-term perspective. By helping to anticipate and understand future developments in a policy area or sector or the system as a whole, foresight supports the exploration and development of more future-proofed, robust policies. By engaging in foresight, policy actors and relevant stakeholders explore the future and use these insights in deciding on the direction of current policies.**

Foresight includes a range of forward-looking activities but it is not about prediction or merely about forecasting. It is primarily about sense-making (making sense of emerging trends and drivers), exploring alternative futures, and shaping and enabling a desired future. The key element in foresight activities is that they are action-oriented, in the sense that the final aim is to influence, shape and act upon the future. Compared to other strategic planning processes, foresight is distinctive due to a set of core elements and approaches:

- Systematic – involving a well-designed approach based on a number of phases and using appropriate tools
- Participatory – since it brings together a wide range of stakeholders and encourages interactions, networking and learning
- Future intelligence gathering – studying trends and drivers, their interactions and possible disruptions thereby allowing

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more evidence-based policy approaches and a level of anticipation

- Vision-building – exploration of alternative scenarios facilitates eventual focus on a common vision and consensus-building
- Shaping decision-making – foresight empowers the participants to move beyond exploration to actually shape the future through more proactive thinking

- Mobilising action – by engaging stakeholders it supports the pathway to effective policy implementation through joined up approaches

Foresight techniques and methods play a crucial role in revealing future developments. They help to deal with uncertainty and provide insights for identifying future changes and needs. In education, skills foresight (i.e. anticipation of skill needs) is essential to meet future skill requirements in the economy and society. Even though some have argued that systematic anticipation of changing skill needs is impossible, with sophisticated approaches it is possible to fill information deficits and help reduce future imbalances and mismatches. Foresight can help those concerned with policy making in anticipation of skill needs to make better decisions and support planning. It is a helpful tool for education policy planning in times of rapid change. It allows engagement with a broad range of stakeholders in meaningful discussions about not only what we think education might become, but also what we want education to become.

At the strategic level, foresight has been traditionally used as a policy tool for priority-setting in identifying key policies to be implemented, key areas of national priority to be targeted and how to target investments more effectively, for instance in education and research and innovation. Foresight is typically used also to enhance competitiveness and, as such, it can play a corrective role (addressing weaknesses, gaps and failures in the system), a disruptive role (encouraging an emphasis on disruptors), and a creative role (stimulating new networks and structures).

## TYPES OF FORESIGHT METHODOLOGY

Foresight can take different forms depending on the nature, scale and ambition of the exercise, the sectoral focus, the resources available, the timeframe, and the level of maturity of the context. Choosing foresight method is crucial for the process and results.

The most frequently used foresight methods can be classified into three categories (table 1). First, normative methods start with the desirable future and proceed by seeking ways of achieving it; examples are back-casting and road-mapping. Second, exploratory methods start in the present and based on preconditions, look into different futures; examples are Delphi method, expert panel, horizon scanning, scenarios. Third, supplementary methods, though not being strictly foresight ones, are widely used in relation to foresight methods for supporting goals of foresight exercises (e.g. literature and statistics review, SWOT analysis, brainstorming, focus groups). The variety of foresight methods demonstrates that no one method is best – the choice must reflect both fitness for purpose and the national culture in which it is situated. In most cases, different methods are combined in one.

Foresight methods can also be categorised as qualitative, semi-quantitative and quantitative methods. In general, and compared to forecast methodologies, foresight exercises tend to be mostly qualitative. In particular, qualitative methods are often employed where the key trends or developments are hard to capture using simplified indicators, or where such data are not available. These methods are often used to provide meaning to developments and observations, but such interpretations tend to be based on particular views, beliefs and knowledge and provide a lot of room for subjective thinking. Therefore, the current trend in foresight is to apply a mixture of different approaches, as it is broadly accepted that foresight activities cannot be completely dominated by purely qualitative or quantitative methods and their results. Quantitative approaches often apply qualitative elements and qualitative approaches discuss and provide insight to the meaning of the numbers which are results of quantitative methods.





**TABLE 1: MOST COMMON FORESIGHT METHODS**

Type	Method	Description	Usually used together with	Important features of method
Normative	Backcasting	Defines a desirable future and then works backwards to identify major events and decisions that generated the future	Literature and statistics review	Provides a clear path forward
Normative	Roadmapping	Aims to look at the future for a chosen field and to seek the most important drivers of change in that field. It provides inputs for the formulation of policies and strategies	Scenarios, brainstorming, expert panel	Provides a clear path forward
Exploratory	Delphi method	Exploratory technique aiming to structure group thinking and communication to reflect on complex issues. It is particularly used by experts in a series of iterative learning rounds	Literature and statistics review, brainstorming scenarios	Good for spotting the unexpected, and for engagement of stakeholders
Exploratory	Expert panel	Platforms of experts that generate and debate ideas on the future, gathering and validating information, and formulating priorities and actions.	Scenarios, brainstorming SWOT analysis	Eliciting expert knowledge, help identify priorities
Exploratory	Horizon scanning	Structured evidence-gathering process based on desk research and expert opinions with systematic examination of opportunities and likely future developments which are at the margins of current thinking and planning	Scenarios	Identifying future challenges and trends
Exploratory	Scenarios	Policy analysis tool to describe a possible set of future conditions. It helps decision-makers consider possible options and choose the preferred vision for future policy decisions.	Literature and statistics review, SWOT analysis, science and technology roadmapping	Good for spotting the unexpected, and for engagement of stakeholders
Supplementary	Literature and statistics review	Not a foresight method as such, but an essential background activity or first step in any foresight exercise. It involves observation, examination, monitoring and systematic description of the technological, sociocultural, political, ecological and economic contexts	Scenarios, backcasting, Delphi method	Evidence-based
Supplementary	SWOT analysis	Analytical tool which helps to identify main internal strengths and weaknesses and external opportunities and threats that may shape the reality	Scenarios, expert panel, Delphi method	Lists factors with impact on issue
Supplementary	Brainstorming	It encourages group thinking and supports generation of ideas. It may help to increase group's ownership of the result, prevent conflict and achieve consensus.	Expert panel, Delphi method	Can reveal unexpected development
Supplementary	Focus group	A form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards issues of interest.	Scenarios	Improving or generating ideas



# FORESIGHT IMPLEMENTATION

Foresight can be and has been applied to a range of rationales, contexts, policy settings, sectors, domains and levels (including national, international, regional, local, city). The rationales and context dictate form, scale and focus of foresight activity.

Defining the focus of the foresight exercise is essential before starting. It usually tackles one core issue but different types of focus may coexist (e.g. future skills shortage in a selected sector). Ideally, the focus should be discussed and defined together with main sponsors, implementers and partners.

The implementation of a foresight exercise typically include the following steps:

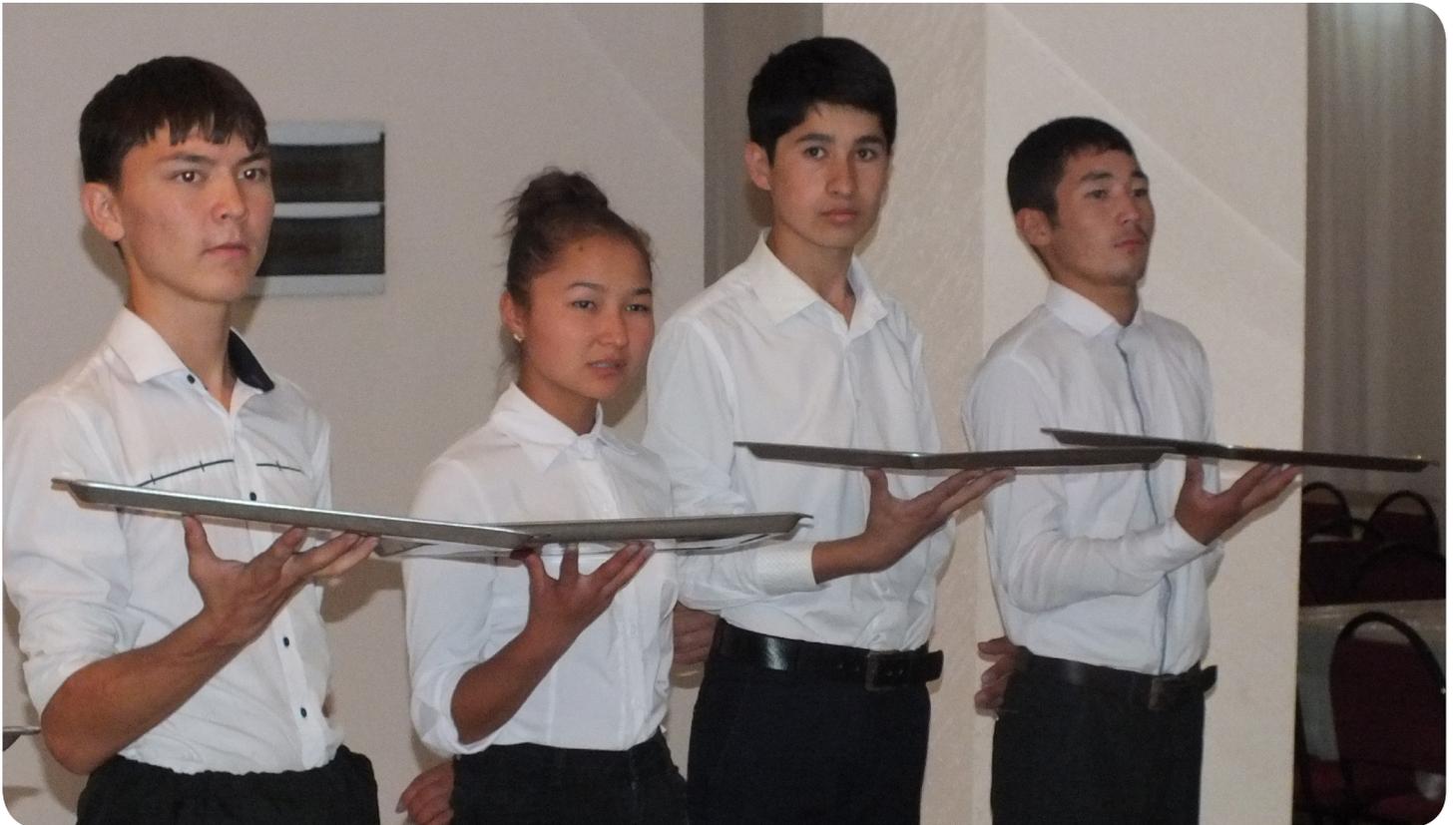
- Clarifying the purpose of the foresight exercise and see if it can provide the kind of information sought and fulfil expectations;
- Clarifying the key programme design elements, including objectives, expected outcomes, foresight time horizon, partners, stakeholders, participants, scope, methods and formats to apply, and time and resources to allocate for the exercise. Ideally, objectives should be clearly formulated but, unlike the foresight focus, do not have to be too specific, at least at the initial stage of the process. Gaining as broad support as possible early on is important but, again, managing expectations is necessary. Expected results also need to be clarified, and could be tangible, such as reports, books, websites, institutionalised networks, strategic documents, or intangible, related to the process itself, such as informal networking, consensus on issues discussed, collaboration among stakeholders and social dialogue. Expected outcomes from the

foresight exercise have to be clearly defined and related to specific groups of stakeholders.

- Clarifying key questions and the way to find answers: selecting an appropriate methodology should be done early in the foresight design process. The chosen methodology should be problem-solving driven and result-oriented. It should also take into account feasibility of the implementation and resources needs/constraints. These considerations should help to select a set of methods to be applied at different stages of the process in the appropriate sequence
- Managing the foresight exercise: the foresight implementation plan has to include a number of organisational issues, such as forming the implementation team and assigning roles and responsibilities to its members, setting up a steering committee, outlining a communication strategy, estimating and securing financial and non-financial resources, contracting external collaborators, and forming expert working groups if necessary. The proper implementation of the foresight exercise includes collection, collation and summary of available information, and then translation and interpretation of this information to produce an understanding of its implications for the future.
- Ensuring the use of results: the life of foresight does not stop at the end of the implementation of the foresight activity itself; it includes tasks related to the use and dissemination of the results, their evaluation, and reflection on the lessons for future foresights.

## SUCCESS FACTORS

Cases of foresight approaches implemented worldwide suggest that a numbers of common factors are found in successful cases. These include setting reasonable goals and scope of activities, having an adequate institutional framework in place, involving a wide pool of expertise and stakeholders (including employers, especially in the case of skills foresight), balancing available resources and expected outcomes, choosing methods that reflect country contexts and effectively disseminating the results. In addition, the experience with foresight exercises show continuing efforts have to be made to ensure the long-term success of foresight activities. Such efforts can create a foresight culture, an environment in which foresight exercises produce meaningful results, inform decisions and initiate corresponding responses. A foresight programme/project is a time and resource limited exercise which is only one step in building such culture. Isolated activities with little follow-up tend to have limited success, so broader support activities/processes should be also considered.





## TYPICAL INSTITUTIONS/ACTORS INVOLVED

Adequate institutional infrastructure is essential for producing successful foresight results and corresponding response. This covers not only institutions that sponsor or promote foresight activities (usually central or local governments and their agencies) but also relevant stakeholders (in particular employers and their representations, research centres, sector bodies, employees and their representative bodies, education and training institutions and others) who are involved to contribute to such activities. Typical stakeholders in skills foresight are government and its bodies (ministries, agencies) at national/regional/local level, employers and their bodies, trade unions, research centres and specialised institutions, public employment services, and education and training providers. Skills foresights include elements of social dialogue between government and the private sector in its core activities.

The composition of participants of a foresight exercise will depend upon the orientation of foresight activities; several practical approaches can be used to identify appropriate individuals. Maximum involvement of leading players is necessary because these will help determine the final outcome, whether foresight is focused on formal activities, or on the activation of learning processes and development of specific skills. The correspondence between foresight objectives and stakeholder needs depends greatly on the number of key players involved and their effective participation, as well as their ability to intensify relationships of exchange within the issue and with regard to external contexts.

As the effectiveness of each foresight activity is strongly influenced by the number of key players involved and their degree of participation, in order to avoid casual or misguided choices, the identification of these players must follow in-depth analysis of the local system and refinement of the general objectives of foresight activity.





## EXAMPLES

**The European Union:** a methodology was developed over the last decade aiming at supporting strategic management of human resources. The methodology identified and analysed foresight on emergent job profiles and their training needs in the different EU Member States and recommended a European foresight cross-sector methodology. The purpose was to prepare possible future actions to investigate new jobs for Europe, encouraging more effective interaction between innovation, skills development and jobs creation. The sectoral studies were disseminated to European sectoral social partners with the aim of encouraging debates between them about possible trends in their sectors. The results were also disseminated among the different services in charge of these sectors inside the Commission. The findings are also integrated in the EU skills panorama (<http://euskillspanorama.cedefop.europa.eu/>)

**Skills foresight in the EU Enlargement region:** In 2013, the European Commission entrusted the European Training Foundation to support enlargement countries develop a commonly agreed vision and a road map for skills 2020 in a wider human resources development context ("Frame" project). Skills were at the centre of the foresight initiative, addressing the question "Which skills should the country develop towards 2020 and how can these skills be generated by the education and training system?". Participation in the processes ensured representativeness from the main government institutions with a stake in the HRD sector, economic actors and civil society. The exercise also aimed at informing the programming process for the EU IPA funds 2014-2020, contributing to best use of funds. All details available at [http://www.etf.europa.eu/web.nsf/pages/Frame\\_project](http://www.etf.europa.eu/web.nsf/pages/Frame_project)

**Germany:** in the foresight process led by the Federal Ministry of Education and Research (BMBF), a sequence of expert panels is used to identify new future research and technology fields. This helps to specify and refine topics of interest and innovation. The cooperation with experts is based on face-to-face workshops, alternating with online surveys which lead to step-by-step reclustered topics. The BMBF foresight provides technology foresight with a time horizon of approximately 10 to 15 years. It is characterised by combining two approaches in a cyclic process model: a cycle strongly influenced by the technology push approach is followed by a cycle that is mainly demand pull orientated. More information available at: <http://www.bmbf.de/en/6490.php>

**United Kingdom:** The UK Commission for Employment and Skills carried out the National Strategic Skills Audit for England with an aim to provide valuable insights into country's strategic skills needs. Within this project, a 'horizon scanning and scenario' foresight exercise was commissioned to assess the future drivers, challenges and opportunities for UK skills. The St Andrews Management Institute carried out the exercise and produced the report that was one of the key information sources for the National Strategic Skills Audit. Horizon scanning was one of the core methods used, divided into two stages: general scanning and prioritization. More on the national skills audit at <http://www.ukces.org.uk/ourwork/nssa>

**Australia:** in 2012 the Australian Workforce and Productivity Agency developed four possible, plausible scenarios for Australia to 2025 to deal with uncertainty and limitations of making projections about the future in developing the Future focus, 2013 national workforce development strategy. Scenarios are alternative visions of the possible future and provide a means to make decisions that take account of uncertainty. The intention is that, by comparing these alternative scenarios, the significance of different uncertainties can be better appreciated. A comparison of the model results based on these scenarios helps to identify how much difference possible alternative future developments are likely to make to the demands for different skills, plus why, and what responses might then be most appropriate. More information on the National Workforce Development Strategy available at <http://www.awpa.gov.au/publications/Documents/Future%20Focus%20key%20messages.pdf>

**Korea:** the country has developed its own foresight culture, with each of the ministries having started its own foresight projects. This background, together with the participation of the ministry responsible for education in the national foresight, sets the basic conditions for interlinking the areas of technology foresight and education policy, though concrete mechanisms are yet to be formalised. More at <http://eng.kedi.re.kr/khome/eng/webhome/Home.do> and <http://english.mest.go.kr/enMain.do>

**Japan:** the country is known as a pioneering country in science and technology (S&T) foresight. Since the early 1970s such surveys were implemented by means of the extensive Delphi survey and only since the eighth S&T foresight (2003-04) has the Delphi been accompanied also by other methods. In 2009 the ninth S&T foresight was conducted by the National Institute of Science and Technology Policy (NISTEP), an organisation affiliated with the Ministry of Education, Culture, Sports, Science and Technology. The whole foresight exercise 'employed a combination of Delphi survey, based on interdisciplinary considerations with future targets in mind, scenario method using several techniques, and region-based discussions. The leading question was set as 'what we should do from now on' to reach future goals and resolve the global and national challenges. More at <http://www.nistep.go.jp>

## REFERENCE READING

ETF-Cedefop-ILO (2016): Developing Skills Foresights, Scenarios and Forecasts, Volume 2, Guide to Anticipation and Matching Skills and Jobs, Luxembourg (July 2016)

For information on our activities, job and tendering opportunities, as well as a detailed bibliography for this policy briefing, please visit our website, [www.etf.europa.eu](http://www.etf.europa.eu)

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