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Knowledge base for Forward-Looking Information and Services

Catalogue of scenario studies

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1 Introduction

1.1 The need for environment-related forward-looking information and scenarios

Environmental policymakers and others working with environmental issues face ever greater challenges. The situations they are grappling with are becoming more and more dynamic and complex. Rapid globalisation, for example, has increased the interdependencies of countries within Europe and elsewhere. The rate of change — and the associated rise in complexity — is increasing uncertainties about possible future trends and policy effectiveness.

Recent developments of environmental trends give are particularly worrying picture. Climate change, for example, is increasingly recognised as a major threat to our way of life. Air pollution is expected to continue to pose significant threats to human health. The observed biodiversity decline and loss of ecosystem services is not expected to reverse unless new actions are taken. And unsustainable patterns of resource use and waste generation are expected to continue. Whereas environmental issues barely made it into public debate during the 1970s, today's discussions about climate change impacts and resource use are among the most prominent topics on political agendas.

In a recent speech, EU Environment Commissioner Janez Potočnik said:

> 'we tend not to plan well for the future, and lags prevent us from reaching our goals unless we act early. We have path-dependency. For future success in almost any area, we have to incorporate future effects into our current … policymaking' (EC, 2010).

To make informed strategic decisions, we must try to anticipate what lies ahead and grasp ongoing, emerging and latent developments. If we seriously want to address Europe's sustainability, we have to look beyond two legislative cycles and more. However, a long view requires a broad mind: the key challenges facing Europe can change significantly with time.

Environmental scenarios, outlooks and other types of forward studies help us to address discontinuity and uncertainties of future developments and to design robust policies that can withstand the test of time (EEA, 2010a). These diverse issues — dynamic changes, complexity, uncertainty and unfavourable projections — occurring over a range of geographical scales, have triggered growing demand for forward-looking information and scenario-based assessments.

According to an annual survey relating to management tools, more than 70 % of the companies surveyed used scenario planning in 2006, compared with only 40 % in 1999 (Hindle, 2008). Forward-looking assessments, including scenario-based approaches, are also being used increasingly in policymaking, supporting different phases of the policy cycle. They can, for example, provide a platform to reflect on different options for the future, to identify uncertainties, to frame policies by identifying priority and emerging issues, to check whether and how targets can be met, to develop robust measures and precautionary actions, to analyse cause-effect relationships (driving forces), to anticipate possible surprises and to facilitate short- and long-term thinking in a structured way.

A few EEA member countries, including the Netherlands and Sweden, have closely integrated forward-looking assessments into policy development and evaluation. Furthermore, many approaches used to underpin forward-looking assessments are designed to be participatory. They can therefore help improve communication between stakeholders early in policy processes or facilitate discussion among different communities (Blossom — Bridging Long term Scenarios and Strategy analyses — Methods and Organisation draft report EEA forthcoming, 2011).

Forward-looking assessments can also help improve the knowledge and information base and its relevance. More flexible information systems can be developed that respond quickly and economically to different possible futures. To a large degree this can

also support the strategic planning of monitoring systems in a cost-effective way.

In order to strengthen long-term information for policymakers and encourage international cooperation in response to shared environmental challenges, several needs must be addressed. An EEA review (EEA, 2007a) of existing forward-looking studies and their possible use in environmental assessment revealed several important areas for work:

- undertaking well-designed and sound future-oriented assessments that integrate environmental and socio-economic issues;
- including outlooks more frequently in national-level environmental reporting processes and adapting data information systems to more regularly capture forward-looking perspectives and emerging issues;
- increasing expertise and resources available to carry out forward-looking studies at national, European and international levels. Cooperation between countries and international organisations is indispensable to allow the sharing of experience in forward-looking assessment.

The EEA has responded to these challenges and needs by starting to establish the **Knowledge base for Forward-Looking Information and Services (FLIS)**, to support the inclusion of long-term perspectives and preparedness in decision-making and environmental policy development (Figure 1.1).

Figure 1.1 Main building blocks of FLIS

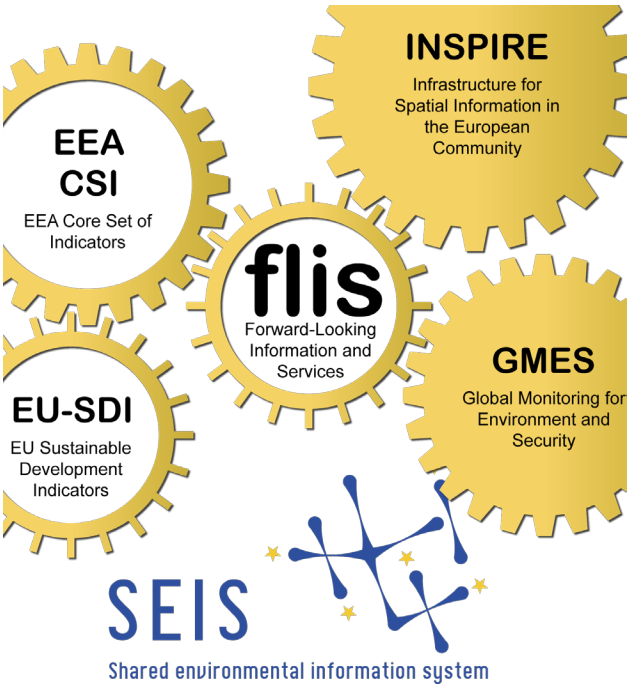
Source: EEA.

The aim of FLIS is to introduce forward-looking components and perspectives into existing environmental information systems to create an expanding knowledge base. This living knowledge base will support networking (including the European Environment Information and Observation Network — Eionet); encourage capacity building and exchange of experiences; facilitate institutional change to ensure that appropriate knowledge and information is available and used in environmental policymaking; and enable relevant, credible and scientifically sound forward-looking assessments. Overall it is of crucial importance that forward-looking assessments are well designed, supported by appropriate information systems and fit well into existing policymaking processes, enhanced by stakeholder participation. It is also important that institutions at all levels develop their capacities to manage these requirements coherently.

One of the basic requirements for using forward-looking assessments efficiently is improving and further developing forward-looking components of environmental information systems and integrating them into existing information systems. FLIS will ultimately form part of the Shared Environmental Information System (SEIS) (Figure 1.2), which is a collaborative initiative of the European Commission, and the EEA and its member countries. Such forward-looking information systems should include both quantitative information (such as projections and other model-based data) and combinations of qualitative and quantitative information (such as environmental scenarios). The objective is to produce information that provides deeper understanding and insights into possible future developments.

In addition to improving the information base, another aim is to ensure the consistency of assessments related to the past, present and future. There are many tools and approaches to support different types of assessment but they may not provide coherent outputs if not selected and designed so as to complement each other. Such tools and approaches can be used with varying effectiveness to deal with complexity and to cope with uncertainties that are increasing with time (Figure 1.3). While model-based projections might effectively support short-term decision processes where uncertainties are not too large, scenario development and scenario-based analyses (which are based on the exploration of uncertainties) become more important tools for longer-term assessments. However, if used and interpreted improperly they not only become ineffective, they may even be misleading.

Figure 1.2 FLIS as part of SEIS



Source: EEA.

Projections and scenarios are not the only ways of exploring the future. The large number of forward-looking approaches and methods includes environmental scanning, megatrend analysis, backcasting, road mapping, system dynamics, sensitivity analysis and probabilistic analysis. Some of these are statistical and economic forecasting tools, some are more qualitative in their approach, and others are based on probability theories (see also EEA, 2000, 2001a and 2001b). However, in addition to knowledge and procedural understanding all of these approaches require skills in developing targeted methodological approaches that use an appropriate selection of tools to deliver appropriate outcomes for our needs.

More on the structure and activities of the knowledge base is available in an EEA brochure (EEA, 2010b).

EEA recent published a series of reports to improve the information base of forward-looking assessment (see also EEA, 2010c):

- Catalogue of existing forward-looking indicators relevant for European environmental assessment (EEA, 2008a);
- Inventory of models which support environment-related projections; Modelling environmental change in Europe: towards models inventory (SEIS Forward) (EEA, 2008b)
- Looking back on looking forward; a review of evaluative scenarios literature (EEA, 2009);
- Institutional arrangements: country case studies (to be published in 2010).

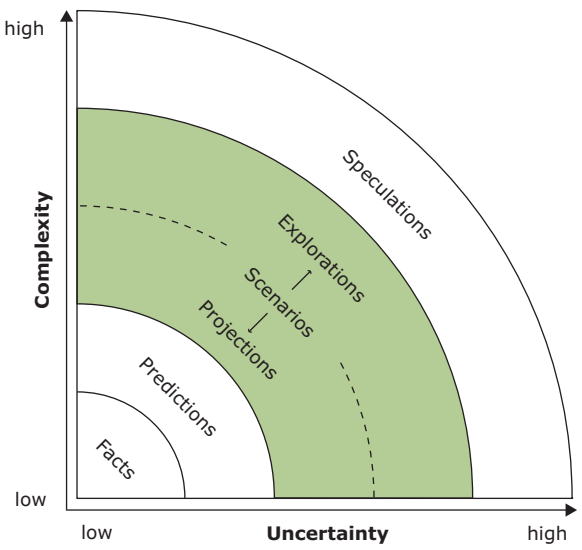
The present report is one part of these efforts, providing an overview of available scenarios and forward-looking scenario studies.

1.2 What are scenario-based studies?

Scenarios or forward-looking studies are one type of tool used for forward-looking anlyses and also one component of the Knowledge base for FLIS. Such tools can be used to manage complexity and to cope with the uncertainties inherent in assessments covering long timeframes. EEA (2009) defines a scenario as 'a consistent and plausible picture of a possible future's alternative reality that informs the main issues of a policy debate'.

Some reviews provide a more nuanced definition. They see a greater role for scenarios and scenario studies in terms of raising questions and stimulating policy debate rather than providing plausible futures. For example:

Figure 1.3 Dealing with uncertainty and complexity of underlying system dynamics in forward-looking assessments



Source: Zurek and Henrichs, 2007.

> 'Scenario building and analysis is a way to investigate the unpredictability of future developments and can be used to formulate robust policy options. A scenario is a systematically crafted story about the future. Scenarios are not necessarily the most likely, or plausible possible futures. Scenarios do not forecast or predict the future, as the future development of systems that scenarios address is highly complex and inherently unpredictable.' (Tucker et al., 2009)

Tied to the definition of scenarios is the distinction between 'normative' and 'explorative' scenarios:

- Normative scenarios describe a desirable future or set a specific goal and explore possible ways to reach that goal. An example is *Getting into the Right Lane for 2050* (PBL, 2009), which includes backcasts from a scenario in 2050, highlighting opportunities and challenges on the way.
- Explorative scenarios explore the possible effect of specified measures or drivers (e.g. policies, technological changes) on future developments and conditions. These often look at more 'visionary' or less likely options. An example is the *UNEP GEO-4 scenarios* (UNEP, 2007) and the most of the scenarios in the present catalogue.

These two types have also been described as the 'single incarnation of the future' scenario and the 'multiple baseline' (PBL, 2010) approach. Neither of these types of scenario is objectively 'better' than the other — their relative suitability will depend on the questions to be addressed. Normative scenarios are useful for finding ways of reaching specified goals or testing alternative policy interventions to see how effective and efficient they are and what undesired side-effects they may have. The futures they describe therefore need to be plausible. Explorative scenarios on the other hand examine possible future directions in the light of changes in various sectors. Here plausibility may be valued less highly, as the purpose may be to deepen understanding of alternatives and initiate and stimulate debate rather than to inform a specific course of action, for example how robust or responsive policy might be under extreme scenarios.

Other key characteristics that define scenarios include their thematic focus, spatial scale, temporal scale, links to other scenarios (e.g. the study is part of a series or uses scenarios or techniques from other studies) and target audience (e.g. research, policy or business).

The above paragraphs have highlighted some of the issues related to how scenarios are conceived and used. A recent, in-depth definition of environmental scenarios by Alcamo (2008) describes them in terms of their key components, as follows:

- A representation of the initial situation, including how past trends have shaped the current state. In quantitative studies this would equate to the 'base year'.
- A description of drivers of change or driving forces. These can be divided into 'direct' and 'indirect' drivers and should reflect uncertainties in driving forces, so that the exploration of possible options takes account of these uncertainties.
- A description of changes (time steps) in the future development of society and the environment, including interactions and analysis of how this affects the state of the system at different intervals.
- A description of an image of the future (time horizon). This is a narrative description of the end-state in terms of step-wise changes resulting from the assumptions about driving forces and interactions. The selection of an appropriate end-state year or 'time horizon' will depend on the objectives of the individual scenario exercise.
- A description of alternative pathways to the future. Scenarios are rarely developed alone but rather as one of a consistent set of scenarios that together 'elaborate a range of alternative paths to the future'.

Regarding the last point in particular, it should be emphasised that individual scenarios are 'building blocks' of larger studies, whose conclusions need to reflect the alternative pathways developed.

Alcamo's definition encompasses scenarios developed through both qualitative and quantitative approaches and it is important to look at the differences between these two approaches as well as how they can be combined.

Quantitative studies rely heavily on modelling methods. Such models are commonly used in many fields of study, including macroeconomics, energy and climate change. Models that look at more than one field are a newer area of work. Several studies listed in this catalogue, such as ACCELERATES and ALARM, combine models from several fields to study potential future impacts on biodiversity in Europe from a variety of pressures, including climate change and land use. In this context, the EEA (2008b) inventory of models is also relevant.

Quantitative studies typically have the advantage that their results and assumptions can be clearly presented. Moreover, many of these studies receive a degree of scientific scrutiny, including peer review. An example is *Growth and immigration scenarios for Turkey and the EU* (Erzan et al., 2004) based on forecasting probable magnitudes until 2030.

Quantitative studies have a number of disadvantages, however. In particular, they often imply to users that more is known about the future than is actually the case. Complex models and studies are often difficult to communicate to non-experts. Moreover, despite the growing complexity of quantitative modelling, these studies have difficulty capturing phenomena that cannot be expressed in numbers (such as important social or political changes) and thus remain limited in terms of how they can address a broad range of drivers of future situations.

In contrast, many qualitative studies do not provide any quantitative analysis, but rather a narrative description of future issues, paths and uncertainties. Qualitative methods have been used in many sectors, ranging from technology foresight to environment and politics. One example is *Global trends 2025: A Transformed World* or the study on *Russian Prospects — Political and Economic Scenarios* (NIC, 2005), which presents a total of eight scenarios for Russia's future to 2020, using purely qualitative methods that analyse plausible directions for the country's development.

Qualitative studies have the advantage that they can present complex systems in ways that are understandable, interesting and easy to communicate. Often, qualitative studies use participatory methods to bring together ideas from a variety of experts and stakeholders, and they can represent the views of different experts and stakeholders at the same time.

The drawback is that qualitative studies lack numerical estimates. Many users want to see quantitative projections of the future and for long-term investments and important policy decisions, such as planning for adaptation to climate change, quantitative projections can be valuable. Moreover, the assumptions and discussions that help to create qualitative scenarios may not be articulated clearly.

In practice, quantitative modelling and qualitative methods are increasingly used together. Many recent studies have combined participative scenario building exercises with quantitative modelling: examples include the EEA's *Prelude* (EEA, 2006) land use scenarios and UNEP's *GEO3* and *GEO4* studies (UNEP, 2002 and 2007). This combination of qualitative and quantitative methods is sometimes called the 'story and simulation' approach. Some, for example Prelude, are also based on the stakeholder participation approach.

1.3 Reviewing scenario-based studies as a component of the Knowledge base for Forward-Looking Information and Services (FLIS)

The review of available scenario-based studies emerged from the need to prepare a forward-looking assessment of the pan-European region's environmental prospects for the 'Environment for Europe' Ministerial Conference in Belgrade in 2007. The review enabled forward-looking environmental assessment by making use of existing scenarios. As scenario exercises are time consuming and costly, such an approach can add value by enabling more efficient and frequent use of scenarios in policymaking.

The FLIS component on scenarios also aims to add a foward-looking perspective to existing information systems. At present, information systems mostly consist of quantitative information focusing on past and current trends. Because forward-looking information, especially scenarios, largely consists of qualitative information, include it in information systems poses a challenge.

Overviews of available scenario studies can also provide the basis for a 'fast-track' approach to building scenarios. In some instances, researchers and policymakers may identify studies that share their own understanding of the current situation, including the influence of past trends and the drivers for change (the first two components of scenarios described by Alcamo). In such cases, the researchers can use those studies' time steps, time horizons and alternative pathways to the future as a contextual framework for exploring the particular questions or issues of interest to them.

The information about available scenarios can also provide a valuable starting point for designing new approaches and for developing new scenarios.

The aim of the scenarios component in the Knowledge base for FLIS is to provide an overview of available scenario studies relevant to environmental assessment and decision-making at the European (or sub-European) scale. This

will be done by actions including categorising scenarios by type, geographical and sectoral focus, and developing a decentralised online inventory of scenarios to facilitate the use of appropriate scenarios in environmental assessments and to identify and evaluate options for decision-making. Similar to the online inventory of models, the inventory of scenarios is also intended to provide a basis for improved transparency, evaluation and exchange, and will be updated on a regular basis.

Current scenarios work leads from previous EEA research and reporting, including *Scenarios as tools for international environmental assessments* (EEA, 2001a) and *Cloudy crystal balls, an assessment of recent European and global scenario studies and models* (EEA, 2000).

The report therefore brings together a summary of all these scenario studies into one place, using common description categories (fact sheets), enabling the user to review existing scenario studies that may be of relevance to their particular interest. The catalogue allows researchers and policy makers to benefit from previous studies and make use of — and build on — previous studies and sets of scenarios.

1.4 Review of the scenario studies

The EEA made an overview of available scenario studies in the pan-European region in 2006 and updated it in 2007 and in 2008 (Table 1.1). The resulting list of 263 scenario studies is provided in the annex of the present Catalogue, organised by geographical coverage, thematic focus and time horizon, and with web links to the source information, if available. In addition, EEA has published the Excel versions of this bibliography online (http://scenarios.ew.eea.europa.eu/).

The literature reviews served the purposes of different individual projects so they are not comprehensive. The goal is that over time updates and reviews will be conducted more systematically. The general criteria for the reviews of scenario-based studies were:

- to include studies using scenarios;
- to include studies at a range of spatial scales, including global and European where appropriate, as well as cross-national, national and sub-national scales;
- to include studies initiated by different actors, i.e. across research, policy and business domains;
- to identify studies whose approach, scope or results appeared to be particularly useful for environmental assessment;

For the purposes of this catalogue, certain scenario studies (notably 66 climate change scenarios) were excluded because the search was not extensive enough to cover them adequately. These studies will be included in future versions of the catalogue.

The catalogue itself presents 44 fact sheets on selected scenario studies. Each fact sheet provides a study's summary and describes the key characteristics of the study (e.g. thematic focus, spatial scale, temporal scale), as well as key elements of the methodology used, the methods of presentation and the organisations involved. Twelve of these studies were also assessed using SWOT analysis.

The catalogue will form the basis for an online inventory of scenarios with an advanced search tool. Following this, the inventory will be updated on a regular basis. Management tools will be based on the 'Assessment of Assessments' tool (EEA, 2010d) or the SENSE system (Shared European and National State of the Environment information) which is under development.
In the meantime, EnviroWindows — the Environmental Scenarios Information Portal (http://ew.eea.europa.eu) is the EEA's online content management system for environmental scenarios. It contains EEA environmental scenario reports; links to environmental outlook reports worldwide; links to relevant institutions, organisations and networks; overviews of key literature and EEA activities; and other useful resources. Specifically, EnviroWindows aims to facilitate access to information on outlooks and scenarios from an environmental perspective; support the development, analysis and understanding of environmental scenarios; and provide a meeting point for those interested in environmental scenarios.

Table 1.1 Reviews that contributed to the Catalogue

Geographical scale/ coverage	Time of the review	Breadth and criteria of the review
Global	2006, updated 2008	The literature review for this list focused on forward-looking studies in English, published by international organisations, governments, think tanks and NGOs. It also included some studies prepared by business sources. The review did not include academic studies. It focused on studies concerning environment, sustainability and related topics (e.g. energy).
Wider Europe ([a])	2006, updated 2008	The literature review for this region focused on forward-looking studies in English, prepared by international organisations and European institutions, as well as studies in English prepared by some national governments and think tanks (the review at national level was not comprehensive). It did not include academic studies. The review focused on studies about the environment, sustainability and key related topics (e.g. sectors such as agriculture and energy).
EEA member countries ([b])	2006, updated 2008	This is the least comprehensive literature review. A more structured, targeted and comprehensive approach is expected through cooperation with Eionet National Reference Centres for Forward-Looking Information and Scenarios. The review included randomly acquired forward-looking studies in English prepared by international organisations and European institutions, as well as studies in English prepared by some national governments and think tanks. It did not include academic studies. The review focused on studies about the environment, sustainability and key related topics (e.g. sectors such as agriculture and energy).
South-east European countries, including the western Balkans ([c])	2007	This review searched for studies both in English and in national languages of the region, and it looked for studies from all sources, including international organisations, national governments, business and academic institutions, and on all topics. A network of experts in the countries was engaged to support the review.
Eastern Europe, the Caucasus and central Asia ([d])	2006, updated 2008	This review searched for studies both in English and in national languages of the region from all sources, including international organisations, national governments, business and academic institutions, and on all topics. A network of experts in the countries was engaged to support the review.

Note: ([a]) **Wider Europe** includes studies which cover the region of all the European and central Asian members of the UN Economic Commission for Europe: all the countries from western, central and south-eastern Europe to eastern Europe, the Caucasus and central Asia.

([b]) The **EEA member countries** are: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

([c]) The **western Balkans** is comprised of Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Serbia.

([d]) **Eastern Europe** is comprised of Belarus, Moldova, Russia and Ukraine. The **Caucasus** is comprised of Armenia, Azerbaijan, and Georgia. **Central Asia** is comprised of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

Further information was obtained from EEA work on foresight (2007b) as well as other EEA research projects ([1]).

([1]) Other initiatives have provided an overview of forward-looking studies in the EU and at global scale. See for example the database of the European Foresight Monitoring Network (EFMN, http://www.efmn.info); the European Foresight website (http://forera.jrc.ec.europa.eu), which presents a wealth of future-oriented technology analysis and studies); Futurum database, university of Turku (http://www.tse.fi/EN/media/news/Pages/futurum.aspx).

2 About the Catalogue

This Catalogue presents 45 fact sheets of scenarios studies which were selected from the list of all reviewed studies (see Annex). The studies presented as fact sheets were selected on the basis of their relevance for environmental assessment and their geographical representation but excluded climate-change-focused studies.

As has been noted, this Catalogue does not seek to be comprehensive. It is part of the first phase of the work on cataloguing scenarios. In the next phases this Catalogue will be updated further and national governments (via the Eionet network) and other sources can help to maintain and expand the database of studies as well as the fact sheets.

In addition to text descriptions, all the studies were characterised by a set of icons (as explained below) which illustrate at a glance the main characteristics of the scenario study. The icons will be further developed for web presentation where they will be most useful.

2.1 Categorising the studies: geography

The studies are first organised according to their geographical focus: global studies, wider European studies, EEA member counties studies, western Balkans studies, eastern European studies, studies of Caucasus region, central Asia studies.

2.2 Categorising the studies: themes

The scenario studies cover a broad range of topics. The reviews categorised the studies in terms of a set of themes (Table 2.1) corresponding EEA website categorisation of themes (http://www.eea.europa.eu/themes). The list of EEA themes was, however, modified slightly to capture the range of issues found in forward-looking studies. For example, demography and economy were added as themes, as these are topics of many forward-looking studies.

The reviews found several studies that looked at environmental issues from a cross-thematic point of view. These were listed under the category 'environment and sustainability'. The reviews identified several global, cross-cutting studies (covering, for example, political, economic and environmental themes together). These were listed as 'global futures'. These two categories are presented by a common icon, named 'cross-sectoral' studies.

The resulting list of themes is shown in Table 2.1. The table presents these themes in terms of the 'STEEP' framework, which organises driving forces shaping the future in terms of social, technological, economic, environmental and political forces.

Table 2.1 Thematic categories

STEEP categories	Themes
Social	• demography (population, including migration) • health • society
Technology	• technology and innovation
Economic	• agriculture (including food) • economy • energy (including biofuels) • fisheries • forestry • industry • tourism • trade • transport
Environment	• air pollution • biodiversity (including habitats and ecosystems) • chemicals • climate change (mitigation and adaptation) • land use (including the urban environment) • soil • waste and material resources • water
	• assessments of specific regions, including arctic and mountain areas and regional seas • environment and sustainability
Politics	• global futures • politics

2.3 Description of the study: the fact sheet template

A common template has been developed to improve comparability.

A blank template presenting the structure of the fact sheets and a description of the content is included in Table 2.2. The icons used to fact sheets are presented in Table 2.3.

Table 2.2 Template for the fact sheets

Title of future study:			
1. Summary			
1.1 Summary of the forward-looking study			
This section provides a brief summary of the study, describing its topic, the main organisation responsible for developing and publishing it, and other introductory information.			
1.2 Summary of the scenarios			
This section briefly describes the scenarios or projections developed in the study and their main results.			
2. Description/ characteristics of future study	**Exploratory/ normative**	This section identifies whether the study is exploratory, normative, or a combination of the two. **Exploratory** scenarios are created to explore possible future trends, such as the effect of specified measures or drivers (e.g. policies, technological changes) on future development and conditions. **Normative** scenarios describe a desirable future or set a specific goal and explore possible ways to reach that goal.	Icon
	Qualitative/ quantitative	Identifies if the study is qualitative, quantitative or a combination of the two approaches (i.e. both). A **quantitative** study is one that mainly provides numerical results based on modelling and other mathematical calculations and analyses. Models can vary in complexity, and some studies, such as those to calculate greenhouse gas emissions often use several models that are linked. **Qualitative** scenarios describe possible futures in the form of words or visual symbols rather than numerical estimates. They can take the shape of diagrams, phrases or outlines, but more commonly they are made up of narrative texts, i.e. so-called 'storylines'. Note that some studies are identified as combining qualitative and quantitative approaches.	Icon
	Axes/factors considered	This section identifies the axes used to define the study's scenarios, or more generally the factors for scenario development where an axis approach is not used.	
	Number of scenarios	The number of scenarios and their titles.	
	Thematic focus	Describes the theme or themes covered by the scenario study. See also Table 2.1 for a list of the thematic categories.	Icon
	Specific issue focus	Describes the topic of the study in further detail.	
	Integration of environment/ society/ economy	The extent to which the study addresses and integrates these three elements of sustainable development.	
	Policy targets	Indicates whether or not the study focuses on policy targets and if so defines these in terms of three types: **Quantitative targets** are stated in precise numerical terms: e.g. 'stabilising atmospheric CO_2 concentrations at a maximum level of 450 ppm'. **Qualitative targets** are also precise and in many cases they are also measurable, although not according to specific numerical targets: e.g. 'reducing air pollutant emissions'. **Broad policy goals** are typically wide-ranging. They can include, for example, biodiversity protection.	
	Spatial scale	The spatial (i.e. geographical) area covered by the scenario study.	Icon
	Temporal scale	The time frame of the scenarios.	Icon
	Publication date/series	Identifies if the study is a one-off piece of research or part of a series that is regularly updated (e.g. annually, bi-annually).	Icon

Title of future study:			
	Origins/ derivation/ family	Describes links with other studies, e.g. whose scenarios or results are the origin for the scenarios in the study under revew. Also indicates if the study has been identified as part of a broader family of research.	
	Research/ policy/business	States whether the study was completed for purposes of research, business planning or exploring policy options or goals. Some studies represent combinations of these.	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Identifies if a description of the methodology used in the study is publically available, either in the study itself or in other documents that are references.	Icon
	Analytical/ participative/ both	Identifies if the study involved engagement with stakeholders, used a mainly analytical approach, or combined the two. A **participative approach** is one which makes use of active discussions and information sharing with stakeholders (individuals and organisations), e.g. through focus groups, workshops or seminars. Here a participative approach is taken to involve more than the immediate study authors. An **analytical approach** is one where the study is carried out by an individual or group as a desk-based exercise involving research and analysis.	Icon
	Level of engagement	Further detail where available on the ways in which relevant stakeholders and/or the public were involved in the study — either during or after the study.	
	Additional information on the methodology Provides additional description of the methodology used, where information is available.		
4. Purpose and application	**Objectives of the study and target audience**	Where available, a brief description of the objectives for study, in particular for its use, as well as the target audience.	
	Use of the study: By whom? For what end (objectives)? Examples of where used and when	Where available, brief information on bodies that have used the study and their objectives for doing so.	
5. Presentation/ communication	**How presented/ communicated, e.g. use of maps, charts, narratives**	Brief information on the ways the scenarios and information they contain are presented and described.	
	Language	The language(s) in which the study is published.	
	Access and cost	Information on how the study can be accessed (e.g. via the web), and how much, if anything, it costs to access the study.	Icon
6. Evaluation	**Any evaluation of their use?**	Describes, where information is available, if there has been any formal evaluation of the study outcomes and their use in practice.	
7. Organisations involved	**Initiator: commissioned/ funded by whom?**	Indicates, where appropriate, if a specific organisation commissioned, funded and/or sponsored the study.	
	Lead partner: developed by whom?	Identifies the main organisation that prepared the study.	Icon
	Types of other participating organisations (who participated in development?): Lists the types of other organisations participating in the study; where the list is not numerous, specific organisations may be named.		
8. References and contact information	Bibliographic reference for the study reports and contact information where available. This includes web links, contact names and email addresses where appropriate and available.		

Note: These fact sheets are based on information from the previous work of the EEA. An exhaustive review of each study was not possible. While every effort has been made to ensure that they are complete and up to date, some information may be missing. Internet addresses may not be working if changed after the review and possibly other information that may have been changed recently. For icons see Table 2.3.

2.4 Categorising the studies: icons

An icon is used to convey the key characteristics of studies, assisting in searches and providing a quick overview of study characteristics in the fact sheets. This approach provides transparency and insight into existing scenarios. Moreover, the intention is that these icons will also be used as the basis for the advanced search tool to be included in a online catalogue. In addition, the criteria and the icons may support future work in evaluating existing scenarios.

The selection of icons was based on a review of the fact sheets with the purpose to evaluate their characteristics, relevance and usability of the study and included:

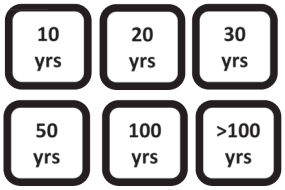
- Description and characteristics of the study: exploratory or normative; quantitative or qualitative; thematic focus; spatial scale; temporal scale; and publications date/series)
- Methodology: methodological transparency; and analytical or participative approach)
- Accessibility and organisation involved: cost; and lead partner).

The full set of icons used and their description is presented in Table 2.3.

Table 2.3 Icons by fact sheet category

Categorisation criteria	Suggested icons
Description/characteristics of future study: exploratory/normative	
Exploratory scenarios are created to explore the possible trends in the future, such as the effect of specified measures or drivers (e.g. policies, technological changes) on future development and conditions.	 Exploratory
Normative scenarios describe a desirable future or set a specific goal and explore possible ways to reach that goal.	 Normative
Note that some studies combine both approaches, for example presenting one or more exploratory scenarios plus one or more normative ones.	 Both
Description/characteristics of future study: quantitative/qualitative	
A **quantitative** study is one that mainly provides numerical results based on modelling and other mathematical calculations and analyses. Models can vary in complexity, and some studies, such as those to calculate greenhouse gas emissions often use several models that are linked.	 Quantitative
Qualitative studies describe possible futures in the form of words or visual symbols rather than numerical estimates. They can take the shape of diagrams, phrases or outlines, but more commonly they are made up of narrative texts, i.e. so-called 'storylines'.	 Qualitative
Note that some studies are identified as combining qualitative and quantitative approaches.	 Both

Categorisation criteria	Suggested icons
Thematic focus Identifies which theme, or themes, the scenario study considers. These are largely based on EEA's list of themes (http://www.eea.europa.eu/themes). See also the EEA glossary for definitions (http://glossary.eea.europa.eu). Table 2.1 provides the full range of thematic categories. Note that the icons are those relevant to the studies presented in fact sheets. The studies listed in the Annex also consider other themes. The reviews found several studies that looked at environmental issues from a cross-thematic perspective. These are listed under '**environment and sustainability**' in the tables in the Annex. The reviews also identified studies of future world developments across major sectors (covering, for example, political, economic and environmental themes together); these are listed as '**global futures**' in the Annex. These two categories, along with any studies looking at **demography**, fall under a common summary theme for the purposes of the fact sheets, represented by the '**cross-sectoral**' studies icon. Where a scenario study addresses or considers more than one theme, multiple icons are used.	 Cross sectoral  Climate change  Economy  Air pollution  Biodiversity  Agriculture  Natural resources: Forestry  Land use  Energy  Water  Transport  Technology
Spatial scale Identifies which region the scenario study addresses. Some studies cover the entire region indicated, whereas others may only cover sub-regions, countries or even sub-national areas. The icon for the smallest applicable region is applied (e.g. all studies related to EEA countries are also in the pan-European region but the former is used where possible). The **wider Europe** region includes all the European and central Asian members of the UN Economic Commission for Europe: it thus covers all the countries from western, central and south-eastern Europe to eastern Europe, the caucasus and central Asia. The 32 **EEA member countries** are listed on the Agency's web site: http://www.eea.europa.eu/about-us/countries-and-eionet. The **western Balkans** are comprised of Albania, Bosnia and Herzegovina, Croatia, former Yugoslav Republic of Macedonia, Montenegro and Serbia, and Kosovo under UN Security Council Resolution 1244/99. **Eastern Europe** refers to Belarus, Moldova, Russian Federation and Ukraine. **Central Asia** refers to Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The **Caucasus** is comprised of Armenia, Azerbaijan and Georgia.	 Global  Wider Europe  EEA countries  Western Balkans  Eastern Europe  Central Asia  Caucasus

Categorisation criteria	Suggested icons
Temporal scale Identifies the time period of the scenario study. Where not otherwise stated, this is based on the publication date and the further time horizon of the study's scenarios and projections. Icons are presented for six time periods; where a study falls between, the time period is rounded to that of the closest icon.	
Publication date/series Identifies if the study is a one-off piece of research, or if it is part of a series that is regularly updated (e.g. annually, biennially).	 Actively reviewed/ updated scenario study  One-off scenario study
Methodological transparency Identifies if a clear description of the methodology used in the study is publically available. **Note** that the assessment of transparency (and for all the other categories) is based on the information available to the project team. The catalogue of scenarios has drawn upon fact sheets and summaries created under previous projects and it is possible that in some cases information exists of which the project team was not aware.	 Transparent (methodology publically available)  Methodology not publically available
Analytical/participative approach Identifies if the study involved engagement with stakeholders or an analytical approach. A **participative approach** is one which makes use of active engagement, discussions and information sharing with stakeholders (individuals and organisations). Focus groups, workshops and seminars may typically used in participative approaches. Here a participative approach is taken to involve more than the involvement of scenario experts. An **analytical approach** is one where the study is carried out by an individual or group as a desk-based exercise involving research and analysis. In practice many studies make use of both approaches.	 Participative approach  Desk-based study; analytical approach
Cost Identifies if accessing the study implies a cost.	 No cost  < EUR 100  > EUR 100

Categorisation criteria	Suggested icons
Lead partner These icons identify the type, or types, of institution that led the development of the scenario study. Where more than one type of institution had a leading role in the scenario development, multiple icons may be used. **Academic** institutions include universities and research institutes. **Industry**/**commerce** include commercial enterprises and trade associations. **Non-governmental organisations** (NGO) are private, non-profit groups that usually pursue a social aim. They may operate at a local, national or international level. Intergovernmental organisations are associations of independent states, whose representatives gather for the promotion of common interests. They include United Nations bodies such as the UN Secretariat and the World Trade Organisation (WTO) as well as others bodies such as the Organisation for Economic Co-operation and Development (OECD). **EU organisations** includes the institutions created under the Treaty on the European Union. These bodies include the European Commission, Council and Parliament as well as specialised agencies and bodies such as the European Environment Agency. **National government** refers to the national ministries, departments and agencies of individual countries.	 Academic  Industry/ commerce  Non-governmental organisation  Intergovernmental organisation  EU organisations  National government

3 Fact sheets of selected scenarios studies relevant to European environment assessment

The fact sheets studies of selected scenarios studies relevant to European environment assessment are arranged by their geographical focus by regions:

3.1 Global studies

The literature reviews identified a total of 71 forward-looking studies at the global level (the full list is provided in the Annex).

The broad-based literature review carried out in 2006 and updated in 2008 in particular searched for forward-looking studies in English at the global scale prepared by international organisations, European institutions, national governments, think tanks and NGOs. It also included some studies prepared by business sources, notably the Shell Corporation and the World Business Council for Sustainable Development (WBCSD). The review did not include academic studies or studies published in languages other than English. Additional studies were identified by the separate literature reviews on forward-looking studies concerning ecosystems and climate change adaptation.

A total of eight fact sheets have been prepared of the studies that are potentially the most important for European assessments. Fact sheets for the following studies are presented in this sect

	Study (and scenario titles where available)	**Organisation**	**Thematic focus**	**Geographical coverage**	**Time horizon**
1	**Arctic Climate Impact Assessment**	ACIA, 2004 (The Arctic Council, International Arctic Science Committee (IASC))	Climate Change	Global	2100
2	**Energy to 2050: Scenarios for a Sustainable Future** • Clean but not sparkling • Dynamic but careless • Bright skies • Normative scenario	IEA, 2003 (International Energy Agency — www.iea.org)	Energy; Climate Change	Global	2050
3	**GEO4: Global Environment Outlook 4** • Sustainability First • Security First • Markets First • Policy First	UNEP, 2007 (UN Environment Program — www.unep.org)	Environment & Sustainability; Global Futures	Global	2050
4	**Global Trends 2025: A Transformed World** • A World Without the West • October Surprise • BRICs' Bust-Up • Politics Is Not Always Local	US National Intelligence Council (NIC), 2008 (http://www.dni.gov/nic/NIC_home.html)	Global Futures	Global	2025
5	**Millennium Ecosystem Assessment (scenarios)** • Global Orchestration • Order from Strength • Adapting Mosaic • Technogarden	Reid et al., 2005 (Millenium Ecosystem Assessment)	Biodiversity; Global Futures	Global	2050
6	**Mobility 2030: Meeting the Challenges to Sustainability** • The Price is Right • The Global Citizen • We'll do it our way	WBCSD, 2004 (World Business Council for Sustainable Development — http://www.wbcsd.org)	Transport	Global	2030 2050
7	**Shell Energy Scenarios to 2050:** • Scramble • Blueprints	Shell, 2008 (Shell Corporation — www.shell.com)	Energy; Climate Change	Global	2050
8	**World Energy Outlook 2009** • Reference scenario • 450 Scenario	IEA, 2009 (International Energy Agency — www.iea.org)	Energy	Global	2050

Title of future study:

Arctic climate impact assessment

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The Arctic Climate Impact Assessment, published in 2005 by the Arctic Council and the International Arctic Science Committee, evaluates and synthesizes knowledge on climate variability, climate change, and increased ultraviolet radiation and their consequences. Its aim is to make scientific findings accessible to policy makers.

1.2 Summary of the scenarios

Key projections and results include the following:

Cryosphere

Snow-cover extent is projected to decrease by about 13 % by 2071–2090.

Glaciers: The loss of glacial mass through melting is very likely to accelerate throughout the Arctic.

Permafrost: degradation is likely to occur over 10 to 20 % of the present area.

Sea-ice extent is very likely to continue to decrease, particularly in summer.

Terrestrial ecosystems

Forest changes: Forests are likely to expand and in some areas, where present-day tundra occupies a narrow zone, are likely to reach the northern coastline.

Species diversity: Climate warming is very likely to lead to northward extension of the distribution ranges of species currently present in the Arctic and to an increase in the total number of species, as well as a decline or extirpation of populations of arctic species at their southern range margins.

Species at risk: Specialist species adapted to the cold arctic climate, ranging from mosses, lichens, vascular plants, some herbivores (lemmings and voles) and their predators, to ungulates (caribou and reindeer), are at risk of marked population decline or extirpation locally.

Freshwater ecosystems:

Rivers: A likely shift to less intense ice breakup will reduce the ability of flow systems to replenish riparian ecosystems, particularly in river deltas.

Wetlands: Changes in climate are very likely to lead to an increased extent of wetlands, ponds, and drainage networks in low-lying permafrost-dominated areas, but also to losses of wetlands on hill slopes and higher ground.

Species diversity: The rate and magnitude of climate change and its effects on aquatic systems are likely to outstrip the capacity of many aquatic biota to adapt or acclimatise.

Social impacts on Arctic residents:

Infrastructure: Permafrost thawing is very likely to threaten buildings, roads, and other infrastructure.

Health: Circumpolar health problems such as those associated with changes in diet and UV radiation levels are likely to become more prominent.

Income: Expected increases in productivity and greater opportunity for settlement are likely to benefit people within and beyond the region.

Economic activities:

Oil and gas exploration: Reduced sea ice is likely to facilitate offshore operations but hamper work on areas now covered by shore-fast ice.

Transportation: Reduced extent and duration of sea and river ice are likely to lengthen the shipping season and shorten routes (including trans-polar routes).

Timber: Productivity is likely to increase if there is adequate soil moisture but decrease if there are summer droughts. Fire and insect outbreaks are likely to decrease productivity.

Agricultural products: Productivity is likely to increase if there is adequate soil moisture but decrease if there are summer droughts. Fire and insect outbreaks are likely to decrease productivity.

Title of future study: Arctic climate impact assessment			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	**Exploratory**	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	Impacts of climate change	
	Number of scenarios	One main set of projections	
	Thematic focus	Climate change	
	Specific issue focus	Climate change impacts in the Arctic	
	Integration of environment/ society/economy	Focus on environment; also looks at social and economic impacts	
	Policy targets	No targets or goals specified	
	Spatial scale	Arctic region	
	Temporal scale	2100	
	Publication date/series	Published in 2005	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methdological transparency	Yes, a description is provided	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led	
	Additional information on the methodology Climate modelling using global coupled atmosphere-ocean general circulation models (AOGCMs)		
4. Purpose and application	**Objectives of the study and target audience**	The objective of the project was to make scientific findings in the area of climate variability, climate change, and increased ultraviolet radiation and their consequences accessible to policymakers and the broader public	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	

Title of future study: Arctic climate impact assessment			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	A comprehensive report with many coloured figures and graphs	
	Language	English	
	Access and cost	Full electronic versions of the reports available for free on the IASC website; hard copies available from Cambridge University Press for USD 250	Free
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	The Arctic Council, International Arctic Science Committee (IASC)	
	Lead partner: developed by whom?	The Arctic Council, International Arctic Science Committee (IASC)	INT. ORG
	Types of other participating organisations: National science organisations		
8. References and contact information	ACIA, Arctic Climate Impact Assessment, Cambridge University Press, 2005 http://www.acia.uaf.edu/ http://www.acia.uaf.edu/PDFs/ACIA_Policy_Document.pdf		

Title of future study:

Energy to 2050: scenarios for a sustainable future

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This 2003 study prepared by the International Energy Agency develops four scenarios of global energy futures. The study explores energy futures to 2050 using both exploratory and normative scenarios. Along the two main axes for the exploratory scenarios — technology change (slow vs. fast) and environmental preferences (little vs. great environmental concern) — three scenarios were developed. A fourth, normative scenario focuses on three policy goals for 2050: climate change, energy security and access to electricity.

1.2 Summary of the scenarios

1. Clean but not sparkling

Strong environmental concern but slow technology change.

To 2025: global reluctance to embrace nuclear power or carbon capture, slow improvements in and environmental policy obstacles to solar and other technologies.

2025–2035: OECD country slowdown in economic growth and carbon reductions means a reassessment of technology options; environmental problems bring rising concern in developing world.

2035–2050: reassessment of technology options in OECD countries and GHG commitments in developing world. Meeting GHG goals remains difficult, however.

2. Dynamic but careless

Rapid economic growth and low energy prices (along with energy security) are the priorities, while environmental concerns remain local.

To 2015, fossil fuels remain the predominant energy source.

From 2015 to 2030, oil prices rise, prompting an increasing in natural gas (which also rises), but energy security and terrorism problems increase. GHG emissions rise faster than energy use, while growing local environmental problems encourage technology solutions for cleanup.

After 2030, in the face of growing problems, nuclear energy, hydrogen and energy efficiency become widespread. GHG emissions start to decline.

3. Bright skies

Both technological change and environmental concerns are strong. Strong trade and market liberalisation.

2003–2025: developed countries launch a concerted effort to reduce GHG emissions through new technologies, including energy efficiency, reduced auto use and a shift away from coal. Developing countries start to follow these trends.

2025–2050: low and zero carbon technologies take an increasing role, including renewables, nuclear and carbon sequestration for power and hydrogen for transport. GHG emissions from developed countries start to fall early in this period, and those from developing countries by 2050.

4. Normative scenario

Based on three main quantitative targets:

- 60 % of world energy is 'non-carbon' sources by 2050 (climate change goal)
- 60 % plus of transport fuel comes from non-oil sources (energy security goal)
- 95 % world population has access to electricity (access goal)

To meet these goals, important increases in renewables, coal, natural gas and nuclear energy will be needed. Carbon sequestration needed if total carbon emissions are to fall. Identifies clear need for significant energy efficiency improvements, especially in transport. Notes possible risks, e.g. if non-oil goal is accomplished mainly by switching to natural gas, energy security will remain a problem.

Title of future study: Energy to 2050: scenarios for a sustainable future			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Three exploratory scenarios and one 'normative' scenario	
	Qualitative/quantitative	Both: narrative scenarios with quantitative results	
	Axes/factors considered	Pace of technology change and Environmental preferences in society	
	Number of scenarios	Four: 1. Clean but not sparkling 2. Dynamic but careless 3. Bright skies 4. Normative scenario	
	Thematic focus	Energy; climate change	 
	Specific issue focus	Climate change	
	Integration of environment/ society/economy	Integration between climate change goals and energy futures	
	Policy targets	Broad policy goals for the policy scenario: reduce GHG emissions; ensure energy security; provide electricity access	
	Spatial scale	Global	
	Temporal scale	2003 to 2050	
	Publication date/series	Published in 2003	
	Origins/derivation/family	The normative scenario is based on a framework developed by International Institute for Applied Systems Analysis (IIASA) for IPCC, elaborated with further quantitative data	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, methodological information provided in report	
	Analytical/participative/both	Research and analysis	

Title of future study: Energy to 2050: scenarios for a sustainable future			Descriptive icon
	Level of engagement	An international seminar of scenario experts helped to identify factors, trends and key drivers. Results were then elaborated by an internal team. 'Uncertain, high-impact' drivers were ranked by a Delphi process	
	Additional information on the methodology The analysis was carried out in a qualitative fashion based on existing knowledge, but whenever possible, causal links were identified		
4. Purpose and application	**Objectives of the study and target audience**	The study states that it is intended as a 'tool for the governments of IEA countries to assess and, when appropriate, consider redirecting their energy and environment policies'	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available on use	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text (publication), with limited charts and tables; further data presented in an appendix	
	Language	English	
	Access and cost	PDF report available for free on the IEA website	Free
6. Evaluation	**Any evaluation of its use?**	According to an IEA official, this study has been used more by 'academic circles', in comparison to the annual World Energy Outlook, which is used by government as well as business	
7. Organisations involved	**Initiator**	International Energy Agency	INT. ORG
	Lead partner: developed by whom?	International Energy Agency	
	Types of other participating organisations: National officials and experts participated in the development of the scenarios		
8. References and contact information	International Energy Agency, *Energy to 2050: Scenarios for a Sustainable Future*, 2003, Paris http://www.iea.org/publications/free_new_key_result.asp?keys2=4107&Submit=Submit http://www.iea.org/Textbase/publications/free_new_Desc.asp?PUBS_ID=1226		

Title of future study:
GEO4: Global Environment Outlook 4

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

UNEP's 2007 fourth Global Environment Outlook — environment for development (GEO-4) assesses the current state of the global atmosphere, land, water and biodiversity, describes the changes since 1987, and identifies priorities for action. The report has four major sections: an overview of the state and trends of the environment (1987–2007); regional perspectives (1987–2007); human dimensions of environmental change including an analysis of the global distribution of people's vulnerability to environmental change; and a scenario-based analysis of the outlook towards 2015 and 2050. The analysis is used to make policy recommendations.

The report presents four scenarios to the year 2050, using narrative storylines and quantitative forecasts to explore different policy approaches and societal choices at both global and regional levels. Scenarios are developed based on assumptions about the interactions among variables in the following areas: demography; human development; science and technology; governance; culture; and environment. The focus is then on the environmental implications of each narrative. Results are elaborated by region: Africa, Asia and the Pacific; Europe; Latin America and the Caribbean; North America; West Asia and the Polar Regions.

1.2 Summary of the scenarios

1. Sustainability First

In response to the challenge of sustainability, a new environment and development model emerges. This leads to sustainable policy measures and accountable corporate behaviour, as well as greater collaboration among governments, citizens and other stakeholder groups in decision-making on issues of close common concern. A consensus is reached on what needs to be done to satisfy basic needs and realize personal goals without impoverishing others or spoiling the outlook for posterity. This scenario results in the best environmental outcomes.

2. Security First

Socio-economic and environmental stresses give rise to waves of protest and counteraction. As such troubles become increasingly prevalent, more powerful and wealthy groups focus on self-protection, creating enclaves akin to the present day 'gated communities'. Such islands of advantage provide a degree of enhanced security and economic benefits for dependent communities in their immediate surroundings but they exclude the disadvantaged mass of outsiders. Outside the walls, welfare and regulatory services fall into disuse but market forces continue to operate.

3. Markets First

Most of the world adopts market-oriented values and expectations. The wealth of nations and the optimal play of market forces dominate social and political agendas. Trust is placed in further globalization and liberalization to enhance corporate wealth, create new enterprises and livelihoods, so develop resources to help people and communities address — or pay to fix — social and environmental problems. Ethical investors, together with citizen and consumer groups, try to exercise corrective influence but are undermined by economic imperatives. The powers of state officials, planners and lawmakers to regulate society, economy and the environment continue to be overwhelmed by expanding demands.

4. Policy First

Problems are addressed in a top-down way: the government initiates and implements strong policies to improve the environment and human well-being, with an emphasis on economic development as well. Although measures are aimed at promoting sustainable development, social and economic considerations prevail.

Title of future study: GEO4: Global Environment Outlook 4			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative narratives take centre stage with the quantitative tools playing a supporting role	
	Axes/factors considered	Free markets (globalisation, liberalisation) vs. policy driven agenda for society and environment. Selfishness, individualism and inequality vs. new egalitarian values and institutions of sustainability	
	Number of scenarios	Four: 1. Markets First 2. Policy First 3. Security First 4. Sustainability First	
	Thematic focus	Environment and sustainability; global futures	
	Specific issue focus	A range of global environmental issues, including: climate change; biodiversity; water and food needs; land degradation; water stress; transport and air pollution; deforestation; fisheries depletion	
	Integration of environment/ society/economy	Economic, social and environmental factors are closely integrated	
	Policy targets	No explicit targets. Broad policy goals include: alleviating poverty; reducing over-consumption; debt relief; and better environmental governance	
	Spatial scale	Global, with analysis for major world regions in the main reports; some sub-regional and national reports and data sets available on the web	
	Temporal scale	2015/2050	
	Publication date/series	Published in 2007. Ongoing UNEP series. Predecessors were: GEO-1 (1997); GEO-2000 (1999) and GEO-3 (2002). GEO-5 in preparation. Other reports cover specific issues and regions of the world — e.g. Africa Environmental Outlook in 2006, Caucasus Outlook in 2003 (the latter is described in this Catalogue)	
	Origins/derivation/family	Some studies have used GEO work as a starting point: for example, RIVM and UNEP, Four Scenarios for Europe, 2003	
	Research/policy/business	Policy/ research	

Title of future study: GEO4: Global Environment Outlook 4			Descriptive icon
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	The study report describes the methodology. Moreover, the UNEP GEO web site provides further information, including technical reports and data. See: http://www.unep.org/GEO/ and http://www.unep.org/GEO/GEO_Products/Technical_Reports/	
	Analytical/participative/both	Both (see below)	
	Level of engagement	The four global story lines were developed by UNEP's Global Scenario Group and then refined with a team of global and regional experts from approximately 40 collaborating centres based in government bodies, NGOs or universities around the world. Regional and global consultations with many stakeholders contributed to the study results	
	Additional information on the methodology The scenarios of the GEO4 represent an updated and revised version of GEO3, both in terms of narratives and the quantification. Seven regional teams developed narrative descriptions of each of the four scenarios from the perspective of each region. Each group considered how events or trends in their region might influence, or be influenced by developments in other regions and at the global level. Nine quantitative analytical tools (models) are used: 1. International Futures (IFs), an integrated modelling system for the analysis of long-term country-specific, regional, and global futures across multiple and interacting issue areas. 2. IMPACT (International Model for Policy Analysis of Agricultural Commodities), a representation of a competitive world agricultural market 3. EwE (Ecopath with Ecosim) 4. LandSHIFT an integrated model system that aims at simulating and analysing land use dynamics and their impacts on the environment at global and continental level. 5. CLUE-S (Conversion of Land Use and its Effects) 6. AIM (Asian pacific Integrated Model) to assess climate and environmental changes in Asia and the Pacific 7. GLOBIO to visualise the cumulative impacts on biodiversity and ecosystem function of growth in human resource demand and associated infrastructure development 8. IMAGE 2.2, to model a broad range of environmental changes at a high spatial resolution for 17 world regions, based on a general equilibrium model 9. WaterGAP 2.1 for analysis of water resources in all major drainage basins worldwide		

Title of future study: GEO4: Global Environment Outlook 4			Descriptive icon
4. Purpose and application	**Objective of the study and target audience**	Target audience: global policymakers and stakeholders as well as a broader public. GEO 'aims at providing comprehensive, reliable, scientifically credible, and policy relevant assessments on the interaction between environment and society', according to UNEP, and it 'underlines choices for policy makers'	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	GEO-4 seeks to inform global policy makers and stakeholders of the need to address environment and sustainability issues	
5. Presentation/ communication	**How presented/ communicated, e.g. use of maps, charts, narratives**	Single report that uses global/ regional maps, pie charts, bar graphs to compare pressures and impacts, both in the past and under the scenarios. Separate fact sheets introduce specific issues	
	Language	English/Spanish/French/Russian/Chinese/Arabic (full report)	
	Access and cost	The study is available in full, for free, on UNEP's website. Hard cover version is for sale on EarthPrint website	Free
6. Evaluation	**Any evaluation of its use?**	A user profile and impact study was carried out for GEO-2000. No information found on evaluations of GEO-4	
7. Organisations involved	**Initiator**	United Nations Environment Programme (UNEP)	
	Lead partner: developed by whom?	UNEP GEO Team, Division of Early Warning and Assessment, Nairobi	INT. ORG
	Types of other participating organisations UNEP regional centres and other UN Agencies and organisations and institutions around the world, including think tanks, research institutes and other national/ international organisations		
8. References and contact information	UNEP (2007) Global Environment Outlook 4 (GEO-4): Environment for Development. http://www.unep.org/geo/geo4/report/GEO-4_Report_Full_en.pdf		

Title of future study:
Global trends 2025: a transformed world

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study, prepared by the US National Intelligence Council, presents four scenarios for global economic and political futures. The study identifies trends that are seen as relatively certain, e.g.:

- A global multipolar system is emerging with the rise of China, India, and other countries — the role and authority of 'the west' will decline
- The United States will remain the single most powerful country but will be less dominant
- Economic and population growth will put pressure on water, energy and natural resources
- The potential for conflict will increase owing to rapid changes in parts of the greater Middle East and the spread of lethal capabilities.

The study also identifies key uncertainties, which include the following:

- The extent of global transition away from oil and natural gas by 2025
- The severity of local impacts of climate change
- Advances in democracy in Russia and China
- Reduction in Middle East instability
- Europe and Japan's ability to address social and economic challenges from ageing
- Whether global powers can adapt international institutions to the new geopolitical landscape

1.2 Summary of the scenarios

1. A World Without the West

The US feels overburdened and withdraws from central Asia, including Afghanistan; Europe will not step in and take the lead. Russia, China, and others are forced to deal with the potential for spillover and instability in central Asia. Anti-China antagonism in the US and Europe reaches a crescendo; protectionist trade barriers are put in place. Russia and China enter a marriage of convenience; other countries — including India and Iran — rally around them. The lack of any stable bloc — whether in the West or the non-Western world — adds to growing instability and disorder, potentially threatening globalization. Tensions between the principal actors in the multi-polar world are high as states seek energy security and strengthened spheres of influence.

2. October Surprise

Countries are preoccupied with achieving economic growth at the expense of safeguarding the environment. Governments, particularly those lacking transparency, lose legitimacy as they fail to cope with environmental and other disasters. The scientific community worries that a tipping point has been reached in which climate change has accelerated and possible impacts will be very destructive. New York is hit by a major hurricane linked to global climate change; in the face of such destruction, world leaders begin to think about drastic measures, such as relocating parts of coastal cities.

3. BRICs' Bust-Up

A steady period of growth has slowed as states struggle to cope with energy and resource shortages, which are particularly acute in the Asian economies. Conflict breaks out between China and India over access to vital resources. Outside powers intervene before the conflict escalates globally. A balance of power emerges that resembles a 21st century replay of the years before 1914.

4. Politics Is Not Always Local

NGOs, religious groups, business leaders, and local activists combine to set the international agenda on the environment and use their clout to choose the UN Secretary General. The global political coalition of non-state actors plays a crucial role in securing a new worldwide climate change agreement. In this connected world of digital communications, growing middle classes and trans-national interest groups, domestic and international agendas become increasingly interchangeable.

Title of future study: Global trends 2025: a transformed world			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Mainly qualitative	
	Axes/factors considered	The scenarios are developed based on a series of factors. These include: Severity of climate change impacts Development or absence of strong international institutions Reactions by nation states Role of non-state actors	
	Number of scenarios	Four: 1. A World Without the West 2. October Surprise 3. BRIC's Bust Up 4. Politics is not Always Local	
	Thematic focus	Global Futures	
	Specific issue focus	Climate change, resource competition	
	Integration of environment/ society/economy	A certain degree of integration, but not explicit	
	Policy targets	No targets or goals specified	
	Spatial scale	Global	
	Temporal scale	To 2025	
	Publication date/series	Published in November 2008. The NIC previously carried out a study entitled Mapping The Global Future: Report of the National Intelligence Council's 2020 Project, which included the Eurasia 2020 study, also described in this Catalogue	 
	Origins/derivation/family	The NIC has used the International Futures (IF) model, also used in several other studies including UNEP's GEO4	
	Research/policy/business	Research	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Little information in the report itself	
	Analytical/participative/both	Both	 

Title of future study: Global trends 2025: a transformed world			Descriptive icon
	Level of engagement	Six seminars on five continents were used to inform the scenarios. The scenarios themselves were constructed using a number of key drivers and analyses on how these drivers might combine	
4. Purpose and application	**Objectives of the study and target audience**	The aim of the study is not specified — however, the NIC's work in general supports the development of US foreign and military policies. The target audience may be US government policy makers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available on its actual use	
5. Presentation/ communication	How presented/communicated, e.g. use of maps, charts, narratives	Narrative — no maps or charts	
	Language	English	
	Access and cost	Electronic version of the report available for free on the NIC website	Free
6. Evaluation	Any evaluation of its use?	No information available	
7. Organisations involved	Initiator	US National Intelligence Council	
	Lead partner: developed by whom?	US National Intelligence Council	GOV
	Types of other participating organisations: US-based research institutes and government agencies		
8. References and contact information	National Intelligence Council (2008), Global Trends 2025: A Transformed World. ISBN 978-0-16-081834-9 http://www.dni.gov/nic/PDF_2025/2025_Global_Trends_Final_Report.pdf http://www.dni.gov/nic/NIC_2025_project.html		

Title of future study:

Millennium Ecosystem Assessment: ecosystems and human well-being — scenarios

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The Millennium Ecosystem Assessment,(MEA), published in 2005, aims to assess the consequences of ecosystem change for human well-being and the scientific basis for action needed to enhance the conservation and sustainable use of those systems and their contribution to human well-being. The MEA reports provide a state-of-the-art scientific appraisal of the condition and trends in the world's ecosystems and the services they provide and the options to restore, conserve or enhance the sustainable use of ecosystems. As part of the MEA project, scenarios to 2050 were developed by a Scenarios Working Group, with the aim of exploring the consequences of different development paths for ecosystems and ecosystem services.

1.2 Summary of the scenarios

1. Global Orchestration

This scenario depicts a globally connected society in which global trade and economic liberalization reshape economies and governance, emphasizing the creation of markets that provide equitable access to goods and services. These policies, in combination with large investments in global public health and the improvement of education worldwide, generally succeed in promoting economic expansion and lift many people out of poverty into an expanding global middle class. Supranational institutions in this globalized scenario address global environmental problems such as climate change and fisheries, but in a reactive ways. In terms of biodiversity, despite actions to protect biodiversity, land conversion, climate change and other pressures harm many ecosystems.

2. Order from Strength

This scenario presents a regionalized and fragmented world concerned with security and protection and paying little attention to common goods. Agreements on global climate change, international fisheries and the trade in endangered species are only weakly and haphazardly implemented, resulting in degradation of the global commons. Movements of invasive species between countries are reduced. Ecosystems decline, in particular in developing countries.

3. Adapting Mosaic

This scenario sees the rise of local ecosystem management strategies and the strengthening of local institutions. Investments in human and social capital are geared toward improving knowledge about ecosystem functioning and management, which results in a better understanding of resilience, fragility, and local flexibility of ecosystems. Eventually, the focus on local governance leads to some failures in managing the global commons. Communities begin to develop networks among communities, regions, and even nations to better manage the global commons. Solutions that were effective locally are adopted among networks. Sharing good solutions and discarding poor ones eventually improves approaches to a variety of social and environmental problems. The rate of biodiversity loss stabilises at low levels, and ecosystem services are protected in many parts of the world.

4. Technogarden

The Technogarden scenario depicts a globally connected world relying strongly on technology and highly managed, often engineered ecosystems to deliver ecosystem services. The overall efficiency of ecosystem service provision improves but is shadowed by the risks inherent in large-scale human-made solutions and rigid control of ecosystems. A decrease in the rate of biodiversity loss is expected, due to a significant reduction in land use change. However, major technological failures could lead, for example, to outbreaks of new pests and diseases threatening biodiversity.

Title of future study: Millennium Ecosystem Assessment: ecosystems and human well-being — scenarios			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory/ Range of alternative futures	
	Qualitative/quantitative	Qualitative and quantitative	
	Axes/factors considered	1. Approach to ecosystem management (reactive or proactive) 2. Institutions (globalised and co-ordinated or regionalised and devolved)	
	Number of scenarios	Four : 1. Global Orchestration 2. Order from Strength 3. Adapting Mosaic 4. Technogarden	
	Thematic focus	Biodiversity; global futures	 
	Specific issue focus	Global development paths for ecosystems and ecosystem services	
	Integration of environment/ society/economy	Integration of socio-economic factors in environmental assessment	
	Policy targets	Broad policy goals include the protection of global biodiversity and human well-being	
	Spatial scale	Global	
	Temporal scale	2050 (though scenario descriptions also look at implications beyond this time frame)	
	Publication date/series	Published in 2005	
	Origins/derivation/family	Original	
	Research/policy/business	Research	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, reports on web site contain information on methodology	
	Analytical/participative/both	Both	 
	Level of engagement	Full description not available	

Title of future study: Millennium Ecosystem Assessment: ecosystems and human well-being — scenarios			Descriptive icon
	Additional information on the methodology Expert judgements to produce narratives; computer modelling to produce quantitative indicators. The models used included: • IMPACT (International Food Policy Research Institute) for food supply, demand and trade • Water GAP (University of Kassel) for water demand and supply • AIM (National Institute for Environment Studies in Japan) for land use and other global changes • IMAGE 2.2 (RIVM) for climate and land use • Ecopath with Ecosim (University of British Columbia) for fishing and marine ecosystems		
4. Purpose and application	**Objectives of the study and target audience**	The MEA scenarios assessment is targeted at decision-makers across the world, with the overall aim of contributing to improved decision-making concerning ecosystem management and human well-being, and to building capacity for scientific assessments of this kind. The scenarios aim to provide a framework to assess future policies and management options for the conservation of ecosystems and the sustainable use of their services	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available on actual use	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text/graphs/tables The scenarios report is one of several MEA outputs	
	Language	English — available in full and synthesis	
	Access and cost	Available on Millennium Assessment web site for free (see below)	
6. Evaluation	**Any evaluation of its use?**	An evaluation was planned; information on results not available	
7. Organisations involved	**Initiator**	UNEP	
	Lead partner: developed by whom?	UNEP	
	Types of other participating organisations: A broad range of UN and other organisations participated in the board and secretariat for the assessment. Key partners include: World Resources Institute; United Nations Development Programme; and World Bank. The International Council for Science's (ICSU) Scientific Committee on Problems of the Environment (SCOPE) supported the Scenarios Working Group. Information on other partners available on website		

Title of future study: Millennium Ecosystem Assessment: ecosystems and human well-being — scenarios		Descriptive icon
8. References and contact information	Reid et al., 2005 *Millennium Ecosystem Assessment Synthesis Report*. Island Press, 2005, Ecosystems and Human Well-Being: Scenarios, Finding of the scenarios working group, Millenium Ecosystems Assessment, Series Volume 2, December 2005 http://www.millenniumassessment.org/en/Scenarios.aspx Springer New York, 2005, Global Scenarios: Background Review for the Millennium Ecosystem Assessment; Volume 8, Number 2/March 2005 Alcamo et al. 2003 *Ecosystems and Human Well-Being: A Framework for Assessment*. A Report of the Conceptual Framework Working Group of the Millennium Ecosystem Assessment	

Title of future study:

Mobility 2030: meeting the challenges to sustainability

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study is the final report of the World Business Council for Sustainable Development's project on Sustainable Mobility, providing a vision of global road transportation for the mobility of people, goods and services. The main report looks at road transport, and it defines 'sustainable mobility' as a goal (the foreword notes that 'promoting mobility' is a goal of the companies involved in the project: eight auto manufacturers, two oil companies, a tyre manufacturer and an electricity and aluminium manufacturer).

1.2 Summary of the scenarios

The study's reference scenario makes projections of current trends to 2050. The report then looks at seven policy targets and describes measures to address these. The reference scenario uses a set of indicators to track trends in transport and its impacts. These follow the project's seven goals for sustainability (described below under policy targets). The report reviews possible technology developments, in particular for automobiles. Each goal is discussed in terms of technology and other developments needed to meet it and alternative projections are presented for specific indicators.

While the report mentions demand management, it underlines the difficulty of this approach and then focuses attention on the results of changes in transport technology and fuel. For example, on limiting GHG emissions, the report notes the opportunity of current technologies such as diesel and hybrid engines and the promise of future ones such as fuel cells.

Three alternative scenarios were developed in the project. The scenarios were intended to provoke thought and discussion in the project team, and thus were mainly an internal tool for the main report.

The scenarios appear to be exclusively narrative, i.e. no modelling was done in their preparation. The appendix describes the three scenarios; driving forces; early signs; a storyline (as well as sample future news headlines); and the challenges for WBCSD. In addition, within each scenario, there are bullet points for two paths, towards and away from sustainability. The appendix also describes possible 'wild cards'.

1. The Price is Right
   A free-market world, with growing rich/poor disparity and a lack of attention to long-term issues. The scenario foresees that widespread use of carbon sequestration reduces attention to climate change issues; instead, access to safe drinking water becomes a primary question. Markets and market-oriented interventions become dominant. Within this scenario, a path 'towards sustainability' involves corporate attention to sustainability issues and technology innovation.
2. The Global Citizen
   Energy supply shocks and other events prompt strong policy interventions worldwide. There is a strong role for NGOs and for public/private partnerships. In this scenario, a path 'away from sustainability' could result from a lack of corporation participation and slow technology development.
3. We'll do it our way
   A fracturing of the global community, increased nationalism and also a great number of local solutions to environmental and mobility problems. The scenario involves development on a regional basis, increased global security fears and slower technology progress.

Title of future study: Mobility 2030: meeting the challenges to sustainability			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory and normative: each scenario briefly looks at paths towards and away from sustainability	
	Qualitative/quantitative	The scenarios are mainly narrative	
	Axes/factors considered	Transport technology Policy actions	
	Number of scenarios	Four: 1. Reference scenario 2. The Price is Right 3. The Global Citizen 4. We'll do it our way	
	Thematic focus	Transport	
	Specific issue focus	Sustainable mobility	
	Integration of environment/ society/economy	Sustainable development is a central theme	
	Policy targets	Qualitative targets include: • Reduce local air pollution • Limit GHG emissions • Reduce vehicle-related deaths and injuries • Reduce transport-related noise • Mitigate congestion • Reduce 'mobility divide' between rich/poor • Preserve and improve mobility opportunities	
	Spatial scale	Global, with focus on urban areas	
	Temporal scale	2030 (actions); 2050 (projections)	
	Publication date/series	Published in 2004	
	Origins/derivation/family	WBCSD Sustainable Mobility project, led by member companies (mainly in auto and oil sectors)	
	Research/policy/business	Business/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, information available on the web site	

Title of future study: Mobility 2030: meeting the challenges to sustainability			Descriptive icon
	Analytical/participative/both	Both	
	Level of engagement	The scenarios were prepared by a US-based consultancy through a survey and a workshop of officials from the WBCSD companies involved the project. (In addition, four outside experts advised.) Nine stakeholder workshops held worldwide helped shape the project and its conclusions	
	Additional information on the methodology The reference scenario makes projections of current trends to 2050, using the 'Global Transport Spreadsheet Model', developed with IEA		
4. Purpose and application	**Objectives of the study and target audience**	The goal of the project is to provide a business perspective on the challenges for 'sustainable mobility'. The scenarios were intended to provoke thought and discussion in the project team, and thus were mainly an internal tool for the main report	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Full-colour report with many figures and tables. The report is published in English, French, German, Portuguese and Japanese. The scenarios are presented in an annex separate from the main report	
	Language	Full report available in English, Portuguese and Japanese. Executive summary and overview available in French, German, and Chinese	
	Access and cost	Full reports and summaries available for free on WBCSD website	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	World Business Council for Sustainable Development	
	Lead partner: developed by whom?	World Business Council for Sustainable Development	
	Types of other participating organisations: WBCSD member companies		
8. References and contact information	World Business Council for Sustainable Development. *Mobility 2030: Meeting the challenges to sustainability.* Geneva. 2004. http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&ObjectId=NjA5NA		

Title of future study:

Shell energy scenarios to 2050

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The Shell energy scenarios, published in 2008, were developed to help think about the future of energy by describing two alternative ways such a future may develop. Two scenarios are developed (Scramble and Blueprint), both of which are rooted in detailed analyses of energy supply, demand and technology fundamentals.

1.2 Summary of the scenarios

1. Scramble:

Scramble sees a focus on national energy security. Immediate pressures drive decision-makers, especially the need to secure energy supply in the near future for themselves and their allies. Growth in coal and biofuels becomes particularly significant. Greenhouse gas emissions are not seriously addressed until there are major climate shocks. When supply crises occur, governments react with draconian measures.

2. Blueprints

New coalitions of interests, built on a combination of supply concerns, environmental interests, and associated entrepreneurial opportunities, forge new alliances that promote action in both developed and developing nations. From 2012, a critical mass of nations participate in meaningful emissions-trading schemes, stimulating innovation and investment in new energy technologies and paving the way to CO_2 capture and underground storage after 2020. By 2050, economic growth no longer mainly relies on an increase in the use of fossil fuels. Nevertheless, stabilising GHG levels in the atmosphere at or below 450 ppm of CO_2-equivalent remains a significant challenge.

2. Description/ characteristics of future study	**Exploratory/normative**	Both exploratory and normative (the Blueprints scenario appears to be a desired future)	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	The key factor is cooperation on energy and climate change	
	Number of scenarios	Two	
	Thematic focus	Energy; climate change	 
	Specific issue focus	Global energy futures	
	Integration of environment/ society/economy	Integration between environmental factors and economy (specifically energy systems)	
	Policy targets	Broad policy goals: climate change mitigation, energy security	
	Spatial scale	Global	

Title of future study: Shell energy scenarios to 2050			Descriptive icon
	Temporal scale	2050	
	Publication date/series	Published in 2008	
	Origins/derivation/family	Original: Shell has regularly published scenario studies, but this is not directly linked to any previous ones	
	Research/policy/business	Business	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No, little information on methodology in report	
	Analytical/participative/both	Both	 
	Level of engagement	Expert judgements and stakeholder consultations to produce narratives	
4. Purpose and application	**Objectives of study and target audience**	The stated goal is 'To help think about the future of energy and prepare for, or even shape developments in the global energy system that will emerge in the coming years'	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Used for operational purposes within Shell	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Report with text/graphs/table. A video and a graphics-based presentation are also available on the Shell web site	
	Language	English, no summary	
	Access and cost	Report available on website below	
6. Evaluation	**Any evaluation of its use?**	Information not available	
7. Organisations involved	**Initiator**	Shell	
	Lead partner: developed by whom?	Shell	
8. References and contact information	Shell (2008) *Shell Energy Scenerios to 2050*. Shell International BV. http://www-static.shell.com/static/public/downloads/brochures/corporate_pkg/scenarios/shell_energy_scenarios_2050.pdf		

Title of future study:
World Energy Outlook 2009

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The International Energy Agency publishes its annual World Energy Outlook (WEO) towards the end of each year. Recent versions have presented alternative scenarios for energy futures. This fact sheet focuses on WEO 2009.

WEO-2009 sets out, for key countries and regions (including the United States, Japan, the European Union, Russia, China and India), the energy transformation that each might undertake, sector by sector, if the world were to adopt a 450 ppm trajectory. It also describes the current trends in energy use and emissions in a fully updated Reference Scenario, detailing the implications of current policies and taking into account the global financial and economic crisis.

1.2 Summary of the scenarios

1. Reference Scenario

This scenario shows how global energy markets would evolve if governments make no change to their exisiting policies. It takes account of government policies and measures enacted or adopted by mid-2009. Under this scenario, in the absence of new initiatives to tackle climate change, rising global fossil fuel use increases energy-related CO_2 emissions from 29 gigatonnes (Gt) in 2007 to over 40 Gt in 2030 and contributes to the deterioration of ambient air quality with serious public health and environmental effects. Such a scenario would result, according to IEA analysis, in a concentration of greenhouse gases in the atmosphere of around 1 000 ppm in the long term.

2. 450 Scenario

This scenario analyses measures in the energy sector which might be taken in order to fulfil a coordinated global commitment with the ultimate aim of stabilising the concentration of greenhouse gas-emissions in the atmosphere at 450 ppm CO_2 equivalent. This level of concentration is expected to give rise to a global temperature increase of 2C. The 450 scenario also reflects a plausible set of commitments and policies which could emerge from the climate-change negotiations in the period through to 2020.

The scenario entails USD 10.5 trillion more investment in energy infrastructure and energy-related capital stock globally than in the reference scenario. (USD 4.7 trillion in transport; USD 2.5 trillion in buildings; USD 1.7 trillion in power plants; USD 1.1 trillion in industry; USD 0.4 trillion in biofuel production.) These costs are at least partly offset by economic, health and energy-security benefits.

3. Under the 450 scenario:

- Global energy-related CO_2 emissions peak at 30.9 Gt just before 2020 and decline thereafter to 26.4 Gt in 2030.
- Primary energy demand grows by 20 % between 2007 and 2030, which corresponds to an annual growth rate of 0.8 %. The average emissions intensity of new cars is reduced by more than half, and their oil needs fall. The share of non-fossil fuels in the overall primary energy mix increases from 19 % in 2007 to 32 % in 2030, when CO_2 emissions per unit of GDP are less than half their 2007 level. Fossil fuels nonetheless remain the dominant energy sources in 2030.
- End-use efficiency accounts for more than half the total saving in energy emissions and power-generation accounts for more than two-thirds of the savings.
- By 2030, transport demand for oil is cut by 12 million barrels per day, which equals more than 70 % of oil savings.

Title of future study: World Energy Outlook 2009			Descriptive icons
2. Description/ characteristics of future study	**Exploratory/normative**	One exploratory and one normative scenario	
	Qualitative/quantitative	Focus on quantitative results	
	Axes/factors considered	Policy action (for the 450 scenario)	
	Number of scenarios	Two: Reference scenario and 450 scenario	
	Thematic focus	Energy; climate change	 
	Specific issue focus	Energy security, environment (especially climate change), energy access	
	Integration of environment/ society/economy	Integration of energy futures and environment impacts	
	Policy targets	Quantitative target to stabilise global atmospheric concentration of CO_2 at 450 ppm; qualitative target to improve energy security	
	Spatial scale	Global	
	Temporal scale	2050	
	Publication date/series	Published annually: this fact sheet presents the 2009 volume	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, information on methodology is provided.	
	Analytical/participative/both	Analytical	
	Level of engagement	No information available	
	Additional information on the methodology Main tool for quantitative projections is IEA's World Energy Model		

Title of future study: World Energy Outlook 2009			Descriptive icons
4. Purpose and application	**Objectives of the study and target audience**	The study aims to transform the way energy is used and is a tool for IEA governments to discuss and develop common energy policies. It is also sold commercially. Target audience: 1. Member governments (including G8); 2. Industry; 3. Academics	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Previous editions used for G8 discussions on energy and widely cited in other fora. Details on use of 2009 volume not found	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text (publication), with limited charts and tables; further data presented in an appendix	
	Language	English. Executive summary available in Arabic, Chinese, English, French, Spanish, German, Italian, Japanese, Polish and Russian	
	Access and cost	Can be ordered from IEA website for EUR 150, executive summary available for free on the website	€€
6. Evaluation	**Any evaluation of their use?**	According to an IEA official, there is no formal evaluation, but regular, informal feedback	
7. Organisations involved	**Initiator**	International Energy Agency, Paris	
	Lead partner: developed by whom?	International Energy Agency, Paris	INT. ORG
	Types of other participating organisations: Intergovernmental organisation.		
8. References and contact information	International Energy Agency, World Energy Outlook 2009, 2009, Paris http://www.worldenergyoutlook.org/		

3.2 Wider Europe studies

The wider European region includes all the European and central Asian members of the United Nations Economic Commission for Europe. It thus covers all the countries from western, central and south-eastern Europe to eastern Europe, the Caucasus and central Asia.

All the literature reviews searched for studies at this scale. The reviews identified a total of 10 forward-looking studies for the pan-European region or major components of this geographical area (the full list is provided in the Annex). Few studies cover this region as a whole. Instead, most of the studies in this category cross its sub-regions.

Only one fact sheet was prepared for a study in this category. This study focuses on political futures in Eurasia, which is defined as the countries in the former Soviet Union in the regions of eastern Europe, the Caucasus and central Asia.

Study (and scenario titles where available)	**Organisation**	**Thematic focus**	**Geographical coverage**	**Time horizon**
9. Eurasia 2020: Global Trends 2020 Regional Report • Economic Prosperity and Political Stability • Muddling Through • Decline and Isolation • Central Asian Meltdown	National Intelligence Council, 2004 (http://www.dni.gov/nic/NIC_home.html)	Economy; Global Futures	EECCA	2020

Title of future study:
Eurasia 2020: global trends 2020 regional report

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The study investigates several ways in which major changes could take place in Eurasia (i.e. EECCA countries, with a focus on Russia) in the next 15 years. The study is based in particular on the results of a workshop held in Budapest in 2004. The four scenarios range from a situation of decline and isolation to the creation of a more robust and inclusive globalisation.

1.2 Summary of the scenarios

1. Economic Prosperity and Political Stability

Russia prospers. Russia remains a leading world supplier of natural resources, particularly in the energy field. Russia is able to diversify its economy beyond the extraction of natural resources and into areas of manufacturing and service. There is a more equitable distribution of wealth and a growth in Russia's middle class. Russia experiences a decline in brain drain and becomes a destination for immigrants, particularly from central Asia.

2. Muddling Through

The Russian economy remains dependent upon extraction of natural resources. While this allows for economic growth, the economy does not become diversified. Russia fails to develop efficient and stable institutions of governance. Political power remains highly centralized, competition is highly circumscribed and governmental structures are not transparent. There remains a tremendously inequitable distribution of wealth with a relatively small middle class. Significant elements of oligarchic structures remain intact. Foreign direct investment, outside of the energy sector, remains low and capital flight persists. Labour mobility is limited while brain drain of scientific and technical experts continues.

3. Decline and Isolation

Post-Soviet space becomes united and more isolated from the rest of the world. Russia remains stable but with highly circumscribed democratic possibilities and strong limits on civil society.
The Russian economy stagnates. Natural resource prices fluctuate and might decline, and Russia experiences little economic diversification. Economic and demographic challenges produce tremendous pressure on the economy and income inequality grows.
Integration within the former Soviet space grows significantly. In central Asia, Islamic fundamentalism is on the rise in response to frustrations of the growing young population and failure to create governmental reforms. Some of the central Asian countries, such as Turkmenistan, Tajikistan, and Kyrgyzstan, face potential collapse. A power vacuum is created and the region becomes a battleground between Russia, the United States, Middle Eastern countries and China.

4. Central Asian Meltdown

Tensions in central Asia brought on by authoritarian rule, high population growth and little opportunity for unemployed and disenfranchised youth bring on rising Islamic fundamentalism. Due to US failure in Iraq and Afghanistan and more aggressive support from Middle Eastern regimes, regime collapse occurs in one country and/or an aggressive Islamic state emerges. In response, other countries become more closely integrated with Russia. Russia, with strong American support and European acquiescence, becomes an important front in a worldwide terrorism battle, and US/Russian cooperation in the security sphere deepens, particularly in response to non-traditional warfare.

Title of future study: Eurasia 2020: global trends 2020 regional report			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	The study looks at four key drivers: Economics and Natural Resources; Demography and Health; Social and Ethnic Identity, Federalism and Regionalism; and Science, Technology and the Military	
	Number of scenarios	Four: Economic Prosperity and Political Stability Muddling Through Decline and Isolation Central Asian Meltdown	
	Thematic focus	Economy; Global Futures	 
	Specific issue focus	Economic developments of EECCA countries	
	Integration of environment/ society/economy	Focus on economic and social dimensions	
	Policy targets	No targets or goals specified	
	Spatial scale	Eastern Europe, Caucasus and central Asia	
	Temporal scale	2020	
	Publication date/series	Published in 2004	
	Origins/derivation/family	A preparatory study for Global Trends 2020; NIC subsequently prepared Global Trends 2025, described elsewhere in this Catalogue	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Little information is provided	

Title of future study: Eurasia 2020: global trends 2020 regional report			Descriptive icon
	Analytical/participative/both	Both	 
	Level of engagement	The report is based on a workshop held in Budapest during 2004. Representatives from seven countries	
4. Purpose and application	**Objectives of the study and target audience**	The aim of the study is not specified, however, the NIC's work in general supports the development of US foreign and military policies. The key audience is expected to be US policy makers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Narrative — no maps or charts	
	Language	English	
	Access and cost	Report available for free on the internet at the address indicated below	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	US National Intelligence Council	
	Lead partner: developed by whom?	US National Intelligence Council	
	Types of other participating organisations: No information available		
8. References and contact information	National Intelligence Council (2005), *Eurasia 2020 — Global Trends 2020 Regional Report, 2004* http://www.dni.gov/nic/PDF_GIF_2020_Support/2004_04_25_papers/eurasia_summary.pdf		

3.3 EEA member country studies

The literature reviews identified a total of 132 forward-looking studies that cover EEA member countries (the full list is provided in the Annex). Many of these studies focus on all or part of the European Union.

The main source for these studies is the literature review carried out in 2006 and updated in 2008. This review searched for forward-looking studies in English prepared by international organisations, European institutions, national governments, think tanks and NGOs. It also included some studies prepared by business sources. The review did not include academic studies or studies published in languages other than English.

In addition, separate literature reviews covered forward-looking studies and research concerning ecosystems and climate change adaptation. Several studies identified in these reviews focused on the EU as their geographical scale, and thus are included in this section of the Catalogue. In addition, several studies at national and sub-national levels are included: for example, the BioScene study looked at selected mountain regions in six EEA member countries.

This section also includes scenario studies of Bulgaria, Romania and Turkey, countries that were covered in the literature review of south-eastern Europe. That review had a slightly wider scope, as experts in the region were engaged to search for future-oriented studies in national languages. Moreover, academic studies in English were also covered in the review.

This section presents the 11 fact sheets for studies identified as potentially important for European assessments of the environment.

The following studies are presented in this section:

Study (and scenario titles where available)		Organisation	Thematic focus	Geographical coverage	Time horizon
10.	**ALARM: Assessing Large Scale Risks for Biodiversity With Tested Methods** • Three core scenarios • Three 'shock' scenarios	UFZ Helmholtzzentrum für Umweltforschung, On-going	Biodiversity	EU-27	2020, 2050, 2080, 2100
11.	**Application of a Participatory Foresight Methodology at River Basin Scale in Jordan and Turkey** • Business as usual • Potential sustainable scenario • Potential unsustainable scenario	Ker Rault et al., 2006	Water	Turkey	2025
12.	**Bioscene — Scenarios for Reconciling Biodiversity Conservation With Declining Agricultural Use in the Mountains of Europe** • Business as usual • Liberalisation • Managed Change for Biodiversity	Sheate and Mitchley, 2005 Imperial College of Science, Technology and Medicine	Biodiversity	Mountain areas in Norway, the United Kingdom, France, Slovakia, Switzerland and Greece	2030
13.	**EEA Outlook** • Baseline scenario with variants for specific issues	European Environment Agency, 2005	Environment & Sustainability	EEA member countries	2100
14.	**EEA Prelude — Land Use Scenarios for Europe** • Great Escape • Evolved Society • Clustered Networks • Lettuce Surprise U. • Big Crisis	EEA, 2007	Biodiversity; Land use	EEA member countries	2035

Study (and scenario titles where available)	Organisation	Thematic focus	Geographical coverage	Time horizon
15. European Energy and Transport: Trends to 2030 — European Energy and Transport: Scenarios on Key Drivers • Baseline scenario • Energy price scenarios • GDP variation scenarios • Energy efficiency and renewables scenarios • Nuclear scenarios • Transport scenarios • Policy option scenarios	Mantzos et al., 2003 National Technical University of Athens	Energy; Transport	EU-27 + Norway + Switzerland + Turkey	2030
16. Getting in the Right Lane for 2050 • Vision for Europe	Netherlands Environmental Assessment Agency (PBL), 2009	Environment and sustainability	EU	2050
17. Growth and Immigration Scenarios for Turkey and the EU • Four scenarios	Erzan, Kuzubas and Yildiz, 2004 (Centre for European Policy Studies, www.ceps.eu/)	Demography	Turkey and the EU	2030
18. Intelligent Infrastructure Futures: The Scenarios — Towards 2055 • Perpetual motion • Urban colonies • Tribal trading • Good intentions	Curry et al., 2006 (UK Government: Foresight Prog., Office of Science and Technology)	Transport; Technology & Innovation	The United Kingdom	2055
19. Trends In Vehicle and Fuel Technologies: Scenarios for Future Trends • Baseline scenario • Oil price scenarios • Carbon tax scenarios • Subsidies for low-emission vehicles • Zero emissions in urban areas • Industry focus • No new technologies	Christidis, Hidalgo and Soria, 2003 (Institute for Prospective Technological Studies — www.jrc.es)	Transport	EU-15 + candidate countries + North America, Japan, China and India	2020
20. VISIONS: Integrated Visions for a Sustainable Europe • Living on the Edge • Europe in Transition • Shadows of Europe Ltd	Rotmans and. van Asselt, 2001 (International Centre for Integrated Studies — www.icis.unimaas.nl)	Environment & sustainability	North-West UK (NW-UK), the Green Heart (the Netherlands), Venice (Italy)	2050

Title of future study:

ALARM — assessing large scale risks for biodiversity with tested methods

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The 2004–2009 ALARM project led by the Helmholtzzentrum für Umweltforschung (UFZ) developed and tested methods for the assessment of large-scale environmental risks. Study research focused on the assessment and forecast of changes in biodiversity and in the structure, function, and dynamics of ecosystems. This related to ecosystem services and included the relationship between society, economy and biodiversity. In particular, risks arising from climate change, environmental chemicals, biological invasions and pollinator loss in the context of current and future European land use patterns were assessed: thus, ALARM looked at combined impacts and their consequences.

The study developed six scenarios. Three core scenarios were developed covering a broad range of social, economic, political and geobiosphere parameters. These scenarios consist of a narrative, of which several elements are quantitatively illustrated by different, partly integrated models. Three additional hazard-driven shock scenarios were developed as deviations from the core scenarios, combining a narrative describing the disturbance event with its long-term and large-scale impacts.

1.2 Summary of the scenarios

Core scenarios:

1. GRAS (Growth Applied Strategy)

Under this scenario, deregulation and free trade lead to the reduction or abolition of planning requirements across Europe, urban sprawl and diffuse peri-urbanisation; agriculture is only maintained in optimal locations due to abolition of subsidies; current protected areas are preserved but the protection of the NATURA 2000 network is not enforced.

2. BAMBU (Business-As-Might-Be-Usual)

Under this scenario, guidelines for planning policy and compact city development are enforced; agriculture is maintained in optimal locations and at appropriate levels in traditional landscapes; current afforestation policy is maintained; current protected areas are preserved and protection of the NATURA 2000 network is enforced.

3. SEDG (Sustainable European Development Goal)

Integrated policies lead to the extensification of agriculture and organic farming; strict planning policies favour compact settlement to reduce travel needs; current protected areas are preserved and the NATURA 2000 network is enforced.

Shock scenarios:

4. GRAS-CUT (GRowth Applied Strategy perturbed by a Climate shock: Cooling Under Thermohaline circulation collapse)

This scenario is based on the GRAS scenario and introduces a collapse of the Atlantic ocean water circulation (including the Gulf Stream); and the resulting relative cooling of Europe.

5. BAMBUSEL

This scenario envisages an economic shock (peak oil in 2010). One of the expected results is massive pressure on agricultural and forest land, leading to significant losses of biodiversity.

6. BAMBU-CANE

This scenario envisages a societal shock (a pandemic). The pandemic brings either an economic transformation with some sectors losing and others winning (e.g. health care, pharmaceuticals), with an overall reduction of GDP below 10 % and an early rebound — or a total collapse of the economy.

Title of future study: ALARM — assessing large scale risks for biodiversity with tested methods			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Both Exploratory: e.g. GRAS scenario Anticipatory/normative: SEDG Scenario (sustainability)	
	Qualitative/quantitative	Qualitative and Quantitative	
	Axes/factors considered	Three levels of drivers are distinguished, from general trends (e.g. ageing society and population) via policy orientations (neo-liberal, pragmatic muddling through, sustainability) to policies (transport, infrastructure, agriculture, economic, etc.)	
	Number of scenarios	Three core scenarios 1. GRAS 2. BAMBU 3. SEDG And three 'shock' scenarios: 4. GRAS-CUT 5. BAMBUSEL 6. BAMBU-CANE	
	Thematic focus	Biodiversity	
	Specific issue focus	Biodiversity (specifically, risks to biodiversity from climate change, land use, chemicals, invasive species and pollinator loss, and their interaction)	
	Integration of environment/ society/economy	Yes, the study linked society, economy and biodiversity	
	Policy targets	Broad policy goal of biodiversity protection	
	Spatial scale	EU27 focus (though work brings in global climate and econometric models)	
	Temporal scale	2020, 2050, 2080, 2100	
	Publication date/series	Started 2004, end 2009	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, methodology available	

Title of future study: ALARM — assessing large scale risks for biodiversity with tested methods			Descriptive icon
	Analytical/participative/both	Both	 
	Level of engagement	Consultation with the Consultative Forum, which included scientists, decision-makers, consumer organisations, environmental NGOs and trade unions	
	Additional information on the methodology The research combines global climate and econometric models with European land use and smaller scale biological models. The study in fact used a series of quantitative models: for land use, MOLLUSC; IPCC models for climate; GINFORS for econometric modelling; as well as others for biodiversity risk and nitrogen deposition. Econometric models work with annual data, seasonal variations are part of the land use models, and the climate models have even finer tuning. The econometric model is calculated up to 2020 and extrapolated to 2050, the land use model runs to 2080 and the climate models to 2100		
4. Purpose and application	**Objectives of the study and target audience**	No information available	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Risk Assessment Toolkit (maps), publications not available on website	
	Language	English, summaries available in 19 languages	
	Access and cost	Results available on the website for free	
6. Evaluation	**Any evaluation of their use?**	Information not available	
7. Organisations involved	**Initiator**	Funded by European Commission, DG RES, FP6 IP	
	Lead partner: developed by whom?	UFZ Helmholtzzentrum für Umweltforschung	
	Types of other participating organisations: Research institutes and universities across Europe as well as in other parts of the world		
8. References and contact information	**Project web site: http://www.alarmproject.net/alarm/** Project contact person: Josef Settele ++49 (0)345-558-0 Josef.settele@ufz.de Scenarios contact person: Joachim Spangenberg +49 (0)221-2168-95 Joachim.Spangenberg@ufz.de Scenarios described in: Joachim H. Spangenberg, 'Integrated scenarios for assessing biodiversity risks'; Wiley Inter-science journal, Volume 15 Issue 6, Pages 343 – 356, 15 March 2007.		

Title of future study:

Application of a participatory foresight methodology at river basin scale in Jordan and Turkey

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The paper describes a methodology developed for building water scenarios based on local stakeholder participation and presents a summary of three standard scenarios for two case study areas in Jordan and Turkey.

A short description of the three scenarios for Turkey is presented below.

1.2 Summary of the scenarios

1. Business as usual (BAU)

The overall picture for 2025 is pessimistic because population increase tied to the development of tourism leads to rising water demand. Changing farming practices are not expected to affect water resources.

2. Potential sustainable scenario (PSS)

The overall picture is positive: migration slows and ends as tourism infrastructure development is managed and there is a shift to organic agriculture.

3. Potential unsustainable scenario (PUS)

The overall picture is very negative due to an uncontrolled growth in population and tourism construction, including on agricultural land.

Overall, the BAU scenario presents a deterioration of current water resources that might be tempered through innovation and environmental consciousness-raising. The PSS scenario highlights the necessity for significant change in attitudes to coordinate economic, political & environmental dimensions. The PUS scenario depicts a chaotic social and economic situation, where competition for the use of water resources will be exacerbated, leading to risks to public health and social segregation.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	One axis — sustainability — based on 4 driving forces: population, agriculture, tourism & environment	
	Number of scenarios	Three: 1. Business as usual 2. Potential sustainable scenario 3. Potential unsustainable scenario	
	Thematic focus	Water	
	Specific issue focus	Water management	
	Integration of environment/ society/economy	Integration of environment/ society/economy from a river-basin perspective	

Title of future study: Application of a participatory foresight methodology at river basin scale in Jordan and Turkey			Descriptive icon
	Policy targets	Broad policy goal of sustainable water management	
	Spatial scale	River basin scale — Jordan and Turkey (focus here is on the Turkey scenarios)	
	Temporal scale	2025	
	Publication date/series	Presented in 2006	
	Origins/derivation/family	Scenarios were developed from stakeholder discussions during Water Vision workshops held in Jordan and Turkey	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	No information found	
	Analytical/participative/both	Use of participatory foresight approach (combination of traditional foresight & stakeholder participation)	
	Level of engagement	Workshops with stakeholders in each country	
	The study used a two-stage process: a two-day workshop held in each country with discussions and output focused on the three initial scenarios, and a post-workshop analysis to build coherent scenarios based on the information presented by the stakeholders. Scenarios are thus based on a detailed construction of the vision stakeholders have for 2025		
4. Purpose and application	**Objectives of the study and target audience**	The objective of the study is to inform policymakers about water demand for population and economic growth, based on the views and opinions of local stakeholders	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Academic article using: simple language, chart illustrating the development stages of the construction of participative water scenarios, tables summarizing the various scenarios for Jordan and Turkey	
	Language	Article in English only	
	Access and cost	No results accessible on the internet	
6. Evaluation	**Any evaluation of use?**	No information available	

Title of future study: Application of a participatory foresight methodology at river basin scale in Jordan and Turkey			**Descriptive icon**
7. Organisations involved	**Initiator**	No information available	
	Lead partner: developed by whom?	• Department of Agricultural Economics and Agribusiness, Faculty of Agriculture, University of Jordan • School of Water Sciences, Cranfield University, the United Kingdom. • Water division, RMD Unit, Brgm, Montpellier • Hacettepe University, Ankara, Turkey • State Hydraulic Works, District XXI, Ayolin, Turkey	
	Types of other participating organisations: Universities and research institutes in Europe and in the study countries.		
8. References and contact information	Ker Rault, P., Bouzit, M., Jeffrey, P., Salman, A., Al-Karablieh, E., Attila, O., and Yüzereroðlu, S. (2006). *Application of a participatory foresight methodology at river basin scale in Jordan and Turkey.* IAH conference on Integrated Water Resources Management and Challenges of the Sustainable Development. Marrakech, 23–25 May, 2006		

Title of future study:

Bioscene — scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of Europe

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The BioScene Study, published in 2005 by Imperial College London and its partners, uses a case-study approach to investigate the future of mountain areas across six European countries: France (Causse Méjan), Norway (East Jutenheimen), and Switzerland (Mid Grisons), UK/Scotland (Cairngorms), Slovakia (Bukovské vrchy mountains), Greece (Pindos mountains). It develops three main scenarios concerning the future of agriculture and ecosystems and the links between them: these scenarios are applied to all six case study regions.

1.2 Summary of the scenarios

1. Business as usual

Under this scenario, current trends continue, along with the current system of support payments for agriculture. The scenario has certain positive biodiversity consequences that could be enhanced by incorporating management interventions to enhance conservation. There is some potential for environmentally favourable business creation, such as organic agriculture, quality niche products and tourism; however, there was little belief amongst stakeholders that this could fully replace current agriculture.

2. Liberalisation

In landscape terms liberalisation is not far from a wilding scenario, and could offer opportunities for large-scale restoration and conservation projects, including reintroduction of regionally or nationally extinct ecological keystone species (e.g. large predators, wolves and bears) to the less intensively managed and wilder landscapes of a liberalised future.

Stakeholders in the case study areas rejected the idea of a policy choice to support rewilding but remove financial support for human livelihoods. While there may be new opportunities for the regional economy from rewilding, e.g. hunting and tourism, most stakeholders believed that cultural landscapes are much more attractive for tourists than wilderness.

The liberalisation scenario is, in any case, an unrealistic scenario and support for mountain areas is more likely to be reinforced or reconfigured than withdrawn in the foreseeable future.

3. Managed Change for Biodiversity

Under this scenario, a system of conservation payments would seek to reconcile biodiversity and rural development through the implementation of a range of regionally tailored incentive measures.

The scenario was generally favourably viewed by stakeholders but the potential livelihood and governance concerns of this balance between bottom-up and top-down approaches would need to be addressed e.g. through inclusion of a very broad range of stakeholders and participatory dialogue, conflict resolution and consensus building to define appropriate and regionally sensitive biodiversity plans.

The study notes that precise biodiversity consequences of any future scenario depends on the way in which biodiversity is conceptualised (e.g. species, habitats or ecosystem processes) and how biodiversity priorities and objectives are defined, e.g. different emphasis given to emblematic species, heritage species, culturally valuable species or territorial responsibility within a global setting.

Title of future study: Bioscene — scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of Europe			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Both qualitative and quantitative	
	Axes/factors considered	Key factors include: development of the agricultural sector; funding and actions for nature conservation	
	Number of scenarios	Three: 1. Business as usual 2. Liberalisation 3. Marked change for biodiversity	
	Thematic focus	Biodiversity	
	Specific issue focus	Biodiversity in mountain agricultural landscapes	
	Integration of environment/ society/economy	Yes, integration of agricultural policy, rural development and biodiversity	
	Policy targets	Broad policy goal of integrated regional management to reconcile biodiversity with human activities	
	Spatial scale	EEA countries Case studies in 6 countries: France (Causse Méjan), Norway (East Jutenheimen), and Switzerland (Mid Grisons), Scotland (Cairngorms), Slovakia (Bukovské vrchy mountains), Greece (Pindos mountains). The size of individual studied areas varied, typical size was several hundreds of km^2. The target resolution for landscape analysis was 1:25 000, some partners worked in more detailed scale (up to 1:5 000)	
	Temporal scale	25 years — scenarios to year 2030	
	Publication date/series	Finished in 2005	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, information available	
	Analytical/participative/both	Both	 

Title of future study: Bioscene — scenarios for reconciling biodiversity conservation with declining agricultural use in the mountains of Europe			**Descriptive icon**
	Level of engagement	In each study area, three Stakeholder Panels assessed past changes, discussed future trends and evaluated the scenarios in a sustainability assessment process	
	Additional information on the methodology Ecological modelling on levels of landscape, habitats and species using several statistical and modelling methods (logistical regression, classification and regression trees, ecological niche factor analysis), narratives of socio-economic development, sustainability strategy development. Input parameters: Land cover maps, habitat and species distribution, socio-economic analysis, maps of environmental parameters (relief, geology, geomorphology, climate etc.)		
4. Purpose and application	**Objectives of the study and the target audience**	The study provides recommendations for reconciling biodiversity conservation with social and economic activities through integrated rural development strategies. In addition, the project seeks to point a way for CAP reform that allows European mountain areas move from being considered 'less-favoured' agricultural regions to 'highly-valued' environmental landscapes. The study seeks to inform European and regional policy makers	
	Use of the study: • By whom? • For what end? (Objectives) • Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Report includes maps, charts, photomontages, causal chains, matrices and narratives	
	Language	English	
	Access and cost	Reports available via web site	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator: commissioned/funded by whom?**	Framework Programme 5 project — European Commission	
	Lead partner: developed by whom?	Imperial College of Science, Technology and Medicine, the United Kingdom	
	Types of other participating organisations A consortium of universities and institutes in the case study countries		
8. References and contact information	BIOSCENE Final Report to the European Commission and further reports and articles available at: http://www3.imperial.ac.uk/people/w.sheate/research Mr William Sheate w.sheate@imperial.ac.uk Dr. Jonathan Mitchley +44 (0)118 378 4556 j.mitchley@reading.ac.uk		

Title of future study:
EEA outlook

Descriptive icon

1. Summary

1.1 Summary of forward-looking study

The European Environment Outlook, published in 2005, reviews socio-economic trends and environmental policies in the EU, together with the likelihood of meeting policy targets across Europe. It starts from the current state of the environment and then proceeds using a set of baseline assumptions about how environmental pressures will change given expected socio-economic changes and policies. Systemic effects are analysed using models.

1.2 Summary of the scenarios

The report first considers Europe's environmental outlook under baseline assumptions, including likely policy developments and success in their implementation. Key socio-economic trends and policies identified are: an ageing population and more households per capita; meeting greenhouse gas emission targets; lower air pollution and impacts on human health and ecosystems; reduced water use; shift from point to diffuse sources of water pollution; EU enlargement; the EU 6th Environmental Action Plan, its environmental directives, sustainable development policy and the Lisbon agenda.

The report concludes that policy initiatives are on course to deal with many key issues, but climate change, diffuse pollution sources, and addressing the environmental impacts of consumption and addressing the underlying drivers of environmental change remain major challenges. Where problems are anticipated the report considers plausible alternative paths with respect to those issues. Alternatives are investigated using models for five sectors: energy, transport and climate change; air pollution; agriculture; waste and material flows; and water stress.

Key scenarios are briefly described below:

- Extended CAP reform: This scenario assesses the impact of extended CAP reform (liberalisation in the context of WTO negotiations) on selected environmental indicators.
- Best practice scenario for fertiliser handling: This scenario assesses the effect of significant improvements in management practices for handling fertiliser, depicting a more environmentally-friendly prospect for the European agriculture sector.
- Stronger Euro: This scenario assesses the possible effects of a stronger Euro of 0.75 EUR/USD (in the baseline scenario it is fixed at 0.9 EUR/USD from 2001 onwards), close to levels observed during 2004. The overall impact on cropping patterns, herd sizes and environmental pressures is estimated to be rather small in the short and medium terms.
- Low GDP growth: This scenario envisages a lower economic growth in Europe: average annual growth rates of 1.6 % to 3.2 % over 2000–2030 for different regions in Europe. (In the baseline scenario, the growth assumptions range from 2.3 % (EU-15) to 3.5 %). The main change relates to CO_2 emissions, which are estimated to be 5.4 % lower than in the baseline projection.
- Accelerated renewables: Under this scenario, the targets for the share of renewable energy in total energy consumption are 12 % in 2010, 16 % in 2020 and 20 % in 2030. Subsidies are introduced to achieve 27 % electricity generation from renewables in 2020 and 35 % in 2030.

This study provides the following key messages:

- Changes in Europe's demographic patterns are expected to increase some environmental pressures;
- the short term European greenhouse gas emission targets are expected to be met, if all additional policies and measures currently planned are implemented whereas the long-term targets set to prevent harmful climate change are not expected to be met;
- there is potential for a massive reduction in EU greenhouse gas emissions in the long term (to 40 % below 1990 levels in the next 30 years);
- air pollution and its impacts on health and ecosystems are expected to significantly decline;
- water use is expected to decrease in most of Europe, with many Mediterranean river basins continuing to face water stress;
- urban waste water treatment is expected to lead to a significant reduction in the overall discharge of nutrients from point sources.

Title of future study: EEA outlook			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory in that the core scenario develops on baseline data and trends. Normative in identifying problems with the baseline scenario and proposing/ analysing alternative policies	
	Qualitative/quantitative	Quantitative, using models and a systems analysis approach	
	Axes/factors considered	Main thrust is projection of a baseline scenario. Models then investigate variants on this, based on alternative assumptions regarding GHG emissions, GDP growth, technological paths, policy initiatives and consumption patterns	
	Number of scenarios	One baseline scenario with variants regarding specific issues	
	Thematic focus	Environment and Sustainability	
	Specific issue focus	Climate change; air quality; water stress; water quality; soil quality and degradation; biodiversity	
	Integration of environment/ society/economy	Socio-economic trends are integrated in the analysis	
	Policy targets	The EEA Outlook addresses several quantitative targets, such as Europe's Kyoto Protocol requirements, as well as broad policy goals stated in the EU's 6th Environmental Action Programme	
	Spatial scale	EEA countries	
	Temporal scale	2005 to the 2020s (and to 2100 for climate change)	
	Publication date/series	Published in 2005	
	Origins/derivation/family	Complement to the EEA's State of the Environment report. Assumptions about drivers are based on those used for DG TREN's baseline projections for 'European Energy and Transport Trends to 2030'	
	Research/policy/business	Policy	

Title of future study: EEA outlook			Descriptive icon
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, methodological information is provided	
	Analytical/participative/both	No information available	
	Level of engagement	An Advisory Group consisting of academics and representatives of international organisations such as FAO, IAEA and OECD provided input	
	Additional information on the methodology The main outlook report draws on four themes, each of which uses one or more models to consider 'business as usual' environmental effects and to explore alternative policy scenarios: • Climate change and air pollution outlooks. Six models used to anticipate GHG emissions and environmental impacts. • Agriculture outlooks. CAPSIM model used to anticipate land use patterns, nutrient balances and GHG emissions. • Water stress and water quality outlooks. Models for water resources and sewage treatment nutrient loads. • Waste and material flows outlooks. Macro-economic model used to anticipate waste and material flows		
4. Purpose and application	**Objectives of the study and target audience**	Intended for 'decision-makers, stakeholders and the public' to inform European policy making	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Information not available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text, graphs, tables	
	Language	Available in English	
	Access and cost	Available for free on the EEA website	
6. Evaluation	**Any evaluation of its use?**	Information not available	
7. Organisations involved	**Initiator**	European Environment Agency	
	Lead partner: developed by whom?	European Environment Agency	
	Types of other participating organisations: Six European research institutes; international organisations		
8. References and contact information	European Environment Agency (2005) European Environmental Outlook. EEA Report No. 4/2005. Office for Official Publications of the European Communities, 2005. http://www.eea.europa.eu/publications/state_of_environment_report_2005_1 http://www.eea.europa.eu/publications/eea_report_2005_4		

Title of future study:

EEA Prelude: land use scenarios for Europe

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

Prelude, released by EEA in 2007, explores 'plausible developments' for land use change in Europe and their environmental impacts, as a means to 'stimulate strategic discussion'.Instead of making predictions, Prelude tackles the vast uncertainties of the future by analysing a range of plausible developments. As a result, five contrasting futures are depicted in a set of coherent scenarios. Each scenario implies specific land-use changes and impacts on the environment, which have been analysed and quantified by landuse experts using simulation models.

The objective is to provide a background against which the debate on land use and our environmental future can take place.

1.2 Summary of the scenarios

The study presents five scenarios.

1. Great Escape

Globalisation, technological change and agricultural optimisation (re. efficiency and profits) results in agricultural intensification and land abandonment. Social tension is high, between the gated rural wealthy and urban ghettos. Environmental impacts are negative due to loss of nature reserves and extensive farmland, despite some soil and water quality gains where land is abandoned.

2. Evolved Society

Climate change and energy security prompt increased environmental concern and a policy drive for renewable energy and rural revival. People and intensive agriculture move out of flood plains. High tech organic farming increases and there is a small overall agricultural de-intensification, but overall land use changes are small.

3. Clustered Networks

An ageing population prompts a drive to use spatial planning for service oriented cities with green belts and agricultural optimisation. Leading to land abandonment and loss of high nature value farmland, but more nature reserves.

4. Lettuce Surprise U

A food security crisis prompts technological innovation, environmental concern and social cohesion in a push for decentralised organic food production. New crop varieties with high yields and low inputs are used in small scale high-tech production. Environmental impacts are strongly positive re. biodiversity, soil and water quality.

5. Big Crisis

Environmental disasters prompt a 'big government' response pushing for regional development, public transport and sustainable development. Land use changes are modest, with some agricultural extensification.

Title of future study: EEA Prelude: land use scenarios for Europe			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Narrative-led, but with quantitative modelling of land use changes and their spatial distribution	
	Axes/factors considered	Two main axes: 1. Regional/national scale governance versus centralised/ EU level governance 2. Regional/national markets drive economic development versus global markets Unexpected events also play a key role in scenario development	
	Number of scenarios	Five	
	Thematic focus	Biodiversity; Land use	 
	Specific issue focus	Links among socio-economic developments, agriculture, land use and the nature in Europe	
	Integration of environment/ society/economy	Scenarios integrate all three elements	
	Policy targets	No targets or goals specified	
	Spatial scale	Focus on EU: maps produced for the EU-25, with regional mapping exercises focused on Estonia, the Netherlands and northern Italy	
	Temporal scale	2005–2035	
	Publication date/series	Finished in 2007	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Yes, methodological information is provided.	
	Analytical/participative/both	Both	

Title of future study: EEA Prelude: land use scenarios for Europe			Descriptive icon
	Level of engagement	In the process of scenario development, a stakeholder panel discussed key uncertainties, driving forces and environmental effects to build scenario narratives. Narrative development, modelling and stakeholder discussions were used iteratively to produce the final scenario set	
	Additional information on the methodology The driving forces identified were used to suggest overall changes in land use in six classes: urban, grassland, forest, crop land, crop land for biofuels, abandoned land. Current land use based on satellite data provided a starting point frwom which simulation models were used to spatially allocate the competing land uses under each scenario		
4. Purpose and application	**Objectives of the study and target audience**	Aimed at 'anyone interested in Europe's landscape', particularly policy makers and interest groups' concerned with agriculture, rural development, spatial planning and climate change. Provides a context against which the potential of policy initiatives can be judged	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Land use maps illustrate how the scenarios might affect landscapes and associated environmental impacts are presented in an interactive computerised interface that allows the user to switch between scenarios, documentation on the project and a library of maps and data. Each scenario is presented for a broad public through computer animation (available on the web)	
	Language	English	
	Access and cost	All the information about the project and background available on the EEA website for free	
6. Evaluation	**Any evaluation of Its use?**	No information available	
7. Organisations involved	**Initiator**	European Environmental Agency	
	Lead partner: developed by whom?	European Environmental Agency	
	Types of other participating organisations: Experts from international and national government bodies, trade associations, NGOs, research institutes and other sectors participated in workshops for preparation of the study		
8. References and contact information	Main information: http://www.eea.europa.eu/multimedia/interactive/prelude-scenarios/prelude Presentations at http://scenarios.ewindows.eu.org/reports/fol077184		

Title of future study:

European energy and transport: trends to 2030 — European energy and transport: scenarios on key drivers

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The 'Trends to 2030' study explores possible energy and transport developments between early 2000 and 2030, with the aim of having an up-to-date view on long term European energy and transport developments, particularly in the context of recent and future EU enlargement. These studies, developed for the European Commission by the National Technical University of Athens and published in 2004, are in two volumes. The first presents projections of EU energy, transport and economy to 2030 based on quantitative modelling. The second volume presents a series of alternative scenarios developed using the models. The study was updated in 2007.

1.2 Summary of the scenarios

1. Baseline scenario

Continuation of existing trends and current policies and those in the process of being implemented by the end of 2001. World oil prices are projected at USD 20.10 /barrel in 2010 to increase smoothly afterwards to reach 27.90 USD in 2030. World GDP grows at a steady 1.9 % a year, and EU-25 GDP at 2.3 % As a result: energy demand is expected to continue to grow, though at significantly lower rates (0.6 %/year). Energy intensity will improve at 1.7 % pa in 2000-2030. CO_2 emissions will grow to exceed the 1990 level by 14.2 % in 2030. Renewables will provide 9 % of EU energy in 2030.

2. Energy price scenarios

Four scenarios: high oil and gas prices (due to fast world GDP growth); low gas availability for Europe; delinking of oil and gas (due to abundant world gas supplies); and soaring oil and gas prices. It should be noted that the highest oil prices envisaged are USD50/barrel reached in 2030 in one scenario.

3. GDP variation scenarios

The low-growth scenario sees EU-25 GDP growing at 2.0 % pa. The high-growth scenario sees 3.0 % to 2010, followed by a slowing to 2.5 % in 2020–2030. Changes in CO_2 emissions are assessed.

4. Energy efficiency and renewables scenarios

The *High Efficiency* scenario assumes implementation of the EU Action Plan for Energy Efficiency.

EU-25 primary energy needs are projected to be below Baseline levels by 5.6 % in 2010, 10.0 % in 2020 and 13.6 % in 2030. *The '12 % renewables in 2010' case* assumes that additional incentives are provided both to energy consumers and energy producers. *Energy Efficiency + Renewables* explores the aggregate effect of the two cases above on the evolution of the EU-25 energy system.

5. Nuclear scenarios

Five scenarios are reviewed, from complete phase-out to new technologies.

6. Transport scenarios

In the first scenario, rail passenger and freight levels (along with public road transit) remain constant at 1998 levels through 2010, rather than declining as per the Baseline scenario. In the second, these modes are used more efficiently. Initially, both scenarios see a decrease in automobile use vis-à-vis the baseline scenario, though by 2030 the air sector also sees an important decrease.

7. Policy Options

Three scenarios are tested. 'Energy Policy Options' sees a promotion of renewables, nuclear and energy efficiency. 'Extended Policy Options' includes renewables, energy efficiency, transport policies as well as extended CO_2 emissions trading or energy taxation. 'Full Policy Options' includes all.

8. CO_2 Options

These scenarios test the impacts of climate change policies on the energy sector. The first scenario, 'Kyoto forever', sees a prolongation of Kyoto targets to 2030. The remaining three scenarios see deeper CO_2 reductions.

Title of future study: European energy and transport: trends to 2030 — European energy and transport: scenarios on key drivers			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	The key factors that determine the scenarios include the following: • Energy prices • Economic development • Energy efficiency and renewable energy policies • Nuclear enegy • Transport • Combined policy actions • Climate change targets	
	Number of scenarios	Eight sets of scenarios are presented: 1. Baseline scenario 2. Energy price scenarios 3. GDP variation scenarios 4. Energy efficiency and renewables scenarios. 5. Nuclear scenarios 6. Transport scenarios 7. Policy Options 8. CO_2 Options	
	Thematic focus	Transport and energy	 
	Specific issue focus	Energy; climate change	
	Integration of environment/ society/economy	The models integrate developments concerning energy, transport, economy, environment	
	Policy targets	A few scenarios explore quantitative policy targets, e.g. related to CO_2 emissions reduction	
	Spatial scale	EU-25 + then candidate countries (Romania, Bulgaria, Turkey) and European Economic Area (Norway and Switzerland)	
	Temporal scale	2030	
	Publication date/series	Published in 2004; this study was updated in 2007	
	Origins/derivation/family	No further information available	
	Research/policy/business	Research and policy	

Title of future study: European energy and transport: trends to 2030 — European energy and transport: scenarios on key drivers			**Descriptive icon**
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Report provides some information, including main assumptions	
	Analytical/participative/both	No information available	
	Level of engagement	No information available	
	Additional information on the methodology Baseline scenario was developed mainly using PRIMES model, a partial equilibrium model for the EU energy system based on EUROSTAT and other data. Other models were integrated into the analysis, such as the POLES model, a global sectoral model of the world energy system		
4. Purpose and application	**Objectives of the study and target audience**	According to the Preface, this volume continues the work of EU green and white papers on energy policy, looking at long-term projections in particular in the context of EU enlargement. The target audience includes European institutions, Member State governments and other stakeholders in EU energy and transport policy	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information on the actual use of the study	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text (publication), with charts and tables; further data presented in an appendix	
	Language	English	
	Access and cost	Report available on the European Commission website for free	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	European Commission, DG Energy and transport (the European Commission published the study and for this reason is attributed to this organisation rather than the contractor)	
	Lead partner: developed by whom?	National Technical University of Athens, Greece	
	Types of other participating organisations: Universities; research centres; consultancies		
8. References and contact information	Mantzos L., Capros P. and M. Zeka-Paschou. 2004. *European Energy and Transport Trends to 2030 — Scenario on key drivers. European Commission* — Directorate General for Energy and Transport, Office for Official Publications of the European Communities, Luxembourg. http://ec.europa.eu/dgs/energy_transport/figures/trends_2030/index_en.htm http://ec.europa.eu/dgs/energy_transport/figures/scenarios/doc/2005_flyer_scenarios_on_key_drivers.pdf Prof. P. Capros, Dr. L. Mantzos, V. Papandreou, N. Tasios, European Energy and transport: trends to 2030 — update 2007, European Commission DG Tren and the National Technical University of Athens, 2007.		

Title of future study:
Getting in the right lane for 2050

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

Getting in the right lane for 2050, a study published by the Netherlands Environmental Assessment Agency in 2009, identifies key policy junctions at which the EU will soon face strategic choices regarding long-term environment sustainability issues. The study examines the EU of today, from a global perspective and looks at a long-term vision of the world of 2050. It identifies key decisions for today on global land and water resources, and low-carbon energy systems, including transport.

1.2 Summary of the scenarios

The study's 'Vision for 2050' encompasses the goals of: producing food for a global population of nine billion while minimising biodiversity loss; mitigating climate change while enhancing energy security for the EU; and finding practical and workable solutions for an EU transport system that is low carbon. Specifically, the vision includes a power grid that allows citizens to become electricity producers and helps ensure a dependable supply of electricity.

In terms of land resources, food and biodiversity, the scenario envisages that in 2050, the EU produces the same quantity and quality of agricultural products as today, but in more diverse landscapes that host more biodiversity. Crop yields have increased sustainably, worldwide, and human diets contain less animal products, making them also healthier. Furthermore, the EU has reduced its footprint — regarding land, water and energy use — on other parts of the world.

In terms of energy and climate change, the scenario envisages an 80 % reduction on 1990 levels in energy-related carbon dioxide emissions within the EU. A low-carbon energy system implies a considerable reduction in fossil energy use and an increase in security of energy supply through diversification of energy sources. This vision outlines the following ways to achieve this: non-carbon and energy-efficient end-use; centralised use of fossil energy in large-scale power generation; small-scale energy production by end-users; a power grid that facilitates diversity; diversified energy sources to increase security of supply.

Key policy actions for this path include a rapid increase in the share of electricity particularly in passenger transport and buildings, carbon taxes leading to a rapid increase in energy efficiency and an 80 % reduction in carbon dioxide emissions in the EU. The transport sector itself is assumed to reduce emissions by 80 %, shifting towards carbon neutral systems for road passengers and biofuels for heavy transport modes. In many cases, measures for reducing emissions will also contribute to improving air quality.

2. Description/ characteristics of future study	**Exploratory/normative**	Normative. Backcasts were made along the pathways from the 2050 vision to the present, with the opportunities and challenges on the way	
	Qualitative/quantitative	Quantative and qualitative	
	Axes/factors considered	Developing sustainable use of global resources in the areas of land-use, energy and mobility	
	Number of scenarios	One: A vision for Europe for 2050	
	Thematic focus	Environment and sustainability	
	Specific issue focus	A series of issues, including: land use, energy, climate change, transport	
	Integration of environment/ society/economy	Close integration of the three pillars	

Title of future study: Getting in the right lane for 2050			Descriptive icon
	Policy targets	Broad policy goal of addressing global challenges: e.g. providing food for nine billion people in 2050, limiting loss of biodiversity and limiting climate change	
	Spatial scale	EU	
	Temporal scale	2050	
	Publication date/series	Published in 2009	
	Origins/derivation/family	PBL is preparing a series of related studies: one will review the historic Limits to Growth study; another will look at issues for the Netherlands	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, a description is provided.	
	Analytical/participative/both	Research and analysis	
	Level of engagement		
	Additional information on the methodology The analysis is largely based on models and other tools used in recent global outlooks, including the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC); the fourth Global Environment Outlook (UNEP); the International Assessment of Agricultural Science and Technology for Development (IAAST); and the OECD Environmental Outlook to 2030 (MNP, 2008; PBL, 2009)		
4. Purpose and application	**Objectives of the study and target audience**	Target audience: EU policy makers The aim of the study is to guide policy choices to achieve an ambitious vision in energy and climate and in food and agriculture by 2050	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	A comprehensive report with many colour figures and graphs	
	Language	English	
	Access and cost	Full electronic versions of the reports available for free on the PBL website	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Netherlands Environmental Assessment Agency	

Title of future study: Getting in the right lane for 2050			Descriptive icon
	Lead partner: developed by whom?	Netherlands Environmental Assessment Agency (PBL) and the Stockholm Resilience Centre	
	Types of other participating organisations: Independent research institutes		
8. References and contact information	Getting into the Right Lane for 2050, Netherlands Environmental Assessment Agency (PBL), Bilthoven, October 2009 http://www.rivm.nl/bibliotheek/rapporten/500159001.pdf jan.bakkes@pbl.nl		

Title of future study:

Growth and immigration scenarios for Turkey and the EU

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The study, released in 2004 by the Centre for European Studies in Brussels and Bogazici University in Istanbul, estimates potential immigration from Turkey to the existing EU when Turkey becomes a full member and restrictions on labour are removed, based on the experience of countries that have already joined the EU. Alternative methods and scenarios are scrutinised in forecasting probable magnitudes for the period 2004–2030. Four scenarios are presented.

1.2 Summary of the scenarios

1. Scenario 1 (based on immigration data from all Europe):

The scenario develops two variants, the first emulates for Turkey the actual experience of EU countries with free movement of labour. This simulation forecasts a rather smooth curve of immigration, with total net migration barely reaching 1.1 million by 2030. The second emulates — repeats for Turkey — the experience of countries including Turkey with guest worker agreements until 1973. Under this simulation, a jump in immigration is observed, which reaches moderate levels around 2020 and results in a total immigration of 1.8 million by 2030.

2. Scenario 2 (based on immigration data from Southern Europe — Greece, Portugal & Spain):

This scenario indicates that a successful accession period with high national economic growth and effective implementation of reforms reduces and gradually eliminates migration pressures. Total net migration forecast until 2030 does not exceed 1 million.

3. Scenario 3 (based on Turkey's experience between 1967–2001 as the reference):

Under this scenario, there is a major jump in migration that is moderated gradually. The forecast for total net migration to 2030 is 2.1 million.

4. Scenario 4 (assuming Turkey's EU accession is suspended):

Under this scenario, high growth cannot be sustained (urban GDP grows at 4 % annually while rural GDP stagnates), unemployment climbs (approaching 20 %) and political reforms either slow or are reversed. The forecast for total net migration until 2030 exceeds 2.7 million.

In conclusion, if Turkey loses the prospect of membership, the EU may end up having more immigrants than under a regime of free movement of labour with Turkey as a prosperous EU member.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	1. Turkey's EU Membership 2. Assumptions concerning immigration rates	
	Number of scenarios	Four	
	Thematic focus	Demography; politics	
	Specific issue focus	Migration	
	Integration of environment/ society/economy	The paper explores the link between economic paths and integration. The environment is not considered	
	Policy targets	No targets or goals specified	

Title of future study: Growth and immigration scenarios for Turkey and the EU			Descriptive icon
	Spatial scale	Turkey and the European Union	
	Temporal scale	2004–2030	
	Publication date/series	Published in December 2004	
	Origins/derivation/family	The study is based on the findings of the 'twin-project' on employment and migration at Bogazici University, Centre for Economic and Econometrics and Centre for European Studies, sponsored by the Open Institute Assistance Foundation (OSIAF)	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, a short description is provided	
	Analytical/participative/both	Expert analysis	
	Level of engagement	No information available	
4. Purpose and application	**Objectives of the study and target audience**	No information available, though the study appears to be intended for policy makers in the EU and Turkey	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Use of technical language, tables and graphs showing supply of migrants stock and net change in supply of migrants	
	Language	English	
	Access and cost	PDF download for free or hard copy available for EUR 12 at: http://shop.ceps.eu/BookDetail.php?item_id=1183	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Centre for European Studies; Bogazici University, Istanbul	
	Lead partner: developed by whom?	Centre for European Studies (attributed to CEPS as it is published by this organisation)	
	Types of other participating organisations: No other participating organisations.		
8. References and contact information	Erzan, R., Kuzubas, U. & Yildiz, N. 2004, *Growth and Immigration Scenarios for Turkey and the EU,* EU-Turkey Working Papers, No. 13/December, Centre for European Policy Studies, Brussels.		

Title of future study:

Intelligent infrastructure futures: The scenarios — towards 2055

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The report, prepared by the Office of Science and Technology (Foresight Programme) and published in 2006, looks at possible impacts and uses of information technology in transport infrastructure, and in particular how these can become 'intelligent systems'.

A set of four scenarios are developed to help understand how a series of factors might interact: what will happen in science and technology; the role of business and government; and social attitudes.

1.2 Summary of the scenarios

1. Perpetual motion

This scenario describes society driven by information, consumption and competition. Energy driving road transport is inexpensive and has low emissions (though air transport is still based on fossil fuels). Cities have high densities and also high levels of individual (and low-emission) vehicle use. By 2025, vehicles usually drive themselves, selecting the least-congested routes and small 'swarming buses' take users directly to their destinations. Everyone is connected to a common information grid. By 2040, the 'always on' culture creates increasing stress on people's lives. Moreover, there are environmental problems, such as waste from consumption and from the increased number of nuclear power plants. Income disparities — within developed countries and globally — have not improved.

2. Urban colonies

Investments focus on environmentally friendly technology. Energy for road transport remains expensive, while public transport in urban areas is inexpensive and low polluting. Information technology is not well integrated into transport. The economic focus is more urban than global. Society is more integrated locally, but economic development is slower than in the first scenario. Rural areas are isolated.

3. Tribal trading

After a sharp energy shock and conflicts of resources, economies have become local. Long-distance travel sharply declines, and intelligent infrastructure is not on the agenda. Cities decline. Automobile use also largely declines, while old infrastructure is repaired when resources are available. As a result, personal transport reverts to bicycles and horses.

4. Good intentions

There is a lack of inexpensive, low-emissions transport technology, but extreme weather becomes commonplace. As a result, policy focuses on limiting carbon emissions. Individuals and businesses face strict 'carbon budgets'.

The description of the scenarios is divided into three time frames: to 2025, to 2040 and to 2055. In the first time period, today's new technology becomes widespread. In the second, today's advanced research comes into use, while the third sees the application of research that has not yet taken place.

Title of future study: Intelligent infrastructure futures: The scenarios — towards 2055			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	No information available	
	Axes/factors considered	1. Acceptance of intelligent infrastructure 2. Availability of low-emissions transport systems	
	Number of scenarios	Four: Perpetual motion Urban colonies Tribal trading Good intentions	
	Thematic focus	Transport; technology and innovation	 
	Specific issue focus	Information technologies	
	Integration of environment/ society/economy	Yes, the report considers the social, economic and environmental impacts of new transport technology	
	Policy targets	No targets or goals specified, but reducing emissions (both local air pollution and greenhouse gas emissions) and increase individual choice appear to be among the objectives	
	Spatial scale	UK — though results could be applicable to other advanced economies	
	Temporal scale	2055	
	Publication date/series	Published in 2006	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Yes, information available in report and on the web site	
	Analytical/participative/both	Both	 

Title of future study: Intelligent infrastructure futures: The scenarios — towards 2055			Descriptive icon
	Level of engagement	Workshops played an important role in developing the report. Participants included researchers and business and government representatives (NGO participation was not noted)	
	Additional information on the methodology Scenario development involved four stages: • Driver prioritisation and analysis • Evaluating uncertainties • Scenario matrix construction • Construction of scenario narratives In the first phase, the project identified over 60 'drivers for change' shaping the future of transport and these may be interesting for review in other work on transport futures		
4. Purpose and application	**Objectives of the study and target audience**	The aim of the study is to examine the challenges and opportunities for the UK regarding intelligent infrastructure systems and to investigate how science and technology might be applied to infrastructure over the next 50 years. The specific audience is not mentioned, but it appears to include policy makers, stakeholders and the public	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	The methodology sees 'working with the completed scenarios' as its fifth and final stage. Information on results, however, is not available. The scenarios were presented to stakeholders and interest groups in transport, as well as to a group of secondary school students. Businesses were more interested in short-term paths, and those in some areas showed a greater interest in economic opportunities than in environmental considerations. The students, on the other hand, were more concerned about environmental sustainability and called for greater policy efforts to change individual transport behaviour	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text, including boxes describing technology opportunities ('telepresencing' and 'swarming buses') as well as the lives of individuals in the future scenarios. 'Reflections' on each scenario describe its genesis as well as possible impacts within a broader context. A few key drawings illustrate each scenario	
	Language	English	
	Access and cost	Full report available for free on the Foresight government website	Free
6. Evaluation	**Any evaluation of its use?**	The presentation and discussion of scenarios with different groups provided initial feedback	
7. Organisations involved	**Initiator**	UK Government: Office of Science and Technology (Foresight Programme)	

Title of future study: Intelligent infrastructure futures: The scenarios — towards 2055			**Descriptive icon**
	Lead partner: developed by whom?	UK Government: Office of Science and Technology (Foresight Programme)	GOV
8. References and contact information	Intelligent Infrastructure Futures, *The Scenarios — Towards 2025,* UK Government: Office of Science and Technology (Foresight Programme), 2006. http://www.foresight.gov.uk/OurWork/CompletedProjects/IIS/Index.asp Foresight Directorate Bay 327 1 Victoria Street London SW1H 0ET www.foresight.gov.uk		

Title of future study:

Trends in vehicle and fuel technologies: scenarios for future trends

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The report, produced by the Institute for Prospective Technological Studies of the European Commission's Joint Research Centre in 2003, explores future prospects for internal combustion engines, electric vehicles, hybrid vehicles and fuel cells. The report concludes that, while several alternative technologies are technically promising, support measures are needed to bring them on the market. In addition, the cooperation of auto manufacturers is required to bring any alternative technologies to market — and manufacturers may not be able to support all three alternatives.

The study prepared a baseline scenario and a series of alternative scenarios based on different economic and policy options.

1.2 Summary of the scenarios

1. Baseline scenario

In this scenario, there are no policy measures to support alternative technologies or fuels. Fuel cells become an option towards 2020, and electric vehicles secure a small niche in the market. Hybrid vehicles may play an intermediate role. CO_2 emissions from passenger vehicles increase by 3 % to 2010 and fall by 13 % in 2020, due to improvements in conventional technologies, withdrawal of older vehicles from use and the introduction of a small but rising share of vehicles powered by alternatives.

2. Oil price scenarios (high and low)

The high oil price scenario sees an increase to USD 32/barrel (compared to USD 25 in the baseline scenario). The higher oil price would increase the shift to alternative technologies after 2010 (before these would not be sufficiently available). It would also bring a shift from gasoline to diesel as well as reduce growth in transport demand. The low oil price scenario (USD 18/barrel) would have opposite effects.

3. Carbon tax scenarios (EUR 0.50/t and EUR 1.00/t)

The carbon tax would first affect the relative share of gasoline over diesel fuel. With the tax, gasoline would have an advantage over fuel cells as well, but electric and hybrid vehicles would benefit.

4. Subsidies for electric, hybrid, fuel cell vehicles

Subsidies would increase the market penetration of hybrid and fuel cell vehicles, especially towards 2020 but not of electric ones, as the price differential would still be large. Transport demand would not change. CO_2 emissions would fall with the introduction of hybrid vehicles but not fuel cells.

5. Zero emissions requirements in urban areas

This approach would promote all hybrid vehicles in the medium term and all alternative vehicles in the longer term, at the expense of diesel and gasoline-powered vehicles. CO_2 emissions would fall, but not as strongly as with a carbon tax.

6. Industry focus

A set of scenarios that look at the effect of industry not including one or one or more technology options (e.g. no electric or no electric *and* no hybrids).

7. No new technologies

Alternative technologies do not become attractive; diesel, gasoline vehicles continue to redominate.

Title of future study: Trends in vehicle and fuel technologies: scenarios for future trends			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	Oil prices; policy actions; industry choices	
	Number of scenarios	Baseline + 15 alternatives	
	Thematic focus	Transport	
	Specific issue focus	New technologies	
	Integration of environment/ society/economy	Focus on economics of new vehicle technologies	
	Policy targets	Targets or goals are not specified, but most scenarios are assessed in terms of CO_2 emissions, and overall goal is the introduction of low-polluting, low-GHG technologies	
	Spatial scale	EU focus. Some reference to North America, Japan, China and India	
	Temporal scale	2020	
	Publication date/series	Published in May 2003	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, some information available.	
	Analytical/participative/both	No information available	
	Level of engagement	No information available	
	Additional information on the methodology The scenarios test different alternatives using the IPTS Transport Technologies Model, an extension of the POLES energy market model that describes the dynamics of the passenger car market and the adoption of new technologies in the sector		
4. Purpose and application	**Objectives of the study and target audience**	The objective of the study is to investigate how science and technology might be applied to infrastructure over the next 50 years	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Used as an input in JRC's energy and transport models. No information on other uses	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Very data oriented, with tables, concentrated description of results and some charts	

Title of future study: Trends in vehicle and fuel technologies: scenarios for future trends			Descriptive icon
	Language	English	
	Access and cost	Report available for free on the internet	Free
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Institute for Prospective Technological Studies, Joint Research Centre, European Commission	
	Lead partner: developed by whom?	Institute for Prospective Technological Studies; Joint Research Centre, European Commission	EU ORG
	Types of other participating organisations: Several European research institutes participated in the study		
8. References and contact information	Christidis, Hidalgo and Soria, *Trends In Vehicle and Fuel Technologies: Scenarios for Future Trends,* IPTS Technical Report, Joint Research Centre, IPTS- Institute for Prospective Technological Studies, Seville, Spain, 2003. ftp://ftp.jrc.es/pub/EURdoc/eur20748en.pdf Joint Research Centre, IPTS- Institute for Prospective Technological Studies http://www.jrc.es		

Title of future study:
VISIONS: integrated visions for a sustainable Europe

Descriptive icon

1. Summary

1.1 Summary of the forward looking study

The VISIONS report was produced by the International Centre for Integrative Studies (ICIS) and several partners and published in April 2001. The VISION scenarios seek to provide a framework for considering sustainable development by integrating scenarios across spatial scales. The scenarios are based around their mode of decision-making (top-down or bottom-up) and their solutions (market-based or collective). They are intended for policymakers and businesses to consider sustainable development and their capacity to influence change.

1.2 Summary of the scenarios

In a first step a set of scenarios for each of the following regions was developed: Venice, North-West United Kingdom and the 'Green Heart' (a relatively thinly populated area in the Netherlands) as well as for Europe as a whole, covering the time span 2000–2050. In a second step these scenarios were combined to create three integrated scenarios or Visions, described here.

1. Living on the edge

At the dawn of the 21st century it becomes clear that climate change is underway and brings profound impacts on environment and society. Europe suffers a rising number of environmental calamities, e.g. floods and droughts, and some European regions become uninhabitable. This climate-related crisis precipitates social crises and tension as a result of migrations from affected areas to cities, prompts an overcrowding of urban areas and finally, in correlation with other dynamics, chaotic situations. These unworkable circumstances lead for example to deadlock situations due to a breakdown of transport systems.

2. Europe in transition

Europe goes through a period of true transition, reflected in substantial changes to different domains, i.e. economy, lifestyle, labour, demography etc. Society can be typified as being more knowledge intensive, less energy and pollution intensive, less materialistic, older yet healthier, more democratic and as a key characteristic, there is increased acknowledgement and appreciation of pluralism. The environment benefits from all these changes. Climate change occurs, but its adverse impacts are mainly compensated by the use of modern technology. Genetically modified organisms are rejected by the majority of people.

3. Shadows of Europe Ltd

Globalisation, liberalisation, privatisation and centralisation are the main drivers for the evolution of society. Europe has been strengthened and has gained more competiveness. Big businesses dominate society and leave little space for governments and independent research institutes that have lost their position as strong antagonists and regulatory bodies. Environmental protection is subordinated to economic objectives.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	1. Mode of decision-making (top-down or bottom-up) 2. Market-based or collective solutions	
	Number of scenarios	Three integrated scenarios (built from regional scenarios): 1. Living on the Edge 2. Europe in Transition 3. Shadows of Europe Ltd	

Title of future study: VISIONS: integrated visions for a sustainable Europe			Descriptive icon
	Thematic focus	Environment & Sustainability	
	Specific issue focus	Economic, environmental and social futures for Europe	
	Integration of environment/ society/economy	Integration of socio-economic factors as well as environmental	
	Policy targets	Broad policy goal is sustainable development in Europe	
	Spatial scale	Europe (based upon sub-national scenarios in three parts of western Europe and their correlation with a scenario reflecting Europe as a whole)	
	Temporal scale	2050 (endstate)	
	Publication date/series	Completed in 2001	
	Origins/derivation/family	Original	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Little information found in the documents available	
	Analytical/participative/both	Both	 
	Level of engagement	1. Expert judgement, stakeholder consultations and computer modelling to produce narratives for three sub-national regions and for Europe as a whole 2. Expert judgement to synthesise these scenarios into three over-arching narratives	
	Additional information on the methodology • The project used the following models: QUEST, Green Heart model, PHOENIX, Worldscan • Several workshops were conducted at different stages of the research. • Meeting of an expert panel was carried out. • The use of quantitative models was combined with narrative scenarios		
4. Purpose and application	**Objective and target audience**	Objective: bringing together physical and social science tools and techniques to deepen the process of policymaking for sustainable development in Europe. Target audience not specified	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	

Title of future study: VISIONS: integrated visions for a sustainable Europe			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	No information available	
	Language	English	
	Access and cost	Summary of the results on 'International Human Dimensions Programme on Global Environmental Change' page. Access to full study may be available from the ICIS office, icisoffice@icis.unimaas.nl	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Funded by the European Commission	
	Lead partner: developed by whom?	International Centre for Integrated Studies (ICIS), University of Maastricht	
	Types of other participating organisations: The study involved various partners, including universities, research institutes and consultancies		
8. References and contact information	Rotmans R., van Asselt M., Anastasi C., Rothman D., Greeuw S. & van Bers C. (2001) *Integrated Visions for a Sustainable Future: Change Mental Maps.* International Centre for Integrative Studies, Maastricht, The Netherlands. Coordinator: Prof. Jan Rotmans, Maastricht University, International Centre for Integrative Studies (ICIS), P.O. Box 616, 6200 MD Maastricht, the Netherlands (visiting address: Kapoenstraat 23), Contact telephone: + 31 43 3882663, Fax: + 31 43 3210541, E-mail: J.Rotmans@ICIS.unimaas.nl http://www.ihdp.uni-bonn.de/html/publications/update/update01_04/IHDPUpdate01_04_rotmans.html		

3.4 Western Balkans and neighbouring country studies

The literature reviews identified a total of 30 studies on the countries of the western Balkans: Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Serbia (the full list is provided in the Annex).

The main source is the literature review carried out for south-eastern Europe. It covered these five countries as well as Bulgaria, Romania, and Turkey (the latter three countries are all EEA members and those studies can be found in section III above).

The review focused on publically available studies that were prepared by international organisations, European institutions, national governments, industry and academia. The review was prepared in 2007 and it focused on studies published from 2000 to 2007. Researchers in the region were engaged, and the review thus includes studies in both English and in national languages. (All the titles and information presented here are in English; where available, a transliteration of the title in the original language is also provided.)

Fact sheets for the following three studies were prepared:

Study (and scenario titles where available)		Organisation	Thematic focus	Geographical coverage	Time horizon
21.	**Do All Roads Lead to Brussels? Analysis of the Different Trajectories of Croatia, Serbia-Montenegro and Bosnia-Herzegovina** • Rapid integration scenario • Delayed progress 'Balkan Ghetto scenario'	Massari, M., 2005 (Cambridge Review of International Affairs)	Politics	Croatia, Bosnia and Herzegovina, Montenegro, Serbia	2015
22.	**Facing the Future: The Balkans to the Year 2010** • Regional regression — worst-case scenario • Secure development — minimal optimistic scenario • Progressive integration — optimal positive scenario	Bugajski, Janusz, 2001 (Center for European Integration Studies, ZEI; www.zei.de/index_e.html)	Politics	Western Balkans	2010
23.	**Millennium Development Goals (Human Development Report for Bosnia and Herzegovina, 2003): Where will I be in 2015?**	UNDP, 2004 (United Nations Development Programme-www.undp.org)	Environment & Sustainability	Bosnia and Herzegovina	2015

Title of future study:

Do all roads lead to Brussels? analysis of the different trajectories of Croatia, Serbia-Montenegro and Bosnia-Herzegovina

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The article examines the main factors that have affected the prospects of Euro-Atlantic integration for Croatia, Serbia-Montenegro and Bosnia-Herzegovina (BiH). The central argument is that the difference in the pace of Euro-Atlantic integration among these three states has been a result of both EU policies and specific internal political issues within each of those countries. The article concludes by offering two possible scenarios for the coming years.

1.2 Summary of the scenarios

1. Rapid integration scenario:

- Croatia's integration into the EU by the end of decade acts as an incentive to energise and unify pro-reform forces within Serbia-Montenegro and BiH.
- BiH and Serbia-Montenegro integrate into the Euro-Atlantic institutions early in the next decade, perhaps even by 2012.
- This scenario would create a positive context for the consolidation of democracy and stability within BiH and Serbia-Montenegro, the region, and Europe in general.

2. Delayed progress 'Balkan Ghetto scenario':

- This less positive scenario would involve a long-term drawn out, zigzag process of consolidation within the countries with an uncertain outcome, delaying their Euro-Atlantic integration for a much longer period. The lack of a concrete European perspective would progressively weaken pro-reform forces within these countries and empower nationalist parties, thereby creating further delays.
- In Croatia, public enthusiasm for EU integration diminishes. After Romanian and Bulgarian accession, if Croatia doesn't join, such a scenario would create a 'Balkan ghetto', dangerous for the stability of the region and for Europe.
- Prolonged instability in Serbia-Montenegro and BiH and their exclusion from EU and NATO institutions could reactivate tensions, centrifugal forces, and separatism, and make the region even more attractive to human, weapons, and drug trafficking and other organised crime.
- Deprived countries and regions, particularly Bosnia and Sandžak between Serbia and Montenegro (or even Kosovo), could potentially become fertile ground for Islamist terror activities.

To lessen the substantial economic and administrative differences between Serbia-Montenegro and BiH, on the one hand, and Croatia (and Romania and Bulgaria), on the other hand, would require a more proactive international and EU strategy aimed at avoid the worst-case scenario. This remains the main challenge for Europe and the international community. Several strategies are proposed.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory and normative	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Croatia, Bosnia-Herzegovina (BiH) and Serbia-Montenegro's prospects of NATO and EU integration	
	Number of scenarios	Two	
	Thematic focus	Politics	
	Specific issue focus	Balkan integration into EU & NATO	
	Integration of environment/ society/economy	Society and economy. The environment is not mentioned	

Title of future study: Do all roads lead to Brussels? analysis of the different trajectories of Croatia, Serbia-Montenegro and Bosnia-Herzegovina			Descriptive icon
	Policy targets	Broad policy goal is Croatia, Serbia-Montenegro and Bosnia-Herzegovina's integration into European and Euro-Atlantic institutions in the next decade	
	Spatial scale	Croatia, Serbia-Montenegro and Bosnia-Herzegovina	
	Temporal scale	2005–2015	
	Publication date/series	Published July 2005	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No information found	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led (a personal assessment, with little external participation)	
4. Purpose and application	**Objectives of the study and target audience**	No information available, but likely to be directed at policy makers in Europe and North America	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Plain text, no graphs or maps.	
	Language	English	
	Access and cost	Available on IngentaConnect for 39 USD	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	No information available	
	Lead partner: developed by whom?	Paper by Maurizio Massari. Head of OSCE Mission to Serbia and Montenegro	
	Types of other participating organisations: International Organisation.		
8. References and contact information	Massari, M. 2005, *Do All Roads Lead to Brussels? Analysis of the Different Trajectories of Croatia, Serbia-Montenegro and Bosnia-Herzegovina,* Cambridge Review of International Affairs, Vol. 18, No. 2, pp.259–273. http://www.ingentaconnect.com/content/routledg/ccam/2005/00000018/00000002/art00010		

Title of future study:

Facing the future: the Balkans to the year 2010

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The paper, written in 2001, develops and assesses a set of scenarios for developments in the Balkans over the decade. The first part of the paper examines the geopolitical context of the Balkans at the end of the 20th century, assessing the international environment, regional parameters, and specific country developments.

The bulk of the study examines the following three scenarios:

1.2 Summary of the scenarios

1. Regional regression — worst-case scenario

This scenario envisages a major breakdown in the region's development, marked by accelerating domestic devolutions, spiralling regional rivalries, and growing international isolation.

2. Secure development — minimal optimistic scenario

Here, a minimal but conservative evolution is foreseen, characterised by domestic stabilisation, regional cooperation, and increasing international involvement.

3. Progressive integration — optimal positive scenario

This scenario projects an optimal constructive development, involving major domestic transformations, regional synchronisation, and the full international institutional integration of virtually all of the Balkans states.

In conclusion, the paper argues that in order to achieve at least a minimal constructive evolution, each Balkan country should aim for an optimal transformation by the year 2010. This would be done through the application of practical policy steps and targeted international support and assistance.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	The development of the Balkan region to the year 2010	
	Number of scenarios	Three alternative scenarios: Regional regression — worst-case scenario. Secure development — minimal optimistic scenario. Progressive integration — optimal positive scenario	
	Thematic focus	Politics	
	Specific issue focus	National development paths	

Title of future study: Facing the future: the Balkans to the year 2010			Descriptive icon
	Integration of environment/ society/economy	Society (evolution from post-communist societies to a democracy-oriented society). Economy (need for economic reforms in view of EU or/and NATO accession). Little focus on environment	
	Policy targets	Broad policy goal is the economic and political development of the Balkans	
	Spatial scale	The Balkan region: Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Macedonia, Romania, Serbia, Kosovo and Montenegro	
	Temporal scale	2001–2010	
	Publication date/series	Published in 2001. Apparently not updated	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information not found	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led. The study and the scenarios developed reflect research conducted at the Centre for European Integration Studies (ZEI), an independent research institute at the University of Bonn. The discussion paper was presented for discussion within the ZEI and for external peer review	
4. Purpose and application	**Objectives of the study and target audience**	Intended for policy decision-makers, researchers and other academics, as a discussion paper on Balkan integration with the EU and NATO	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Only text, no graphs or maps. Relatively plain language	
	Language	English (full text and summary)	
	Access and cost	Full article available for free on the internet from: http://aei.pitt.edu/211/	
6. Evaluation	**Any evaluation of their use?**	No information available	

Title of future study: Facing the future: the Balkans to the year 2010			**Descriptive icon**
7. Organisations involved	**Initiator**	Zentrum für Europäische Integrationsforschung (ZEI — Centre for European Integration Studies), Rheinische Friedrich Wilhelms-Universität Bonn	
	Lead partner: developed by whom?	Zentrum für Europäische Integrationsforschung (ZEI — Centre for European Integration Studies)	
	Types of other participating organisations: Research institute.		
8. References and contact information	Bugajski, J. 2001, *Facing the Future: The Balkans to the Year 2010, Discussion Paper C86,* Centre for European Integration Studies, University of Bonn, Germany. http://aei.pitt.edu/211/01/dp_c86_bugajski.pdf		

Title of future study:

Millennium Development Goals (human development report for Bosnia and Herzegovina, 2003): where will I be in 2015?

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The 2003 Human Development Report (HDR) for Bosnia and Herzegovina, developed by UNDP and published in 2003, is a forward-looking study focused on the Millennium Development Goals (MDGs) to be achieved by 2015. It discusses the MDGs, and elaborates a series of indicators. 'Where will I be in 2015?' is the theme of the Report.

1.2 Summary of the scenarios

The Report analyses and identifies major problems and obstacles in specific sectors, while presenting a set of policy suggestions that will help achieve sustainability and ownership. It also contains quantitative forecasts for the implementation of the Millennium Development Goals (MDGs), with projections for the MDGs and related indicators in 2007, 2010, and 2015.

The reference scenario makes projections of current trends to 2015, using a set of indicators to track socio-economic, political and environmental trends, following eight MDGs for sustainability. Some MDGs have been reformulated and adapted to BiH; additional MDG targets and indicators have also been proposed. In some sectors (education and health care in particular), MDG indicators match or exceed European standards. In addition to the 40 MDG universal indicators, indicators of specific significance for BiH for each MDG goal have been developed.

The report outlines a series of challenges, including improving governance and gender equality and ensuring a shift in international assistance towards long-term, nationally defined priorities.

2. Description/ characteristics of future study

Exploratory/normative	Mainly exploratory, but normative in proposing/analysing recommendations and alternative policies	
Qualitative/quantitative	Combination of qualitative and quantitative	
Axes/factors considered	Mainly economy and national policies (economic and sustainable development policies)	
Number of scenarios	One set of projections	
Thematic focus	Environment and sustainability	
Specific issue focus	A range of issues related to sustainable development: poverty reduction; good governance; civil society, democracy and human rights; gender; environment; health; education; international cooperation	
Integration of environment/ society/economy	All three areas are covered	
Policy targets	Quantitative targets: achieving Millennium Development Goals in Bosnia and Herzegovina by 2015	
Spatial scale	Bosnia and Herzegovina	

Title of future study: Millennium Development Goals (human development report for Bosnia and Herzegovina, 2003): where will I be in 2015?			Descriptive icon
	Temporal scale	2003–2015	
	Publication date/series	Published in 2003	
	Origins/derivation/family	Earlier human development reports with other focuses	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Information not found	
	Analytical/participative/both	No information available	
	Level of engagement	No information available	
	Additional information on the methodology Problems encountered obtaining appropriate statistics from BiH entities		
4. Purpose and application	**Objectives of the study and target audience**	The target audience is the government, public institutions and civil society organisations. Envisaged to be used by the government, public institutions and civil society organisations as a baseline and guide in the analysis of the current situation, for recommendations for achieving reforms and progress, and to facilitate the preparation of other documents addressing development strategies and policies	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	The HDR/MDG for BiH was prepared in conjunction with the Development Strategy of BiH, i.e. the Poverty Reduction Strategy Paper (PRSP). The Development Strategy of BiH was defined as a policy basis for the three years through 2007 and has a mid-term character, while the time horizon of the HDR/MDG is long-term (through 2015). The HDR/MDG recommendations have been partially incorporated in the PRSP, and thus became an integral part of government policy	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Comprehensive report with tables, charts and graphs	
	Language	English, Bosnian	
	Access and cost	Full report available on UNDP website for free	
6. Evaluation	**Any evaluation of its use?**	No information available	

Title of future study: Millennium Development Goals (human development report for Bosnia and Herzegovina, 2003): where will I be in 2015?			**Descriptive icon**
7. Organisations involved	**Initiator**	UNDP BiH office	
	Lead partner: developed by whom?	UNDP BiH office	
	Types of other participating organisations: International organisation		
8. References and contact information	UNDP Bosnia and Herzegovina, *Bosnia and Herzegovina Human Development Report/Millennium Development Goals 2003,* June 2003 http://www.undp.ba/index.aspx?PID=36&RID=12		

3.5 Eastern Europe studies

Eastern Europe refers to Belarus, Moldova, Russia and the Ukraine.

The review carried out in 2006 and updated in late 2008 searched for forward-looking studies concerning this geographical area, together with studies of the Caucasus and central Asia. The 2006 review and the 2008 update both searched for studies in both English and in national languages. Researchers in the region were engaged; they identified studies via web searches, library research and contacts with officials and academics.

While extensive research went into the preparation of this list, its results should not be considered exhaustive. In particular, it only covers publically available studies. In some cases, researchers learned of future-oriented studies that had not been published, including government-sponsored studies on topics such as the economy and energy. In a few cases, documents referred to specific studies but detailed bibliographical information could not be found.

In total, the review identified 104 forward-looking studies for eastern Europe (the full list is provided in the Annex). Fact sheets were prepared for 11 studies that appeared to be especially valuable for European environmental assessments. These are the following:

Study (and scenario titles where available)		Organisation	Thematic focus	Geographical coverage	Time horizon
24.	**Belarus's Strategic Matrix** • Euro Atlantic Choice • Flexible Course • Eurasian Integration	Ageev et al., 2005 (Institute of Economic Strategies — http://www.inesnet.ru/eng/)	Politics; economy	Belarus	2080
25.	**Prognosis Estimate of Ecological Risk (Rep. of Moldova)** • A single projection: no scenarios	Olga Kazantseva, Institute 'Urbanproiect', 2008 (Urban Project Institute, www.urbanproiect.md)	Environment	Moldova	2025
26.	**Economic Growth, Fuel Mix and Air Quality in Russia** • Two scenarios based on different economic growth estimates	Golub A. et al., 2003 (Environmental Defense Fund http://www.environmentaldefense.org/)	Air pollution; energy	Russia	2010
27.	**Global Long-term Energy-Economy-Environment Scenarios with an Emphasis on Russia** • Reference scenario • Extreme compliance scenario	Kryazhimskiy A., Minullin Y. and Schrattenholzer L., 2005 (IIASA http://www.iiasa.ac.at/)	Energy; Climate Change; Economy	Global/Russia	2100
28.	**Russia 2050: Strategy of Innovative Breakthrough** • Inertia and Market • Innovative Breakthrough	Kuzyk B.N. and Yakovets Y.V., 2005 (Institute of Economic Strategies http://www.inesnet.ru/eng/)	Economy; politics	Russia	2050
29.	**Russia and the World in the 21st Century** • Hard globalisation • Soft globalisation • Growing regionalisation • Chaos	Kuzyk B.N., 2005 (Institute of Economic Strategies http://www.inesnet.ru/eng/)	Economy; Politics	Russia	2080
30.	**Russian Federation Forest Sector Outlook Study (UNECE)** • Three scenarios with different economic development paths	UNECE/FAO, 2003 (UNECE — http://www.unece.org	Forestry	Russia	2015

Study (and scenario titles where available)		Organisation	Thematic focus	Geographical coverage	Time horizon
31.	**Russian Long-term Economic Trends: Economic Scenarios to 2020** • Super-Industrial Modernisation: • Burst into Globalisation: • Economic Isolation: • Energy Autism	Belousov A.R., 2005 (Centre for Macroeconomic Analysis & Short-Term Forecasting (Moscow), http://www.forecast.ru/)	Economy	Russia	2020
32.	**Russian Prospects — Political and Economic Scenarios** • Four political scenarios: return to dictatorship; democratic superpower; strong regions; strong federation • Four economic scenarios: free raw materials; new economic superpower; second world new soviet	Copenhagen Institute of Futures Studies, 2005 (Copenhagen Institute of Futures Studies http://www.cifs.dk/en/)	Economy; politics	Russia	2020
33.	**Russia's Demographic Perspectives to 2100** • Variations for key demographic variables	Andreev E.M. and Vishnevsky A.G., 2004	Demography	Russia	2100
34.	**Transport Strategy of the Russian Federation to 2030 (scenarios)** • Inertia: business as usual • Energy and raw materials • Innovative	Russian Ministry of Transport, 2008	Transport	Russia	2030

Title of future study:
Belarus's strategic matrix

Descriptive icon

1. Summary

1.1 Summary of the study

This study was published in 2005 by the Institute for Economic Strategies in Moscow, as part of a series of studies on the 'strategic matrix' of several countries of the former Soviet Union, including Russia, Kazakhstan, Ukraine, and Kyrgyzstan. All the studies in the series use the same nine factors in the analysis of future prospects and are based on a multi-factor model of historical dynamics. This study develops three scenarios about the economic and political future of Belarus, with the scenario of integration with Russia considered most probable and favourable one.

1.2 Summary of the scenarios

The study presents three scenarios for the future of Belarus:

1. Euro Atlantic Choice

Under this scenario, Belarus applies for EU membership and is forced to abandon a whole range of high-tech sectors. The agricultural sector is forecast to become uncompetitive. The country's main export potential would become deliveries of Russian oil and gas to European market. According to the study, this situation would lead to the full-scale collapse of Belorussian economy by the middle of the century. Generally, this scenario is viewed as unfavourable and is compared to the inclusion of Belorussian lands in the Polish-Lithuanian Commonwealth of the 16th to 18th centuries, a period claimed to have hindered economic and political development in Belarus.

2. Flexible Course

Under this scenario, Belarus balances between EU and Russian interests. This scenario is considered quite realistic, but the analysis warns of strong pressures from EU. It is noted that Belarus's 'systemic and resource capabilities' to resist such pressures are quite limited.

3. Eurasian Integration

Belarus joins a union with Russia, based on ethnic, religious and cultural affinities. Under this scenario, pressure from the EU can be easily 'compensated'.

Unlike the other matrix studies in this Catalogue (e.g. on Kyrgyzstan and Kazakhstan), this study does not describe the scenarios and the outcomes at length.

Nonetheless, Eurasian Integration is considered the most probable and favourable scenario for Belarus. It is stated in the conclusion that integration would ensure that Belarus's development potential is fulfilled. The country's development strategy, according to the report's conclusion, is under severe geopolitical pressure from the 'Euro-Atlantic community'.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory (though the third scenario appears to reflect the authors' desired outcome)	EXPL
	Qualitative/quantitative	Qualitative	Abc
	Axes/factors considered	Nine factors: 1. Governance 2. Territory 3. Natural resources 4. Population 5. Economy 6. Culture and religion 7. Science and education 8. Armed forces 9. Foreign policy	

Title of future study: Belarus's strategic matrix			Descriptive Icon
	Number of scenarios	Three: 1. Euro Atlantic Choice 2. Flexible Course 3. Eurasian Integration	
	Thematic focus	Politics; Economy	
	Specific issue focus	National development of Belarus	
	Integration of environment/ society/economy	No: little focus on environmental goals	
	Policy targets	Although not stated, the broad policy goal appears to be the integration of Belarus into Russia	
	Spatial scale	Belarus	
	Temporal scale	2080	
	Publication date/series	Published in 2005	
	Origins/derivation/family	Based on the multi-factor model developed by Kuzyk and used in other studies by the Institute for Economic Strategies (some of the other matrix studies are presented in this Catalogue)	
	Research/policy/business	Research/Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Some information available	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led	
4. Purpose and application	**Objectives of the study and target audience**	The study is intended for decision-makers and strategic planners, apparently to support the development of long-term economic strategies	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with graphs and figures	
	Language	Russian	
	Access and cost	Hard copy: 87 pages, not available on the Internet	

Title of future study: Belarus's strategic matrix			Descriptive Icon
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Institute for Economic Strategies, Moscow	
	Lead partner: developed by whom?	Institute for Economic Strategies, Moscow	
8. References and contact information	Ageyev A.I., Kuroyedov B.V. and S.P. Golovachenko, *Belarus's Strategic Matrix [Strategicheskaya matritsa Belarusi],* Institute for Economic Strategies, Moscow, 2005 Title in Russian: Агеев А. И., Куроедов Б. В., Гончаренко С. П. Стратегическая матрица Беларуси. М.: Институт экономических стратегий, 2005. The Institute's webpage: http://www.inesnet.ru/		

Title of future study:

Prognosis estimate of ecological risk (Republic of Moldova)

Descriptive icon

1. Summary

1.1 Summary of the study

This study, prepared by the Urban Project Institute in Kishinev, Moldova, provides a forecast of the future state of Moldova's environment, assuming the implementation of sustainable policy measures and strong cooperation among governmental authorities and citizens over the long term period. The study is part of the development of Moldova's new National Territorial Plan.

1.2 Summary of the scenario

The study presents a single, quantitative scenario for the future.

Its forecast is based on four main parameters: demographic (density of population), industrial, agricultural and transport levels. Among the specific factors that are compared and analysed are: solid waste, pasture land, use of mineral fertilizers, emissions to atmosphere and wastewater discharges.

Among its key results are the following:

- Agricultural pressures will increase. While total agricultural land will remain the same, fertiliser use will increase about seven-fold from 18.6 kg/ha in 2007 to 136 kg/ha in 2025.
- The number of livestock per hectare will increase (from 1.4 in 2007 to 2.5 in 2025)
- Road density will increase about 50 %, to 0.35 km/km^2
- Air pollution emissions will also increase in this period

2. Description/ charactearistics of future study			
	Exploratory/normative	Exploratory	EXPL
	Qualitative/quantitative	Quantitative	123
	Axes/factors considered	Only one scenario: population, industry, agriculture and transport trends are main factors/drivers	
	Number of scenarios	One	
	Thematic focus	Environment and sustainability	
	Specific issue focus	Details on a series of environmental sectors at national level in Moldova	
	Integration of environment/ society/economy	Social and economic factors are drivers of environmental pressures	
	Policy targets	Broad policy goal of environmental protection	
	Spatial scale	Republic of Moldova, with information at district (rayon) scale	Eastern Europe
	Temporal scale	2008–2025	20 yrs
	Publication date/series	Published in 2008	

Title of future study: Prognosis estimate of ecological risk (Republic of Moldova)			Descriptive icon
	Origins/derivation/family	No information available	
	Research/policy/business	Research	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information available	
	Analytical/participative/both	Expert-led and stakeholder involvement	
	Level of engagement	No information available	
	Additional information on the methodology The prognosis study was prepared as a spatial assessment and provides data at regional level. The study uses additive classification models to calculate its forward-looking indicators		
4. Purpose and application	**Objectives of the study and target audience**	The study is part of the development of Moldova's new National Territorial Plan, which is being prepared by UrbanProject, a state-owned company. The development of the National Plan includes assessments of sectors including energy, transport, agriculture and environment. Its goal is both to ensure more equitable economic development across Moldova's regions as well as to strengthen Moldova's integration with neighbouring countries and international organisations	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	The study is basis for regional planning and environment protection. It is used in Moldova's National Territorial Plan (2008)	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Use of maps, charts, narratives	
	Language	Romanian, English	
	Access and cost	It is available on web site of the Urban Project Institute: www.urbanproiect.md	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Urban Project Institute (Kishinev)	
	Lead partner: developed by whom?	Institute of Ecology and Geography of Moldavien Academy of Science, study led by Olga Kazantseva	
	Types of other participating organisations: Design and research		

Title of future study: Prognosis estimate of ecological risk (Republic of Moldova)		Descriptive icon
8. References and contact information	Current publications include the following: Казанцева, О.И. Методологические особенности прогнозной оценки экологического риска. //Проблемы природопользования и экологическая ситуация в Европейской России и сопредельных странах. Ч. 1. Природопользование и устойчивое сбалансированное развитие. Материалы III Международной научной конференции, Белгород, 20–24 октября 2008 г. М.: Белгород:ИПЦ «Политерра», 2008, с. 75–77 (Materials presented at III international scientific conference on environment in European Russia and neighbour countries, Belgorod, Russia 2008) Cazanteva, O., Conovalova V., Mucilo, M., Ianachieva, L., Bejan, A. Utilisation SIG pour' evalution de l'influence antropiqui sur' environnement. Analele ştiinţifice ale universităţii 'Al.I.Cuza' din Iaşi (seria nouă). Geografia Supliment. Lucrările simpozionului 'Sisteme informaţionale geografice', Nr.13, Tomul LIII, Iaşi, 2007, p. 193–198	

Title of future study:

Economic growth, fuel mix and air quality in Russia

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This brief study estimates the impact of change in fuel mix — in particular, the substitution of coal for natural gas — in Russian thermal power plants in terms of human health. The study looks at two probable macroeconomic scenarios

On the basis of the estimated air emissions, the analysis then models the resulting health impacts. According to the calculations, some regions, mainly in central Russia, will see over a 100 % increase in SO2 emissions and over a 20 % increase in mortality. Impact in terms of years of life lost (YOLL) exceeds 100 000 per year for Russia as a whole, and 4 000 for Moscow.

1.2 Summary of the scenarios

1. Scenario A

This scenario envisages decline in economic growth after 2005. The scenario implies no change in current macroeconomic indicators. Investment is at a low level, the economy is in stagnation, and there is no technological change.

2. Scenario B

This scenario foresees stable economic growth in the near future, the development of infrastructure, high investment levels, sustainable use of natural resources, and technological changes based on increased R&D. Imports are reduced, and real sector and manufacturing sector income is higher. This second, more optimistic scenario is used for further estimates. A 46 % increase in Russia's electricity consumption is forecast from 2000 to 2010. Further modelling estimates the substitution of cheaper coal for natural gas in power plants, with an estimate of approximately a 40 % increase in coal consumption.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Quantitative focus	
	Axes/factors considered	Economic growth, technological change and environmental policy	
	Number of scenarios	Two: Scenarios	
	Thematic focus	Air pollution; energy	 
	Specific issue focus	Air pollution, health	
	Integration of environment/ society/economy	Yes: economic development linked to air pollution, which in turn is linked to health	
	Policy targets	Qualitative target of reducing air pollution and greenhouse gas emissions in Russia	

Title of future study: Economic growth, fuel mix and air quality in Russia			Descriptive icon
	Spatial scale	Russia	
	Temporal scale	2010	
	Publication date/series	Published in 2003	
	Origins/derivation/family	Supported in part by the World Bank	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Yes, a description is provided in the report	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led, including creation of fuel mix change scenarios, estimates of air pollution associated with those scenarios, and the relevant impact assessment	
	Additional information on the methodology The EcoSense Model was applied to estimate the major impacts on the environment. This model computes annual average concentrations based on emissions data in particular locations. The model then converts these concentrations into human health risk and the impact on ecological systems, forests, agriculture and water resources. Human health risk is the main focus. In health risk calculations, coefficients to derive Years of Life Lost (YOLL) were used to consider premature mortality		
4. Purpose and application	**Objectives of the study and target audience**	Intended to provide background for major policy choices, including Russia's ratification of the Kyoto Protocol	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Reportedly used by policy makers in the World Bank and others in the European Commission, some EU governments and the Russian government: this study together with follow-up research reportedly influenced negotiations between Russia and the EU over Russia's participation in the Kyoto Protocol and WTO, and in particular over whether to remove natural gas subsidies slowly or more quickly	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Storylines with the use of tables and graphs	
	Language	English	
	Access and cost	Full report available for free on the internet	

Title of future study: Economic growth, fuel mix and air quality in Russia			Descriptive icon
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Environmental Defence (US NGO); partial funding from the World Bank	
	Lead partner: developed by whom?	Environmental Defence (US NGO)	
8. References and contact information	Golub A., Dudek D., Droste-Franke B., Ksenofontov M., Strukova E., Friedrich R. and A. Markandya, *Economic Growth, Fuel Mix and Air Quality in Russia,* Washington: Environmental Defence, 2003. http://www.edf.org/documents/2878_fuel-mix_05_view.pdf		

Title of future study:

Global long-term energy-economy-environment scenarios with an emphasis on Russia

Descriptive icon

1. Summary

1.1 Summary of the forward looking study

The study focuses on Russia's energy-economy-environment system and its future evolution. The report describes two research activities carried out at IIASA, working with leading groups in Russia. The first research project discusses Russia's strategic prospects regarding the Kyoto Protocol rules and a future global climate change scheme. The second research area concerns gas pipeline projects in central Asia.

Two scenarios for Russia's greenhouse gas emissions were developed, one without any greenhouse gas restrictions in Russia, the other with Kyoto limits achieved exclusively with domestic measures. (A third scenario, called 'Full trade' and pertaining to carbon trading was not presented in this study).

1.2 Summary of the scenarios

1. Reference scenario: without GHG emission constraints

Under the reference scenario, Russian GDP slows from 4.5 % pa (2000) to 2.2 % pa (2100). Energy efficiency improvements also slow, from 3.9 % to 1.1 % pa. The reference scenario is varied, however, by looking at a high-growth variant (7 % GDP growth pa from 2000 to 2020) and two intermediate scenarios.

2. Extreme compliance scenario (DOM): Kyoto limits are achieved (and maintained) exclusively with domestic measures

Assuming an extension of the 'Kyoto Limits' beyond the First Commitment Period (2008–2012), Russia will not suffer significant GDP loss by complying with the Kyoto Protocol (through domestic measures alone) except under specific sets of assumptions that include high economic growth. This is because the Russian economy has significant opportunities for efficiency and other improvements that will reduce CO_2 emissions with essentially no cost. Trading measures, to be modelled in future work, should provide further opportunities to reduce the costs of meeting the Kyoto Protocol. The overall conclusion is that Russia appears well poised to contribute to global environmental protection without risking major damage to its economy.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory and normative	EXPL NORM
	Qualitative/quantitative	Quantitative	EXPL NORM
	Axes/factors considered	Russian policy regarding climate change	
	Number of scenarios	Two: 1. Reference scenario: without GHG emission constraints. 2. Extreme compliance scenario (DOM): Kyoto limits are achieved (and maintained) exclusively with domestic measures	
	Thematic focus	Energy; Climate change; Economy	Climate Change
	Specific issue focus	Climate change; Natural environment	

Title of future study: Global long-term energy-economy-environment scenarios with an emphasis on Russia			Descriptive icon
	Integration of environment/ society/economy	Focus on energy, environment and economy	
	Policy targets	Quantitative target: implementing Kyoto Protocol requirements in Russia	
	Spatial scale	Former Soviet Union, with particular focus on Russia	
	Temporal scale	2100	
	Publication date/series	Published in 2005	
	Origins/derivation/family	A regional application of IIASA's long-term/global energy-economy-environmental scenarios	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, article includes a description of the methodology.	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led modelling	
	Additional information on the methodology The study used the MERGE model, which describes the interaction between macroeconomic production, the energy system (demand and supply), pollutant emissions, and climate change. The model consists of three logical parts: a macroeconomic module, an energy supply part, and a climate module. It combines a top-down description of the economy and energy demand with a bottom-up description of the energy sector.		
4. Purpose and application	**Objectives of the study and target audience**	No information available	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Conference paper, to be published by the Moscow International Energy Club	
	Language	English	
	Access and cost	Paper available for free on the Internet on the web site of the University of Paris (Dauphine)	

Title of future study: Global long-term energy-economy-environment scenarios with an emphasis on Russia			Descriptive icon
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	International Institute for Applied Systems Analysis (IIASA), Austria	
	Lead partner: developed by whom?	IIASA, Austria	
8. References and contact information	International research organisation.		

Title of future study:

Russia 2050: strategy of innovative breakthrough

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study, prepared by Institute of Economic Forecasting and Institute of Economic Strategies of the Russian Academy of Sciences in 2005, presents a narrative description of two scenarios for Russia's socio-economic development. The study does not consider influences or impacts from the pan-European or global context; nor does it consider environment and sustainability. The study includes lengthy discussions of Russian history, socio-economic theory (e.g. Kondratieff cycles) and Russia's place in the world.

1.2 Summary of the scenarios

1. Inertia and Market

In this scenario, the basic shape of Russia's economy will not change over the period. The infrastructure sector and energy and raw materials will be the leading sectors. However, their growth will be limited by the depletion of mineral deposits and a lack of resources for the development of infrastructure. In terms of other economic sectors, the food industry and other light industry will continue, though somewhat decreased. The social services sector will stabilize (though services will be mainly performed on a commercial and market basis). Domestic machine-building and science will continue to decline. There will be some positive shifts. The ferrous metallurgy, forestry and building materials sectors will increase between 2010–2020s due to replacement of obsolete fixed capital. A similar process in the power generation sector will introduce more efficient and renewable energy sources and fundamentally new methods of power generation. In this scenario, the authors see Russia as dependent on foreign companies and other countries, unable to achieve high economic growth rates or an improvement of living standards, and thus the country continues to move into the periphery of global economic and technological developments.

2. Innovative Breakthrough

In this scenario, the authors foresee a significant structural shift in the economy, especially in the period to 2030. This shift will involve:

- The growth of innovation and investment (with an accelerated replacement of obsolete fixed capital), in science and in machine-building
- An increase in household consumption, first of all for light industry products as well as for government-supported social services
- A relative decline in the energy and raw material sectors, thus saving natural resources
- The banking, finance and insurance sectors will stabilize and mortgage lending will grow

The authors see the development of Russia's 'high-technology complex' as a core element of this scenario. They see the 'defence industry complex' playing a major role within the high-technology complex.

2. Description/ characteristics of future study	**Exploratory/normative**	Normative (one preferred and one negative scenario)	
	Qualitative/quantitative	Extensive narrative description based on quantitative scenarios	
	Axes/factors considered)	Economy (resource-based vs. innovation-based)	
	Number of scenarios	Two: 1. Inertia and Market 2. Innovative Breakthrough	
	Thematic focus	Economy; Politics	
	Specific issue focus	Technology innovation	

Title of future study: Russia 2050: strategy of innovative breakthrough			Descriptive icon
	Integration of environment/ society/economy	Society and economy; little attention to environment	
	Policy targets	The broad policy goal appears to be an economic development path for Russia not based on natural resources	
	Spatial scale	Russia	
	Temporal scale	2005–2050	
	Publication date/series	Book published in 2005	
	Origins/derivation/family	Further development of a 2004 study (in Russian only) entitled *Russia's Future: Inertial Development or Innovative Breakthrough?* (Будущее России: инерционное развитие или инновационный прорыв?) This study is based on the multi-factor model developed by Kuzyk and used in other studies by the Institute for Economic Strategies (some of the other matrix studies are presented in this Catalogue)	
	Research/policy/business	Research and policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, methodology described in appendix to the report	
	Analytical/participative/both	Expert-focused	
	Level of engagement	Expert-led	
	Additional information on the methodology The two scenarios were developed mainly using input-output economic models, in particular the RIM (Russian Inter-industry Model), based on a computer model of Russian economy by INFORUM (University of Maryland, USA)		
4. Purpose and application	**Objectives of the study and target audience**	The goal of study appears to be to influence Russia's national economic policy. The target audience seems to be national policy makers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Extensive narrative, with charts and tables, though information on the underlying quantitative model is presented in an appendix	
	Language	The original Russian book is translated (not always well) into English	

Title of future study: Russia 2050: strategy of innovative breakthrough			Descriptive icon
	Access and cost	Electronic version of the report available for free in English on the main author's website	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Institute of Economic Forecasting and Institute of Economic Strategies of the Russian Academy of Sciences	
	Lead partner: developed by whom?	Institute of Economic Forecasting and Institute of Economic Strategies of the Russian Academy of Sciences	
8. References and contact information	Kuzyk B.N. and Yu.V. Yakovets, Russia 2050: *Strategy of Innovative Breakthrough,* Moscow, Institute of Economic Strategies, 2005. Title in Russian: Кузык Б.Н., Яковец Ю. В. Россия-2050: Стратегия инновационного прорыва. М.: Институт экономических стратегий, 2005. Available at: http://www.kuzyk.ru/allbooks/russia2050eng/ The Institute's webpage: http://www.inesnet.ru/		

Title of future study:

Russia and the world in the 21st century

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study, published by the Institute for Economic Strategies in Moscow in 2006, presents long-term scenarios of Russia's development up to 2080 and is based on a multi-factor model of historical dynamics. The study uses a similar method to the institute's strategic matrix studies of individual countries.

1.2 Summary of the scenarios

The study explores four scenarios for the future:

1. Hard Globalisation

The US remains the dominant economic and military power. Russia's development is constrained and is focused on its resource base.

2. Soft Globalisation

The US gradually weakens and the EU becomes the world's central economic power. Russia has greater opportunity for development

3. Growing Regionalisation

Large economic zones emerge across the world — e.g. North America, Asia-Pacific and Europe. Trade wars emerge as WTO mechanisms are less effective. Russia establishes its own economic zone across the former Soviet Union

4. Chaos

Various disastrous events (e.g. large-scale terrorist acts and natural cataclysms) severely limit global development, as well as Russia's.

Soft Globalisation is considered the most favourable scenario for Russia.

The study explores possible future developments in terms of four possible strategies for the country's international engagement: Submission (Russia's submission to western geopolitical interests, turning into their resource base); Confrontation (political and military revanchism leading to the confrontation with global superpowers); Isolationism; and Revival, which is argued to be the most acceptable for the country. The Revival Strategy is called 'the strategy of flexible course' that focuses on the 'harmonious and progressive development based on the innovative model of economic development'.

The study also presents five options for Russia's future natural resource endowments: Comfortable; Sub-comfortable; Status Quo; Depletion; and Degradation. The Comfortable option, in which resource export potential will rise and quality of life standards improve, is considered the most probable for Russia in the long term (after 2020); between 2010 and 2020, however, the Status Quo option is deemed to be the most probable.

The study's conclusion is that Russia has long been on the verge of making a strategic choice and this decision has been hampered by the unwillingness, or inability, of its political elite to make strategic decisions. In the meantime, the potential for evolutionary development will soon be exhausted unless a new, innovation-breakthrough course is pursued.

Title of future study: Russia and the world in the 21st century			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Nine factors: 1. Governance 2. Territory 3. Natural resources 4. Population 5. Economy 6. Culture and religion 7. Science and education 8. Armed forces 9. Foreign policy	
	Number of scenarios	Four: 1. Hard Globalisation 2. Soft Globalisation 3. Growing Regionalisation 4. Chaos	
	Thematic focus	Economy; Politics	
	Specific issue focus	Natural Resources	
	Integration of environment/ society/economy	Focus on economic futures; little attention to the environment	
	Policy targets	The broad policy goal appears to be Russia's economic development	
	Spatial scale	Russian Federation	
	Temporal scale	2080	
	Publication date/series	Published in 2006	
	Origins/derivation/family	Based on the multi-factor model developed by Kuzyk and used in other studies by the Institute for Economic Strategies in Moscow (some of the other matrix studies are presented in this Catalogue)	
	Research/policy/business	Research/Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Mathodological transparency	Information not available	

Title of future study: Russia and the world in the 21st century			Descriptive icon
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led study	
4. Purpose and application	**Objective of the study and target audience**	The study is destined for decision-makers and academic and business communities for the development of long-term economic strategies	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available on its actual use	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with photos, graphs and figures	
	Language	Russian	
	Access and cost	A hard cover 640 page book, 500 copies printed	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Institute for Economic Strategies, Moscow	
	Lead partner: developed by whom?	Institute for Economic Strategies, Moscow	
8. References and contact information	Kuzyk B.N. *Russia and the World in the 21st Century [Rossiya i mir v XXI veke].* Moscow: Institute for Economic Strategies, 2006 Title in Russian: Кузык Б. Н. Россия и мир в XXI веке. М.: Институт экономических стратегий, 2006. Available at: http://www.kuzyk.ru/allbooks/russia_and_peace/		

Title of future study:

Russian Federation forest sector outlook study

Descriptive icon

1. Summary

1.1 Summary of the forward looking study

The study was prepared by Russia's Institute of Economics, Production Management and Information for Forest, Pulp and Paper and Woodworking Industries, with the participation of the Russian Ministry of Natural Resources and the Ministry of Economics, Science and Technologies. It develops scenarios for Russia's forestry and forest products sector.

Three scenarios are presented, based on Russia's official national forecasts of socio-economic development, as well as the Strategy of development of forest, woodworking and pulp and paper industries for the period up to 2010, drawn up by the Ministry of Economy of Russia. Environmental protection is mentioned as a goal, but plays a small role in the report itself.

1.2 Summary of the scenarios

1. Scenario I

This scenario uses a variant of the national forecast that assumes GDP growth in the range from 5 % to 10 % per year over the time period: GDP thus will increase by 60–80 % by 2010 compared with 2000. Investment in fixed capital will account for 25 % of GDP. The State will play a significant role in investment and innovation activities, social guarantees to the population and promotion of small-scale business. The development of Russia's forest sector involves:

- Modernization and technical improvements of existing enterprises
- Increased share of wood processing
- Construction of new pulp and paper mills in the European part of Russia (Central, Northern regions) and beyond the Urals — in west and east Siberia and in the Far East.
- Priority development of the forest and forest industry sector of the European part of the country.
- Foreign investment to shift exports towards pulp and paper and woodworking industries.
- Substitution of imports of paper as well as woodworking products.
- Advanced technological processes reduce environmental impacts

In this scenario, total timber cutting reaches 255 million m^3 in 2015, 50 % above 2000 levels but below the 1980 level of 328 m^3.

2. Scenario II

Based on the most favourable socio-economic and technical scenario projected by the Government. Throughout the period, the average annual rates of GDP growth will be not less than 7 %, reaching a peak of 10 % by 2015. The rate of industry growth will be 8–11 % per year, and there will be an introduction of resource and energy saving technologies. By 2015, housing starts will increase more than 3-fold against 2000. Under the second scenario, the forest sector will satisfy higher domestic demand and also realize its full export potential. There will be radical changes in the structure of the forest industry, including the establishment of new enterprises and the production of competitive products meeting world standards. The location of forest industry production would be shifted to new large forest industry regions in the Yenisei and Podkamennaya Tunguska river basins and the Far East. Timber cutting would reach 301 m^3 in 2015.

3. Scenario III

An 'inertia' scenario, as the economic situation remains unstable. The rates of growth of GDP are 3–4 % per year. Investment growth rate is 6 % per year. Many social problems remain unsolved. By 2015, the population decreases by 20 million. As a result, a more limited demand for forest products is expected. Thus, pulp and paper production is expected to grow not more than 5 % per year. Technological improvements to manufacturing equipment will proceed at low rates. Labour productivity and quality of products will lag behind the levels of the leading timber producing countries. Russia will import a large quantity of furniture, paper and paperboard articles and other wood products. Timber cutting reaches 219 m^3 by 2015.

Title of future study: Russian Federation forest sector outlook study			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Main axis: national economic development	
	Number of scenarios	Three	
	Thematic focus	Forestry	
	Specific issue focus	Forestry industry	
	Integration of environment/ society/economy	Focus on economy	
	Policy targets	Qualitative target: development of the forest products industry in Russia	
	Spatial scale	Russia	
	Temporal scale	2015	
	Publication date/series	Published in 2003	
	Origins/derivation/family	Methodology linked to that used for Russia's Forest Strategy of the Ministry of Economy	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, a chapter in report describes methodology	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led, based on Russia's official national forecasts of socio-economic development as well as official policy documents	
	Additional information on the methodology The study states that it uses methods and projections from the UNECE Timber Committee, and is part of UNECE's European Forest Sector Outlook Study (EFSOS) Programme, but details are not provided		

Title of future study: Russian Federation forest sector outlook study			Descriptive icon
4. Purpose and application	**Objective of the study and target audience**	The results of the study were considered in the 'Main Directions of Forest Industry Development' and in the 'Concept of Development of Forestry of the Russian Federation' presented by the Ministry of Industry, Science and Technologies and the Ministry of Natural Resources	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	See above	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Storylines with use of tables	
	Language	English and Russian	
	Access and cost	Full report available for free on UNECE website	Free
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	UNECE and Russian government	
	Lead partner: developed by whom?	The Institute of Economics, Production Management and Information for Forest, Pulp and Paper and Woodworking Industries (OAO NIPIEIlesprom)	GOV
	Types of other participating organisations: International organisation (FAO)		
8. References and contact information	UNECE, *Russian Federation Forest Sector Outlook Study,* Geneva Timber and Forest Discussion Paper 27, Geneva, 2003. http://www.unece.org/timber/docs/dp/dp-27.pdf		

Title of future study:

Russian long-term economic trends: economic scenarios to 2020

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study, prepared by the Centre for Macroeconomic Analysis and Short-term Foresight in Moscow in 2005, presents four scenarios for the future of Russia's economy. The development of the scenarios is based on factors including governance, energy, technology and transport.

1.2 Summary of the scenarios

1. Super-Industrial Modernisation

Under this scenario, by 2012, exports of oil, machinery and agricultural products will considerably increase as a result of successful implementation of priority projects in energy, high tech and agricultural sectors. Investment boom. Stable rouble. Economic growth at 7 % a year. By 2016, a new pipeline network for oil and gas exports will be built. Technological modernization will be based on the 'digitalised' production, nanotechnology, clean production, and renewable energy. Modernisation of the health sector will help stop the spread of HIV. By 2020, Russia's economy will fully adapt to changes in the global economy in the areas of energy efficiency, biotechnology and IT. Per capita GDP will rise to USD 30 000 which is close to that of Germany and France. However, by 2020 economic growth may slow due to ageing and to achieving consumer standards similar to those in industrialised countries.

2. Burst into Globalisation

Large Russian corporations will be willing to become legitimate transnationals in the eyes of the leading industrialised countries. It is those companies who will be the main driving force behind the implementation of the priority projects in Russia. Many smaller Russian companies will also go to global markets. The role of the state will be reduced (minimization of social guarantees). Institutionally, most Russian economic institutions including financial institutions and prices for hydrocarbons will become unified with the western ones ('institutional transfer'). This will facilitate the inflow of direct investments. However, the results of this will be slow due to the increased pension burden. Tightened competition in domestic markets will prevent many companies from raising wages which will lead to the slowdown in growth of personal income. Further income differentiation is expected. By 2012, a devaluation of the rouble is expected that will cause problems with the implementation of priority projects. Rising social differentiation will lead to poverty in some regions and will contribute to the rise of 'social diseases' like drugs and HIV. As a result, economic growth by 2020 will slow considerably to 4 %. Although Russia will be able to realize its comparative advantages, the social polarization of society and negative demographic processes will greatly hamper its development. The per capita GDP rises to USD 25 000. Unlike European countries, the Russian middle class will not have a chance to develop.

3. Economic Isolation

Under this scenario, due to a number of factors, strategic programmes and priority projects will not be implemented. State social policy will be based on clearly defined social guarantees. The state will strengthen its share in large companies. The focus will be on the development of the domestic market and national projects. Russian business will get tax preferences. Reforms to ease administrative barriers for companies will be implemented. Overall, lack of modernisation will lead to an economic slowdown by 2012. By 2016, a substantial lag in technology development is expected. Delay in development of new oil and gas fields will lead to the exhaustion of existing oil and gas resources (by 2016). Russia's comparative advantages will not be realized. The per capita GDP will be USD 26 000 by 2020, i.e. almost the same as in the above scenario but the economy will be fraught with social conflicts and unrealized opportunities.

4. Energy Autism

Under this scenario, failure to implement priority projects will leave the country over-dependent on natural resource exports. High potential for social conflict, rise of popular protests. Increased taxes. Direct investments will fall. By 2012, a crisis of the health, pension and education systems is likely. By 2020, Russia is a stagnating country and a source of uncertainty.

Title of future study: Russian long-term economic trends: economic scenarios to 2020			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Two axes: • Realising Russia's 'comparative advantages' (in energy, research, transport and agricultural potential) • Modernisation of production	
	Number of scenarios	Four: 1. Super-Industrial Modernisation 2. Burst into Globalisation 3. Economic Isolation 4. Energy Autism	
	Thematic focus	Economy	
	Specific issue focus	None	
	Integration of environment/ society/economy	No: focus on economy	
	Policy targets	The broad policy goal appears to be economic development in Russia	
	Spatial scale	Russian Federation	
	Temporal scale	2020	
	Publication date/series	Published in 2005	
	Origins/derivation/ family	No information available	
	Research/policy/business	Research/Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No information found	
	Analytical/participative/both	No information available	
	Level of engagement	Expert-led study	
4. Purpose and application	**Objective of the study and target audience**	The study seeks to inform the development of long-term economic policies and strategies and is aimed at national policy makers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information on actual use	

Title of future study: Russian long-term economic trends: economic scenarios to 2020			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with some tables and graphs	
	Language	Russian	
	Access and cost	No information available	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Centre for Macroeconomic Analysis and Short-term Foresight, Moscow	
	Lead partner: developed by whom?	Centre for Macroeconomic Analysis and Short-term Foresight, Moscow	
8. References and contact information	Belousov A.R. *Long-term trends in Russian economy: Russia's economic scenarios to 2020.* Centre for Macroeconomic Analysis and Short-term Foresight, Moscow, 2005 Title in Russian: Белоусов А. Р. Долгосрочные тренды российской экономики. Сценарии экономического развития России до 2020 года. М.: Центр макроэкономическго анализа и краткосрочного прогнозирования, 2005. Available at: http://www.forecast.ru/_ARCHIVE/Analitics/ANCEA2005/Doklad.pdf		

Title of future study:
Russian prospects — political and economic scenarios

Descriptive icon

1. Summary

1.1 Summary of the forward looking study

This 2005 study by the Copenhagen Institute for Future Studies presents two sets of scenarios: scenarios for Russia's political future, and scenarios for Russia's economic future.

The political scenarios use the axes of (1) centralised vs. decentralised power and (2) autocracy vs. democracy to build four scenarios, whilst the economic scenarios use the axes of (1) market vs. planned economy and (2) raw material-based economy vs. differentiated production.

1.2 Summary of the scenarios

Political scenarios

- Return to Dictatorship: In 2020 Russia has a strong, central president; freedoms are limited; regions are weak
- Democratic Superpower: While the presidency is strong, so are legislative & judicial institutions; civil society is free and active; and Russia is a positive member of international institutions.
- Strong Regions: strong, separatist regional leaders have extensive powers; throughout the country, freedom and democracy are limited.
- Strong Federation: Power is decentralised to the regions, which are integrated in a cohesive country; open society and economy

Economic scenarios

- Free raw materials: Russia's economy is market-based economy that is focused on raw materials extraction, which dominates exports; large international and Russian companies control this sector; a small number of cities and regions enjoy most of the wealth; Russia is a member of WTO and has extensive trade relations with EU
- New economic superpower: Russia has a diverse and dynamic free market economy in 2020 that brings prosperity across the country; a strong middle class has taken shape; Russia is a member of WTO and has extensive trade relations with EU
- Second world: the government extensively plans and regulates an economy that is focused on raw materials; Russian companies dominate; a small number of cities and regions enjoy most wealth; Russia is not a member of WTO
- New soviet: Russia has a largely closed economy in 2020; trade is limited and Russia is not a member of WTO; some foreign investors manufacture and sell via joint ventures

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Four axes for two sets of scenarios (political and economic). The political scenarios use the axes of: 1. centralised vs. decentralised power 2. autocracy vs. democracy 3. The economic scenarios use: 4. market vs. planned economy and 5. raw material-based economy vs. differentiated production	

Title of future study: Russian prospects — political and economic scenarios			Descriptive icon
	Number of scenarios	Eight, of which four political scenarios: 1. Return to Dictatorship 2. Democratic Superpower 3. Strong Regions 4. Strong Federation And four economic scenarios: 5. Free Raw Materials 6. New Economic Superpower 7. Second World 8. New Soviet	
	Thematic focus	Economy; Politics	
	Specific issue focus	Russia's economic and political development	
	Integration of environment/ society/economy	No: little focus on environment	
	Policy targets	No targets or goals specified	
	Spatial scale	Russia	
	Temporal scale	2020	
	Publication date/series	Published in 2005	
	Origins/derivation/ family	No information available	
	Research/policy/business	Research/Business	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Some information is provided.	
	Analytical/participative/both	Apparently analytical: expert-led	
	Level of engagement	Apparently expert-led	
	Additional information on the methodology The study uses a qualitative approach, building axes around two sets of driving forces each for the political and economic scenarios		
4. Purpose and application	**Objective of the study and target audience**	It appears that the aim of the study is for companies to develop their strategies for Russia. The study is destined for the members of the Copenhagen Institute for Future Studies: these are mainly corporations operating in Denmark and other Scandinavian countries	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No specific information. The preface states that individual company profiles can be developed for each scenario	

Title of future study: Russian prospects — political and economic scenarios			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Presented in a 30 page report, mainly text with only a limited number of figures. The report is written clearly and highlights key study results	
	Language	English	
	Access and cost	Initially restricted to Institute members; may be available now to broader public	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Copenhagen Institute for Futures Studies, Denmark	
	Lead partner: developed by whom?	Copenhagen Institute for Futures Studies, Denmark	
	Types of other participating organisations: Research institute		
8. References and contact information	Copenhagen Institute of Futures Studies, *Russian Prospects: Political and Economic Scenarios* (Members Report 1/2005), Denmark, 2005 http://www.cifs.dk/doc/medlemsrapporter/mr2005_1_en_safe.pdf http://www.cifs.dk/scripts/artikel.asp?id=1232&lng=2		

Title of future study:

Russia's demographic perspectives to 2100

Descriptive icon

1. Summary

1.1 Summary of the study

This study is an academic paper prepared at the Academy of Sciences and published in 2004. It presents projections of demographic trends in Russia over the coming century.

1.2 Summary of the projections

Projections of Russia's demographic future are made based on future variations in

- birth rate (both aggregate birth rate and a mother's mean age at birth are the independent variables)
- mortality (life expectancy at birth for men and women and infant mortality rate)
- in and out-migration

These variables are used to develop six projections of Russia's demographic future (total population and age distribution).

The independent variables show great variability across the different projections:

- Aggregate birth rate: between 0.95 births per woman and 2.5 births per woman
- Mother's mean age at birth: between 25 years and 30.6 years by 2025
- Life expectancy at birth: between 57 years and 87 years for men; between 71.5 years and 95 years for women
- Infant mortality rate: between 1.7 and 0.4 per 1 000 newborns
- Total immigration to Russia: between 10 000 people and 210 000 people per year by 2050
- Total emigrants from Russia: between 10 000 people and 90 000 people by 2050

The median of the projections for Russia's population in 2100 lie between 63.6 million (low) and 144 million (high), compared with 145.6 million in 2000.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	Birth rate, mortality and migration	
	Number of scenarios	Six demographic projections	
	Thematic focus	Demography	
	Specific issue focus	Population in Russia	
	Integration of environment/ society/economy	No; environment and economics not considered	
	Policy targets	No targets or goals specified	
	Spatial scale	Russia	
	Temporal scale	2100	

Title of future study: Russia's demographic perspectives to 2100			Descriptive icon
	Publication date/series	Published in 2004	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information not found	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led, based on stochastic demographic models	
4. Purpose and application	**Objective of the study and target audience**	Mainly for an academic audience	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Storylines with the use of tables and charts	
	Language	Russian	
	Access and cost	No information available	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Academy of Sciences of the Russian Federation	
	Lead partner: developed by whom?	Demography and Human Ecology Centre, Academy of Sciences of the Russian Federation	
8. References and contact information	Andreev E.M. and A.G. Vishnevsky, *Demograficheskie perspektivy Rossii do 2100 goda [Russia's demographic perspectives to 2100],* In: Naselenie Rossii 2002. Moscow, Universitet, 2004, pp. 173–195. Title in Russian: Андреев Е. М., Вишневский А. Г. Демографические перспективы России до 2010 года //Население России 2002. М.: Университет, 2004, с. 173–195.		

Title of future study:

Transport strategy of the Russian Federation to 2030

Descriptive icon

1. Summary

1.1 Summary of the study

Work to develop the Russian government's national Transport Strategy, published in 2008, included the preparation of three scenarios for the sector's future.

In contrast to the previous Transport Strategy, the Transport Strategy to 2030 is notable for its overall consideration of environmental issues. Among its targets is the minimization of environmental impacts from transport. Regulatory instruments to promote alternative fuels and energy efficiency are proposed.

1.2 Summary of scenarios

1. Inertia: Business as usual.

The oil and gas sector remains dominant in the economy. Exploration and development slow down and hydrocarbons exports drop, with a resulting drop in price and technology competitiveness of the manufacturing sector and adverse socio-economic impacts, e.g. fall in population to 140 million in 2020 and 137 million in 2030. The focus of the transport sector under this scenario will be on the infrastructure development of export orientated oil & gas fields and sea ports. Road construction and reconstruction in the European and Asian parts of Russia will be insufficient. Transport fleet will not be modernised timely.

2. Energy and raw materials based development

Speedy exploration and development of new oil & gas fields increase hydrocarbons exports. Some social development is expected as new residential areas and roads will be built and employment will grow in some oil producing areas. But population mobility will be low due to low income and decreasing population.

2. Innovative

In addition to the oil and gas sector orientation of the previous scenario, sustainable development of transport sector will aim to improve quality of life, expand the role of public transport and generally boost innovation and human capital across Russia.

The innovative scenario is considered the most favourable one for Russia, and it is used in the development of the Transport Strategy.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative and quantitative	
	Axes/factors considered	Main factor: national economic development	
	Number of scenarios	Three • Inertia: business as usual • Energy and raw materials-based development • Innovative	
	Thematic focus	Transport	
	Specific issue focus	Transport infrastructure in Russia	
	Integration of environment/ society/economy	Some consideration of environmental issues	

Title of future study: Transport strategy of the Russian Federation to 2030			Descriptive icon
	Policy targets	Broad policy goal: modernisation of Russia's transport systems	
	Spatial scale	Russian Federation	
	Temporal scale	2030	
	Publication date/series	Published in 2008	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information not available	
	Analytical/participative/both	Apparently mainly analytical	
	Level of engagement	Apparently expert-led	
4. Purpose and application	**Objective of the study and target audience**	The aim of the study is to guide the national transport strategy, the target audience is policymakers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Scenarios used to help developed national Transport Strategy, approved by the Government in October 2008	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with tables, including statistics	
	Language	Russian	
	Access and cost	A Russian version available from the site of the Ministry of Transport (see below)	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Ministry of Transport of the Russian Federation	
	Lead partner: developed by whom?	Ministry of Transport of the Russian Federation	
8. References and contact information	Ministry of Transport of the Russian Federation. *Transport Strategy of the Russian Federation to 2030 [Transportnaya strategiya Rossiyskoy Federatsii na period do 2030 goda],* 2008 Title in Russian: Транспортная стратегия Российской Федерации на период до 2030 года, 2008/ http://www.mintrans.ru/pressa/doc/TransStrateg_22112008_1734_r.zip		

3.6 Caucasus studies

The Caucasus is comprised of Armenia, Azerbaijan and Georgia.

This area, together with eastern Europe and central Asia, was covered in the review carried out in 2006 and then updated in late 2008 by researchers engaged in EECCA countries. The 2006 review covered studies in English and Russian; the 2008 update also covered studies in other national languages.

Researchers were engaged in the region, and they identified studies via web searches, library research and contacts with officials and academics. While extensive research went into the preparation of this list, its results should not be considered exhaustive. In particular, it only covers publically available studies.

In total, the review and its update identified 11 forward-looking studies covering the Caucasus (the full list is provided in the Annex). Fact sheets were prepared for two studies that appeared particularly valuable for European environmental assessments:

	Study (and scenario titles where available)	**Organisation**	**Thematic focus**	**Geographical coverage**	**Time horizon**
35.	**Caucasus Environmental Outlook** • Status quo • Downfall • A Caucasus market world	UNEP (GRID-Tbilisi), 2002 (UNEP — http://www.grid.unep.ch/product/publication/CEO-for-Internet/CEO/index.htm)	Environment & Sustainability	Caucasus	2032
36.	**Armenia 2020 Scenarios Book** • From Russia with love • Coming home: Armenia and the EU • Dare to excel: survival to prosperity • Sentenced to 30 years with correspondence	Armenia 2020, 2004	Economy, politics, society	Armenia	2020

Title of future study:
Caucasus environmental outlook

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study, published by GRID-Tbilisi in 2002, assesses current trends and future prospects in the three countries of the Caucasus. The first three chapters of the report set the scene by providing an overview of the environment in the Caucasus since 1972. Among their topics, these chapters present the socio-economic driving forces influencing the environment. The fourth chapter presents three scenarios that are inspired by those in UNEP's GEO3 (see above). Thus, the Caucasus scenario 'Status quo' is roughly analogous to 'Policy First' in GEO-3, 'Market world' is similar to 'Markets First' in GEO-3 and 'Downfall' is linked to 'Security First'. (The GEO3 'sustainability first' scenario was considered not applicable — i.e. not achievable).

1.2 Summary of the scenarios

1. Status quo

The region achieves peace and stability. Economic development is relatively slow, with a period of rapid growth punctuated by crises. Economic integration proceeds slowly. On the other hand, the region becomes an important transportation corridor between central Asia and western Europe, leading to environmental pressures. Environmental issues will have low priority, due to insufficient resources, corruption and low environmental awareness. Urban infrastructure will deteriorate, and access to safe drinking water will become a widening problem due to deteriorating services. Deforestation in mountain areas will threaten erosion as well as disaster risks (mudslides, etc.). Agriculture will decline, in part due to deteriorating irrigation systems as well as managerial problems. The later will only be solved towards the end of the period, as modern agricultural technology and management become more widespread.

2. Downfall

A combination of internal factors (economic stagnation) and external ones (global anti-terrorism wars) will bring chaos to the Caucasus. Government structures break down, warlords rule large rural areas, foreign donors and investors leave. Rural areas become depopulated. While some agricultural areas start to revert to nature, many forests are cut down for fuel. The oil and gas pipelines that cross the region are increasingly subject to terrorist attack as well as to local attempts to steal their contents: both result in widespread contamination. Basic services, such as waste management and drinking water treatment, break down.

3. A Caucasus market world

The region has undergone democratic transformation. This is part of a wider movement to democracy and free markets, as the Russian Federation joins NATO and plans to join the EU as well. Agricultural and market reforms turn the region into a major supplier of EU markets. Democratic governments curb corrupt bureaucracies and attract foreign investors. The reforms lead, however, to increasing environmental pressures, in particular from transport, mining and the revival of old industries. Only after 2020 do governments in the region seriously tackle environmental issues. These efforts help to revived industry, protecting coasts for rising Black Sea tourism and natural mountain areas for ecotourism.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Market reforms + regional conflict	
	Number of scenarios	Three • Status quo • Downfall • A Caucasus market world	

Title of future study: Caucasus environmental outlook			Descriptive icon
	Thematic focus	Environment and sustainability	
	Specific issue focus	No information available	
	Integration of environment/ society/economy	The three pillars are closely integrated	
	Policy targets	Broad policy goals: environmental sustainability of the region; overcoming conflict	
	Spatial scale	Armenia, Azerbaijan, Georgia and the Caucasus regions of the Russian Federation	
	Temporal scale	2032	
	Publication date/series	Finished in 2002	
	Origins/derivation/family	Scenarios use GEO3 scenarios as a starting point	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Little information is provided in report	
	Analytical/participative/both	Participative	
	Level of engagement	The scenarios were developed through a participatory process that involved NGOs and research organisations from the region as well as international organisations	
4. Purpose and application	**Objective of the study and target audience**	The report seeks to start a process for 'improved and regular assessment and monitoring activities within the entire Caucasus region, as well as substantive measures for the region's overall environmental protection and rehabilitation' Based on the above, it appears to be addressed to regional policy makers as well as international organisations and donors	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information on use of the study	

Title of future study: Caucasus environmental outlook			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	The background chapters (1 to 3) include charts, tables and illustrations. The scenarios, however, only have text descriptions	
	Language	English	
	Access and cost	Full report available on the UNEP GRID website (see below)	Free
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	UNEP: Division of Early Warning and Assessment (DEWA) Europe office and Regional Office for Europe (ROE)	
	Lead partner: developed by whom?	GRID-Tbilisi	INT. ORG
	Types of other participating organisations: GRID-Moscow, Russia, Ministry of Environment, Georgia, Ministry of Nature Protection, Armenia, Nature Protection Society, Azerbaijan		
8. References and contact information	UNEP/GRID Tbilisi, *Caucasus Environment Outlook,* 2002. http://www.grid.unep.ch/product/publication/CEO-for-Internet/CEO/index.htm		

Title of future study:
Armenia 2020 scenarios book

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The Armenia 2020 Scenarios Book was published in 2004 by the Armenia 2020 Project, an organised network of individuals committed to building a better future for Armenia. The scenario book explores four different scenarios that could evolve in the next twenty years in Armenia, based on research and discussion with thousands of Armenians in the country and around the world, with the aim of stimulating debate and broader discussions among Armeniens to design their own shared vision for Armenia's future.

1.2 Summary of the scenarios

1. From Russia with Love

This scenario is based on the assumption of a joint evolution of Russia and Armenia correlated with global international processes and the evolution of elite groups (both in Armenia and in the Diaspora). It includes 2 key stages: a crisis and its solution. The first stage (2004–2009) sees dilemmas between: a military national development strategy ('Gendarme of Transcaucasia' scenario) vs. transition to criminal forms of traditional agrarian economy ('Sea and Mountains' scenario); and then between the military elite in Armenia and the liberal business elite in the Armenian Diaspora. Armenia is influenced by the conflict in Russia between elites promoting natural resources and those seeking innovative development. In the second stage (2010–2020), Armenia becomes a 'Russian offshore' entity. Nonetheless, some Diaspora representatives invest in the country. Armenia becomes a 'business card' of the Russian post-industrial project.

2. Coming Home: Armenia and the European Union

The scenario examines a simple question: should Armenia seek to become a member of the European Union? This discussion is linked to the consideration of economic prospects in the region (Caucasus and neighbouring countries) and its geo-political outlook. Joining the EU is seen as a way to create opportunities for economic development and ensure geo-political stability. However, the big challenge for Armenia is meeting the requirements for joining EU.

3. Dare to Excel: Survival to Prosperity

This scenario sees the adoption and implementation of an ambitious national economic development program with three phases: 1) new partnership for growth with a productivity focus, pilot industry clusters (IT and tourism), tax reforms, public sector reforms; 2) Rapid development of industrial clusters, FDI, regional trade with the Middle East and eastern Europe, government downsizing/ retraining, anti-corruption strategy and educational reform; and 3) Globalizing nation: focus on social issues, regional coordination and development, export promotion. Armenia turns into a prosperous and competitive nation.

4. Sentenced to 30 Years with Correspondence

This scenario suggests changes in the geopolitical situation in the region, with Russia losing its influence to the US. Democratic principles do not find acceptance in Armenia: the country fails to elect a democratic Government and lacks an economic development policy. Armenia is governed by military elite and becomes politically and economically isolated.

Title of future study: Armenia 2020 scenarios book			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative/narrative approach, but uses some quantitative data, analysis and projections	
	Axes/factors considered	Several (see Methodology below)	
	Number of scenarios	Four • From Russia with love • Coming home: Armenia and the European Union • Dare to Excel: survival to prosperity • Sentenced to 30 years with correspondence	
	Thematic focus	Economy; Politics; Society	
	Specific issue focus	Political, social and economic development	
	Integration of environment/ society/economy	Focuses on society and economy; less attention to environment	
	Policy targets	Broad policy goal: building a better future for Armenia; Armenia becomes a prosperous and competitive nation	
	Spatial scale	Armenia (discussed in the regional and global context)	
	Temporal scale	2003–2020	
	Publication date/series	Completed in 2004	
	Origins/derivation/family	No information available	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological Transparency	Very brief information in publication; somewhat more on project web site	
	Analytical/participative/both	Both	

Title of future study: Armenia 2020 scenarios book			Descriptive icon
	Level of engagement	The study is based on an approach combining expert assessment with stakeholder consultation. The four scenarios emerged from a lengthy process of research, discussion and synthesis involving thousands of Armenians around the world: politicians, business people, academics, researchers, diaspora representatives, foreign experts, companies and others	
4. Purpose and application	**Objective of the study and target audience**	The aim of the study is to stimulate research, study, policy proposals and decisions, as well as to inform the public of possible future paths for Armenia's development and their implications, highlight the need for proactive planning and consistent policy implementation, inform research in specific issues, generate ideas for policy making. The target audience includes scientific and research institutions, higher educational institutions and policy makers	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	The study helped to establish Armenia's Competition Council in November 2007; it also stimulated the preparation of policy papers on the development of IT, tourism and other key industries, on private-public partnerships and on changes in tax legislation	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Narrative and text with tables, charts and diagrams. The research on the basis of which the scenarios book is developed is provided in a separate publication: *Armenia: Studies, Reports and Analyses*	
	Language	English, Armenian, Russian, summaries and full text	
	Access and cost	Results accessible to registered users, registration free	
6. Evaluation	**Any evaluation of its use?**	No information available	
7. Organisations involved	**Initiator**	Armenia 2020 Project Management Board	
	Lead partner: developed by whom?	Armenia 2020 Project	
	Types of other participating organisations: Ameria; Armenian-European Policy and Legal Advice Centre; Troika Dialog		
8. References and contact information	Armenia 2020 Project, *Armenia 2020 Scenarios Book,* Yeravan, 2004		

3.7 Central Asia studies

Central Asia is comprised of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

This area, together with the Caucasus and eastern Europe, was covered in the first review carried out in 2006 and then updated in late 2008 by researchers engaged in EECCA countries. The 2006 review covered studies in English and Russian; the 2008 update also searched for studies in other national languages.

A researcher in the region identified studies via web searches, library research and contacts with officials and academics. While extensive research went into the preparation of this list, its results should not be considered exhaustive. In particular, it only covers publically available studies.

A total of 25 forward-looking studies were identified covering central Asia (the full list is provided in the Annex). Fact sheets were prepared for the eight following studies and are presented in this section:

	Study (and scenario titles where available)	**Organisation**	**Thematic focus**	**Geographical coverage**	**Time horizon**
37.	**Central Asian Integration: Myth or Reality?** • Grand central Asia • Intra-regional integration • Cross-border consortia	Nur Omarov, 2007 (Institute for Public Policy, Bishkek)	Politics; economy	Central Asia	2025
38.	**The central Asian States in the Era of Globalisation: Searching for Development Strategies** • Pax Americana • Anti-crisis strategy • Drifting islands	Nur Omarov, 2008 (Friedrich Ebert Stiftung http://www.fes.uz/Publications/p2008.htm)	Politics; economy	Central Asia	2025
39.	**Strengthening Co-operation for Rational and Efficient Use of Water and Energy Resources in central Asia** • Business as usual • Natural gas • Hydro-coal • Energy efficiency	UNECE/UNESCAP, 2004 (UNECE — http://www.unece.org/; UNESCAP — http://www.unescap.org/	Energy; water	Central Asia	2020
40.	**Water-related Vision for the Aral Sea Basin for the year 2025** • A future without change • Priority for agricultural and rural development. • Emphasis on industry and services.	UNESCO, 2000 (UNESCO — http://www.unesco.org/)	Water	Aral Sea basin: central Asia	2025
41.	**Kazakhstan's Strategic Matrix: Retrospective, Modern Times and Scenarios of Future Development** • Eurasian Integration • Flexible Balance • Growing Influence of China • Euro Atlantic Choice	Ageev A.I. and Kuroedov B.V., 2005 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Politics; economy	Kazakhstan	2030
42.	**Programme of Energy Development till 2030 — scenarios** • Three scenarios: minimum, maximum and optimal energy sector development	Ministry of Energy of Kazakhstan, 2007	Energy	Kazakhstan	2030

	Study (and scenario titles where available)	Organisation	Thematic focus	Geographical coverage	Time horizon
43.	**Kyrgyzstan's Strategic Matrix: Retrospective, Modern Times and Scenarios of Future Developmen** • Flexible Course • Growing Influence of Kazakhstan: • Eurasian Integration: • Growing Influence of China • Euro Atlantic Choice	Bayshuakov A.B., editor, 2007 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Politics; economy	Kyrgyzstan	2020
44.	**Kyrgyzstan 2025. Strategies and Development Scenarios.** • Russia's periphery • Country-gate • Military ground • Great Game	M.N. Omarov, editor, 2005 (International Institute for Strategic Studies under President of the Kyrgyz Republic; the Friedrich Ebert Foundation — http://www.fes.uz/Country/kg.htm)	Economy	Kyrgyzstan	2020, 2025

Title of future study:

Central Asian integration: myth or reality?

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This article, written by a professor of the Slavonic University (Nur Omarov) for the Institute for Public Policy and published in 2007, explores the issue of integration among the countries of central Asia, the obstacles to integration and factors which shape this process, and it presents 3 possible scenarios for the integration process in central Asia. The comparative analysis of these three scenarios takes into account the experience of integration in western Europe and in Southeast Asia.

1.2 Summary of the scenarios

1. Grand central Asia

Under the first scenario, external forces 'absorb' the region. The outlines of such a result are seen in a project for 'Grand central Asia', initiated by the United States. If the region becomes a satellite of American foreign policy and interests, this would lead to conflict with Russia and China.

2. Intra-regional integration

This scenario sees the creation of a network of bilateral agreements within the region, which, over time, may be transferred to the level of regional integration. This scenario of integration can be expressed in a 'network model of intra-regional integration' that extends current initiatives by Kazakhstan.

3. Cross-border consortia

This scenario is based on a 'compensation' model of economic relations, where the growing cost of water use by the 'countries upstream' is fully compensated by energy supply in the form of oil and gas from the 'countries downstream'. The third scenario, appealing to the experience of integration of the EU, sees the establishment of specialized cross-border consortia, with equal representation of countries in the region, to mutually exploit the most important resources of the region.

The comparative analysis of these scenarios concludes that the most successful approach would be the pursuit of economic rather than political projects for cooperation, as these provide mutual benefits to all participants.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory, though the third scenario in particular appears to be a 'desired' outcome	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Internal and external political alliances in central Asia	
	Number of scenarios	Three: 1. Grand central Asia 2. Intra-regional integration 3. Cross-border consortia	
	Thematic focus	Economy; Politics	

Title of future study: Central Asian integration: myth or reality?			Descriptive icon
	Specific issue focus	Transboundary cooperation	
	Integration of environment/ society/economy	Focus on economy	
	Policy targets	Broad policy goal: improved regional integration	
	Spatial scale	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan	
	Temporal scale	2025	
	Publication date/series	Published in 2007	
	Origins/derivation/family	No information available, though the author also prepared a similar study on 'The central Asian State in the Era of Globalisation' (see separate description in this Catalogue)	
	Research/policy/business	Research	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No information found	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Scenario analysis based on expert opinion and the analytical assessments of a number of scientific centres	
4. Purpose and application	**Objective of the study and target audience**	The study is intended for analytical work and is targeted at experts and analytical centres	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	By experts and analytical centres central Asian development and security at the regional and national levels	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Narrative only	
	Language	English and Russian	
	Access and cost	Full article available for free on the Institute website	
6. Evaluation	**Any evaluation of its use?**	No information available	

Title of future study: Central Asian integration: myth or reality?			**Descriptive icon**
7. Organisations involved	**Initiator**	Institute for Public Policy, Bishkek, Kyrgyzstan	
	Lead partner: developed by whom?	Mr Nur Omarov, PhD in History, Professor of Kyrgyz-Russian Slavonic University, Kyrgyzstan	
	Types of other participating organisations: University; research institute		
8. References and contact information	Nur Omayev, *Central Asian Integration: Myth or Reality?,* 2007 This study is available from the web site of the Institute for Public Policy in Kyrgyzstan: http://www.ipp.kg/en/analysis/717/		

Title of future study:

The central Asian states in the era of globalisation: searching for development strategies

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This 2008 study was supported by the Friedrich Ebert Foundation in Germany and prepared at the Kyrgyz-Russian Slavonic University. It focuses on issues pertaining to integration among the countries of central Asia, including security issues as well as economic development, and it develops long term scenarios for central Asian countries up to 2025.

1.2 Summary of the scenarios

The study presents three scenarios.

1. Pax Americana

US leadership in central Asia. The US remains the dominant economic and military power. The EU and Russia are not very active in the region. Central Asian's development is constrained and is focused on its resource base.

2. Anti-crisis strategy

Common regional strategy, coordinated by developed countries (USA, EU, Japan). Central Asian countries have better opportunity for development.

3. Drifting islands

Disintegration of central Asia, permanent local and regional conflicts. Different parts of central Asia fall under control of Russia, China, Iran, USA. Freedom and democracy are limited.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Internal and external political alliances and developments in central Asia	
	Number of scenarios	Three: 1. Pax Americana 2. Anti-crisis strategy 3. Drifting islands	
	Thematic focus	Politics; economy	
	Specific issue focus	Integration of central Asia, security issues, economic development	
	Integration of environment/ society/economy	Some level of integration of the three pillars (especially natural resources)	
	Policy targets	No targets or goals specified	
	Spatial scale	Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan	
	Temporal scale	2025	

Title of future study: The central Asian states in the era of globalisation: searching for development strategies			**Descriptive icon**
	Publication date/series	Published in 2008	
	Origins/derivation/family	No information available, though the author also prepared the similar work on 'Central Asian Integration: Myth or Reality' (also described in this Catalogue)	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information not available	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert assessment only	
	Additional information on the methodology The scenarios were prepared via an expert assessment of policies in central Asia and of the roles and interests of the large powers: USA, EU, Russia, China		
4. Purpose and application	**Objective of the study and target audience**	The study is intended to encourage long-term policy discussions and formulation. It is aimed at international organisations, scientists, local and international analytical centres	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	To develop long-term policy at the national, regional and international levels Information not available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text/graphs/tables	
	Language	Russian	
	Access and cost	Full report available from the Friedrich Ebert Foundation website for free	
6. Evaluation	**Any evaluation of its use?**	Information not available	
7. Organisations involved	**Initiator**	Friedrich Ebert Foundation and Kyrgyz-Russian Slavonic University (Prof Nur Omarov)	
	Lead partner: developed by whom?	Kyrgyz-Russian Slavonic University	
8. References and contact information	Nur Omarov, *The Central Asian States in the Era of Globalisation: Searching for Development Strategies,* 2008 The Russian version is available from the website of the Friedrich Ebert Foundation (Germany)		

Title of future study:

Strengthening cooperation for rational and efficient use of water and energy resources in central Asia

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This 2005 study by UNECE presents separate diagnostic reports on water and energy resources in central Asia, together with a 'Cooperation Strategy for the Rational and Efficient Use of Water and Energy Resources' in this region. The energy section contains a set of forecasts regarding economic development, consumption and production of fuel and energy and the funding that would be available for each branch of the fuel/energy sector. Each scenario considers interactions between the economy and energy sector comprising energy consumption forecasts and the initial version of the total energy mix for each individual country, linking estimated energy demand to the potential of its production.

1.2 Summary of the scenarios

1. Business as usual

The baseline scenario assumes current trends of world economic development and that of CA will continue, with lack of stability in world energy prices and high investment risks in CA. In economic terms, CA and the entire EECCA remain loosely organised entities, economic conflicts between states continue unabated, while their allegiance to world power centres is unstable. Threats to the national and economic security of the region persist. Implementation of reforms in the energy sector is uneven.

2.Natural gas

The scenario assumes stable development of the world's and CA's economy. The anticipated increase in global demand for hydrocarbons would be accompanied by fairly high and stable prices of energy resources. CA oil and gas producing countries would receive an influx of foreign investment for the fuel and energy sector. Russia would emerge as an economically and politically stronger power and would prevail in its active efforts to promote further economic and political integration of EECCA, to stabilise the political situation in the region and on its borders, especially in the south. High rates of economic growth are assumed. Hydrocarbon exports rise. Governments pursue resource-saving programmes for more efficient use of water and energy, and seek to protect the region's environment.

3. Hydro-coal

This scenario assumes low foreign demand for CA oil/gas, and thus reduced foreign investment in the region's energy sector. Major industrial countries and Russia show little interest in the region. Meanwhile, the CA economic space would vigorously take shape and regional energy markets would emerge. Regional economies develop at a moderate rate and seek fuel and energy co-operation, weakening their focus on export projects. Programmes promoting energy conservation and the use of local energy (coal and sometimes hydropower) would be pursued at fairly high rates.

4. Energy efficiency

The scenarios assume that the region's economies give priority to the efficient use of energy. CA will see rapid economic growth accompanied by structural reforms: growth of the services sector, increase in energy efficient industrial production, and technological improvements in industry, agriculture, transport and municipal services. Growing competition in all economic sectors, including fuel and energy, would raise the efficiency of the power industry. Demand for energy-efficient technologies will grow as consumers will seek to reduce their spending on fuel.

Main outcomes

The scenarios all foresee strong economic growth in central Asia, with regional GDP increasing by 2 to 3.2 times between 2000 and 2020, depending on the scenario. Living standards will steadily increase and by 2010 will reach their pre-crisis level. Energy intensity of the countries' GDP will improve. The structure of domestic primary energy consumption would undergo major transformations, with natural gas expected to play an increasingly important role in the energy mix.

Title of future study: Strengthening cooperation for rational and efficient use of water and energy resources in central Asia			Descriptive icon
2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Combination of qualitative and quantitative	
	Axes/factors considered	Essentially one: energy policy choices	
	Number of scenarios	Four: 1. Business as usual 2. Natural gas 3. Hydro-coal 4. Energy efficiency	
	Thematic focus	Energy; water	 
	Specific issue focus	Energy policies	
	Integration of environment/ society/economy	Focus on economy (and to a lesser extent, natural resources)	
	Policy targets	Broad policy goal: to develop a coordinated regional policy for water and energy in central Asia	
	Spatial scale	Central Asia	
	Temporal scale	2020	
	Publication date/series	Published in April 2005	
	Origins/derification/family	Originated in the methodology used in Russia's Energy Strategy and in EC forecasts	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Some information is provided	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Expert-led, based on indicators such as GDP per capita, energy consumption levels and energy mixes	
	Additional information on the methodology Central Asia simulation model was used to develop energy scenarios		

Title of future study: Strengthening cooperation for rational and efficient use of water and energy resources in central Asia			Descriptive icon
4. Purpose and application	**Objective of the study and target audience**	The report is intended to support collaboration on energy and water resources management in central Asia. The target audience is UNECE countries, and in particular the central Asian republics	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	The report and its strategy are being used by UNECE as background for their work on water in the region. It is not clear if the energy side (including the scenarios) has been used	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Brief narrative presentation of scenarios. Quantitative results are not clearly presented	
	Language	English	
	Access and cost	Full report available on ESCAP website	Free
6. Evaluation	**Any evaluation of its use?**	According to one UNECE expert, the political situation in central Asia has not allowed for significant progress on the important issues that were identified in the study	
7. Organisations involved	**Initiator**	United Nations Economic and Social Commission for Europe	
	Lead partner: developed by whom?	Environment and Sustainable Development Division (ESDD), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), UN	INT. ORG
8. References and contact information	UNECE, *Strengthening Co-operation for Rational and Efficient Use of Water and Energy Resources in Central Asia,* United Nations, New-York, 2004. http://www.unescap.org/publications/detail.asp?id=1057 http://www.unescap.org/esd/energy/publications/effuse/effuse_en.pdf		

Title of future study:

Water-related vision for the Aral Sea Basin for the year 2025

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This report, published by UNESCO in 2000, presents three scenarios for the future of the Aral Sea Basin. One of the basic principles of the project and the report is to point to a positive future for this region.

In the 'vision', there will be up to 70 million inhabitants in central Asia, up to 60 million in the Aral Sea basin, and improved productivity of water use in agriculture assures sufficient food production, as well as the continuation of cotton production. There will be sufficient water to maintain wetlands in the deltas of the Syr and Amu Darya, though not enough to restore the Aral Sea, which may remain as two separate (saline) lakes. Scenario development is brief and was used only to 'test the realism' of the vision itself.

1.2 Summary of the scenarios

1. A future without change

Under this scenario, the economy, infrastructure, the budgets, and the attitudes of the people in the region do not change. Agricultural, hydrological and ecological research are not systematically supported; there will be little or no money for investments in the agricultural sector, in particular to combat salinization of the soil. The study states that without change, the region will face difficulties in producing sufficient food with its water resources. There is no substantial growth in industry, and thus no increase in industrial pollution.

2. Priority for agricultural and rural development

In this scenario, priority is given to agricultural development, applied research in agriculture, hydrology and hydrogeology, water management and the social sciences. Investments for improving drainage and minimizing losses in the transport and distribution of water and the application in the field are made. Under this scenario the growth in productivity is the highest.

3. Emphasis on industry and services

This scenario sees only a modest increase in agricultural productivity. However, industrial growth (based on government investment in infrastructure and education) would improve livelihoods and also allow imports of food.

2. Description/ characteristics of future study	**Exploratory/normative**	Normative	
	Qualitative/quantitative	Combination of qualitative and quantitative	
	Axes/factors considered	Economic development: agriculture vs. industry	
	Number of scenarios	Three: 1. A future without change 2. Priority for agricultural and rural development. 3. Emphasis on industry and services.	
	Thematic focus	Natural environment, socio-economic, energy, agriculture, demography	
	Specific issue focus	Water	

Title of future study: Water-related vision for the Aral Sea Basin for the year 2025			Descriptive icon
	Integration of environment/ society/economy	The three elements are integrated	
	Policy targets	Broad policy goal: ensuring water for health, food, the environment, the creation of wealth, energy production and peace in central Asia	
	Spatial scale	Aral Sea Basin: central Asia, Afghanistan, Iran	
	Temporal scale	2025	
	Publication date/series	Completed in 2000	
	Origins/derivation/family	Originated in the document VISION 21 — A shared vision for water supply, sanitation and health and a framework for future action (Stockholm, 1999)	
	Research/policy/business	Research/policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Yes, some information is provided in the report	
	Analytical/participative/both	Research and analysis	
	Level of engagement	A Scientific Advisory Board for the Aral Sea Basin (SABAS) set up by UNESCO drafted the Vision and discussed it with national groups	
	Additional information on the methodology Globesight scenario analysis software (from Case Western Reserve University in Cleveland, Ohio, USA) was used. Based on that model, two regional Aral Sea Basin models, Irina and Gundo were developed and tested		
4. Purpose and application	**Objective of the study and target audience**	The study is intended for policy makers in the region	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	According to the introduction of the study, governments in the region asked UNESCO to provide advice on the Aral Sea crisis	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Storylines with the use of tables	
	Language	English, Russian	
	Access and cost	Report available for free on the Aralvision website	

Title of future study: Water-related vision for the Aral Sea Basin for the year 2025			Descriptive icon
6. Evaluation	**Any evaluation of its use?**	The study was criticised by IUCN and Medecins Sans Frontières for not giving enough attention to financial realities, to the problems of cotton monoculture, to the environmental situation or to sustainability	
7. Organisations involved	**Initiator**	UNESCO	
	Lead partner: developed by whom?	UNESCO	INT. ORG
	Types of other participating organisations: International organisation.		
8. References and contact information	UNESCO, *Water-related Vision for the Aral Sea Basin for the year 2025,* Paris, 2000. http://www.aralvision.unesco.kz/ch_9_e.htm#F http://www.aralvision.unesco.kz/main_e.htm		

Title of future study:

Kazakhstan's strategic matrix: retrospective, modern times and scenarios of future development

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study presents four political and economic scenarios for Kazakhstan's future. It was published in 2006 by the Institute for Economic Strategies — central Asia (Almaty, Kazakhstan), and is part of the series of matrix studies prepared by the Institute's Moscow office. All the studies in the series use the same nine factors in the analysis of future prospects. It is intended to help decision-makers and strategic planners develop long term economic strategies.

1.2 Summary of the scenarios

1. Eurasian Integration

This scenario depicts close integration with post-Soviet countries through EurAsEc, Collective Security Treaty Organisation, etc. Strong regional market. Environmental issues are addressed and sustainable development strategies are implemented. The problem of drinking water supply will be partially solved. The state will establish rigid control over resource extraction.

2. Flexible Balance

This scenario envisages building relationships with all key players and centres of influence in central Asia, including China, Russia, US and EC. State control of resource extraction; compliance with environmental standards. However, Kazakhstan's potential will not be sufficient to ensure transition to sustainable development or dramatically change trade strategies. As a result, low per capita GDP is expected.

3. Growing Influence of China

Under this scenario, Kazakhstan will become China's raw materials base. Weakened state control over resource extraction. No new processing companies or high tech sector. China continues to disregard environmental standards, especially in other countries.

4. Euro Atlantic Choice

Under this scenario, emphasis is on raw materials exports. Relatively extensive international trade operations. Some attention is given to the environment. Oil & gas companies in full control of the sector. Environmental regulations are neglected.

The country's population growth is projected to grow to 2030 under all scenarios (in addition, increased in-migration from China is expected under Growing Influence of China scenario).

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory (though the first scenario, Eurasian Integration, appears to be the 'desired' one)	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Nine factors: 1. Governance 2. Territory 3. Natural resources 4. Population 5. Economy 6. Culture and religion 7. Science and education 8. Armed forces 9. Foreign policy	

Title of future study: Kazakhstan's strategic matrix: retrospective, modern times and scenarios of future development			Descriptive icon
	Number of scenarios	Four: 1. Eurasian integration 2. Flexible balance 3. Growing influence of China 4. Euro Atlantic Choice	
	Thematic focus	Politics; economy	
	Specific issue focus	Natural resources	
	Integration of environment/ society/economy	Integration of socio-economic factors as well as environmental ones	
	Policy targets	No targets or goals specified, though integration with Russia appears to be a policy goal	
	Spatial scale	Kazakhstan	
	Temporal scale	2030	
	Publication date/series	Published in 2006	
	Origins/derivation/family	Based on the multi-factor model developed by Kuzyk and used in other studies by the Institute for Economic Strategies in Moscow (some of the other matrix studies are presented in this Catalogue). Note that this study shares four scenarios with the matrix study for Kyrgyzstan	
	Research/policy/business	Research/Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Some description is provided	
	Analytical/participative/both	Appears to be a solely analytical approach	
	Level of engagement	No information available	
4. Purpose and application	**Objective of the study and target audience**	The study seems aimed at the development of long-term economic strategies, and targets decision-makers and strategic planners	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	

Title of future study: Kazakhstan's strategic matrix: retrospective, modern times and scenarios of future development			Descriptive icon
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with photos, graphs and figures	
	Language	Russian	
	Access and cost	Hard cover book of 320p. Second edition. 1 000 copies printed	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Institute for Economic Strategies — central Asia, Almaty	
	Lead partner: developed by whom?	Institute for Economic Strategies — central Asia, Almaty	
	Types of other participating organisations: Institute for Economic Strategies, Moscow		
8. References and contact information	Ageyev A.I., Bayshuakov A.B. and B.V. Kuroyedov, *Kazakhstan's Strategic Matrix: Retrospective, Modern Time and Scenarios of Future Development [Strategicheskaya matritsa Kazakhstana: retrospektiva, sovremennost' i stsenarii buduschego razvitiya],* Institute for Economic Strategies — central Asia, Moscow, 2006 Title in Russian: Агеев А. И., Байшуаков А. Б., Куроедов Б. В. Стратегическая матрица Казахстана: ретроспектива, современность и сценарии будущего развития. М.: Институт экономических стратегий — Центральная Азия, 2006 The Institute's webpage: http://www.inesnet.ru/		

Title of future study:

Programme of energy development to 2030 (Kazakhstan) — scenarios

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

The National Energy Strategy is a government document prepared for the development of the sector. It identifies the main priorities for the energy sector including to obtain energy independence and to develop a competitive market for electricity. As part of the programme, a study with three possible scenarios for the country's energy sector was prepared. The scenarios assess long-term (2030) economic and technology prospects for the country using forecasts made by national scientific organisations (e.g. Kazakh Research Institute of Energy) and national and international experts.

1.2 Summary of the scenarios

The scenarios focus on the situation in the energy sector, and take into account social aspects (population growth, education), technical and financial issues (technology, innovation, investment.

1. Minimum

Under this scenario, national energy consumption grows to reach 90 billion kWh per year (from the current level of about 70 billion kWh). The scenario assumes on low economic development in the period to 2030, and insufficient investments in the energy sector.

2. Maximum

Under this scenario, national energy consumption grows to reach 115 billion kWh per year in 2030. This scenario assumes fast economic growth and improvements in the quality of life, as well as new energy technologies and investments (new and refurbished power plants and other investments).

3. Optimal

Under this scenario, energy consumption grows to reach 130 billion kWh, supported by medium economic growth and socially oriented economic development.

2. Description/ characteristics of future study	**Exploratory/normative**	Normative	
	Qualitative/quantitative	Quantitative	
	Axes/factors considered	The main factor is the country's economic development	
	Number of scenarios	Three: 1. Minimum 2. Maximum 3. Optimal	
	Thematic focus	Energy	
	Specific issue focus	Energy production, energy consumption, investments, renewable energy	
	Integration of environment/ society/economy	Main focus is on economy; some integration of the three pillars	
	Policy targets	Broad policy goals appear to include economic growth and growth of the energy sector	
	Spatial scale	Kazakhstan	

Title of future study: Programme of energy development to 2030 (Kazakhstan) — scenarios			Descriptive icon
	Temporal scale	2030	
	Publication date/series	Published in 2007	
	Origins/derivation/family	No information available	
	Research/policy/business	Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No information available	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Apparently expert led	
4. Purpose and application	**Objective of the study and target audience**	The scenarios were used in the preparation of the national energy programme, a government document, and related legislative documents	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	Ministry of Energy and Natural Resources and the government of Kazakhstan: the Energy Strategy was approved by the Government of Kazakhstan	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text, tables, charts	
	Language	Russian and Kazakh	
	Access and cost	The Russian and Kazakh versions are available from the site of the Ministry of Energy and Natural Resources of Kazakhstan	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Ministry of Energy and Natural Resources of Kazakhstan	
	Lead partner: developed by whom?	Ministry of Energy and Natural Resources of Kazakhstan	
	Types of other participating organisations: Kazakh Research Institute of Energy and national and international experts		
8. References and contact information	Government of Kazakhstan, *Programme of energy development till 2030,* 2007. http://www.climate.kz/eng/?m=html&cid=19		

Title of future study:

Kyrgyzstan's strategic matrix: retrospective, modern times and scenarios of future development

Descriptive icon

1. Summary

1.1 Summary of the forward-looking study

This study was prepared by the Institute for Economic Strategies — central Asia (in Almaty, Kazakhstan) using the strategic matrix model developed by the Institute's Moscow office. All the studies in the series use the same nine factors in the analysis of future prospects. This study presents five scenarios of Kyrgyzstan's political and economic future. It is intended to help decision-makers and strategic planners develop long-term economic strategies.

1.2 Summary of the scenarios

1. Flexible Course

This scenario depicts a multi-vector independent foreign policy. Unlikely for Kyrgyzstan in view of its weak economy and small population.

2. Growing Influence of Kazakhstan

This scenario presents a growing economic and political dependence on Kazakhstan. Considered not likely, given Kazakhstan's minor influence on a global scale.

3. Eurasian Integration

This scenario depicts a strengthening of economic and political ties between central Asian countries. Considered one of the most favourable scenarios since it allows Kyrgyzstan to become a member of a large regional supranational state.

4. Growing Influence of China

This scenario envisages a growing economic and political dependence on China. Considered very likely scenario

5. Euro Atlantic Choice

This scenario envisages closer ties with EU/US and WTO. Seen as seemingly attractive but unfavourable since weak economies like Kyrgyzstan easily become peripheral in the globalised liberal economy.

The natural resources factor is rated relatively important in all scenarios, considering Kyrgyzstan's 'good environmental balance', presence of large 'recreational' areas and considerable water resources critical for all of central Asia. In all scenarios, Kyrgyzstan's current economic development trends are not expected to change much. The population continues to see high out-migration.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	EXPL
	Qualitative/quantitative	Qualitative	Abc
	Axes/factors considered	Nine factors: 1. Governance 2. Territory 3. Natural resources 4. Population 5. Economy 6. Culture and religion 7. Science and education 8. Armed forces 9. Foreign policy	

Title of future study: Kyrgyzstan's strategic matrix: retrospective, modern times and scenarios of future development			Descriptive icon
	Number of scenarios	Five: 1. Flexible Course 2. Eurasian Integration 3. Growing Influence of Kazakhstan 4. Growing Influence of China 5. Euro Atlantic Choice	
	Thematic focus	Politics; Economy	
	Specific issue focus	Natural resources	
	Integration of environment/ society/economy	Main topic for integration concerns the use of natural resources in political and economic development	
	Policy targets	No targets or goals specified, though integration with other central Asian countries appears to be a policy goal	
	Spatial scale	Kyrgyzstan	
	Temporal scale	2020	
	Publication date/series	Published in 2007	
	Origins/derivation/family	Based on the multi-factor model developed by Kuzyk and used in other studies by the Institute for Economic Strategies in Moscow (some of the other matrix studies are presented in this Catalogue). Note that this study shares four scenarios with the matrix study for Kazakhstan	
	Research/policy/business	Research/Policy	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	No information available	
	Analytical/participative/both	Research and analysis	
	Level of engagement	Apparently mainly expert analysis	
4. Purpose and application	**Objective of the study and target audience**	The objective of the study seems to be the development of long-term economic strategies and the study seems destined for decision-makers and strategic planners	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	

Title of future study: Kyrgyzstan's strategic matrix: retrospective, modern times and scenarios of future development			**Descriptive icon**
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Mainly text with photos, graphs and figures	
	Language	Russian	
	Access and cost	A hard cover 430+ page book, 500 copies printed	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	Institute for Economic Strategies — central Asia, Almaty	
	Lead partner: developed by whom?	Institute for Economic Strategies — central Asia, Almaty	
8. References and contact information	Bayshuakov A.B. (ed.), *Kyrgyzstan's Strategic Matrix: Retrospective, Modern Time and Scenarios of Future Development [Strategicheskaya matritsa Kyrgyzstana: retrospektiva, sovremennost' i stcenarii buduschego razvitiya],* Institute for Economic Strategies — central Asia, Moscow — Almaty, 2007 Title in Russian: Байшуаков А. Б. (ред.) Стратегическая матрица Кыргызстана: ретроспектива, современность и сценарии будущего развития. М.: Институт экономических стратегий — Центральная Азия, 2007 The Institute's webpage: http://www.inesnet.ru/		

Title of future study:
Kyrgyzstan 2025 — strategies and development scenarios

Descriptive icon

1. Summary

1.1 Summary of the forward looking study

This collection of studies prepared by leading Russian and Kyrgyz experts for the Kyrgyz government presents long-term scenarios for the country's development, based on expert analyses of national, regional and global processes including a review of barriers to the achievement of national development goals. The barriers identified include: low level of management skills, short-term interests and corruption. The main objective of the study is to support the preparation of Kyrgyzstan's first development strategy.

1.2 Summary of the scenarios

Four scenarios of national economic development in Kyrgyzstan are developed (pp. 137–145); they take into account forecasts of developments at the global and regional levels.

1. Russia's periphery

Integration with Russian economy. Kyrgyzstan's economy grows based mainly on natural resources production and partly on industrial development.

2. Country-gate

Development of economic relations with China based on Kyrgyzstan's transport corridors and service industry. Slow development of new technologies and human resources within the country.

3. Military ground

Development of military bases in the country for the US, NATO and other powers. This will be the most complicated scenario for the country, requiring a very professional government

4. Great Game

Combination of scenario 'Country-gate' with export of water, energy and financial services.

2. Description/ characteristics of future study	**Exploratory/normative**	Exploratory	
	Qualitative/quantitative	Qualitative	
	Axes/factors considered	Not specified: developments in international politics appear to be a key factor	
	Number of scenarios	Four: 1. Russia's periphery 2. Country gate 3. Military ground 4. Great Game	
	Thematic focus	Economy	
	Specific issue focus	Energy, Finance, Natural resources, Politics, Transport	
	Integration of environment/ society/economy	Little: focus on politics and economics	
	Policy targets	Broad policy goals: national economic and political development	

Title of future study: Kyrgyzstan 2025 — strategies and development scenarios			Descriptive icon
	Spatial scale	Kyrgyzstan	
	Temporal scale	2025	
	Publication date/series	Published in 2005	
	Origins/derivation/family	No information available	
	Research/policy/business	Research	
3. Methodology	*(Detail of how scenarios were developed, e.g. expert-led, stakeholder involvement, iterative processes, Eionet participation)*		
	Methodological transparency	Information not available.	
	Analytical/participative/both	Research and analysis	
	Level of engagement	The study is based on expert analyses of the national, regional and global processes.	
4. Purpose and application	**Objective of the study and target audience**	The study is aimed at experts and analytical groups to enable them to carry out analytical work	
	Use of the study: By whom? For what end (objectives)? Examples where used & when	No information available	
5. Presentation/ communication	**How presented/communicated, e.g. use of maps, charts, narratives**	Text, tables, graphic charts	
	Language	Russian	
	Access and cost	Available online for free	
6. Evaluation	**Any evaluation of their use?**	No information available	
7. Organisations involved	**Initiator**	President of the Kyrgyz Republic; Academy of the MFA of Kyrgyzstan	
	Lead partner: developed by whom?	International Institute for Strategic Studies	
	Types of other participating organisations: Friedrich Ebert Foundation, national government; research institutes		
8. References and contact information	M.N. Omarov (ed.), *Kyrgyzstan 2025. Strategies and Development Scenarios.* 2005 Title in Russian: Омаров М. Н. (ред.) Кыргызстан-2025. Стратегии и сценарии развития. Бишкек, 2005. http://www.eurasianhome.org/doc_files/Kyrgyzstan_2025.pdf		

Annex Scenario studies relevant to European environment assessments: overview of all studies identified (2008 update)

This annex lists all of the future-oriented studies identified in the recent literature reviews carried out for the EEA arranged by the studies' geographical focus (global, wider Europe, EEA member counties, south-eastern Europe (western Balkans), eastern Europe, the Caucasus and central Asia). A description of these reviews is found in the introduction to this Catalogue.

Climate-change-related studies (66) were excluded because they have not been reviewed sufficiently but they will be included in future versions of the Catalogue.

The reviews were carried out by a series of experts and researchers.

- Tony Zamparutti and Valery Votrin (Milieu Ltd) prepared the 2006 review of studies at global and Pan-European levels as well as those in eastern Europe, the Caucasus and central Asia.
- William Sheate, Suzan Bennett and Owen White (Collingwood Environmental Planning, London) prepared the 2007 review of foresight studies, together with Tony Zamparutti.

The following researchers worked on the 2007 review of studies in south-eastern Europe, including the western Balkans:

- Madalina Caprusu (Milieu Ltd, Brussels)
- Yűksel Alper Ecevit (Istanbul, Turkey)
- Oriana Hanxhari (Pristina, Albania)
- Sanja Kostovska (Skoplje, FYR Macedonia)
- Dejan Sandić (Belgrade, Serbia)
- Fethi Silajdžić and Lejla Silajdžić (Sarajevo, Bosnia and Herzegovina)
- Katya Trichkova (Sofia, Bulgaria)

Tony Zamparutti led this review. Melita Rogelj (Brussels) also worked on the review, coordinating researchers in the western Balkans and carrying out research for Croatia. Mia Bertetto (Milieu Ltd) contributed to the review of academic studies in south-eastern Europe and in eastern Europe, the Caucasus and central Asia.

The following researchers worked on the 2008 update of studies in eastern Europe, the Caucasus and central Asia:

- Fuad Aliyev (Baku, Azerbaijan)
- Eoghan Daly (Collingwood Environmental Planning, London), focusing on academic studies in English
- Tatiana Echim (Chisinau, Moldova)
- Irina Grvitishvili (Tbilisi, Georgia)
- Nina Hajoyan (Yeravan, Armenia)+
- Olena Maslyukivska, Anna Vilde, Anna Skidanova, Julia Ogarenko and Galyna Budynkevych (Kiev, Ukraine)
- Iryna Usava and Maria Falaleeva (Minsk, Belarus)
- Valery Votrin (Brussels and Moscow)
- Bulat Yessekin (Almaty, Kazakhstan).

Eoghan Daly (Collingwood Environmental Planning, London) also contributed to the 2008 update of studies at global and pan-European levels, undertaking a literature search of academic publications. Alice Belin (Milieu Ltd) reviewed and checked studies and fact sheets for this update.

The full list of presented here can also be found in Excel format on the EEA EnviroWindows web site: http://scenarios.ew.eea.europa.eu.

Global

Study	Reference	Theme	Geographical coverage	Time horizon
2020 Global Food Outlook: Trends, Alternatives and Choices	Rosegrant et al., 2001 (IFPRI — http://www.ifpri.org/)	Agriculture	Global	2020
Global Food Projections to 2020: Emerging Trends and Alternative Futures.	Rosegrant et al., 2001 (IFPRI — http://www.ifpri.org/)	Agriculture	Global	2020
Prospects for Global Food Security: A Critical Appraisal of Past Projections and Predictions	McCalla A.F. and Revorendo C.L., 2001 (IFPRI — http://www.ifpri.org/)	Agriculture	Global	2020
The Unfinished Agenda: Perspectives on Overcoming Hunger, Poverty, and Environmental Degradation	Pinstrup-Andersen P. and Pandya-Lorch R. (eds.), 2001 (IFPRI — http://www.ifpri.org/)	Agriculture	Global	2020, 2030, 2050
World Agriculture: Towards 2015/2030. An FAO Perspective	Bruinsma J., (ed.), 2003 (FAO — http://www.fao.org/)	Agriculture	Global	2015, 2030
Agricultural Outlook: 2005–2014	OECD/FAO, 2005 (OECD/FAO, http://www.oecd.org; http://www.fao.org/)	Agriculture	Global	2005–2014
Agricultural Outlook: 2007–2016	OECD/FAO, 2005 (OECD/FAO, http://www.oecd.org; http://www.fao.org/)	Agriculture	Global	2005–2014
New Risks and Opportunities for Food Security: Scenario Analyses for 2015 and 2050	Von Braun et al., 2005 (IFPRI — http://www.ifpri.org/)	Agriculture	Global	2015, 2050
FAPRI 2008 US and World Agricultural Outlook	FAPRI (Food and Agricultural Products Research Institute), 2008	Agriculture	Global	2018
International Assessment of Agricultural Science and Technology for Development (the Ag Assessment)	The World Bank, 2008 (The World Bank — http://www.worldbank.org/)	Agriculture	Global	2050
Reaching Sustainable Food Security for All by 2020: Getting the Priorities and Responsibilities Right	IFPRI, 2002 (IFPRI — http://www.ifpri.org/)	Agriculture; Environment & Sustainability	Global	2020
Millennium Ecosystems Assessment — Scenarios	Reid et al., 2005 (Millenium Ecosystem Assessment (MEA))	Biodiversity; Global Futures	Global	2050
GLOBIO Global Methodology for Mapping Human Impacts on the Biosphere	Netherlands Environmental Assessment Agency (PBL)	Biodiversity	Global	2030, 2050, 2100
Population and Scenarios: Worlds to Win?	Hilderink H.B.M, 2004 (Rijksinstituut voor Volksgezondheid en Milieu (RIVM))	Demography	Global	2100
World Population Ageing 2007	UNDESA, 2007 (UN Department of Economic & Social Affairs (UNDESA))	Demography	Global	2050
World Population Prospects: 2006 Revision	UNDESA, 2007	Demography	Global	2100

Study	Reference	Theme	Geographical coverage	Time horizon
The Future of the Global Economy: Towards a Long Boom?	OECD, 2000 (OECD — www.oecd.org)	Economy; Global Futures	Global	2020, 2030
Global Economic Prospects — Managing the Next Wave Of Globalization	The World Bank, 2007 (The World Bank — www.worldbank.org)	Economy; Global Futures	Global	2030
Energy Needs, Choices and Possibilities : Scenarios to 2050 (SHELL01)	Shell, 2001 (Shell Corporation — www.shell.com)	Energy	Global	2050
Shell Energy Scenarios to 2050	Shell, 2008 (Shell Corporation — www.shell.com)	Energy	Global	2050
International Energy Outlook 2007	US Energy Information Administration, 2007 (US Energy Information Administration http://www.eia.doe.gov/)	Energy	Global	2030
International Energy Outlook 2008	US Energy Information Administration, 2008 (US Energy Information Administration http://www.eia.doe.gov/)	Energy	Global	2050
Nuclear Energy Outlook	OECD, 2008 (OECD — www.oecd.org)	Energy	Global	2050
Projected Costs of Generating Electricity — 2005 Update	IEA/OECD, 2005 (IEA — www.iea.org; OECD-www.oecd.org)	Energy	Global	2050
World Energy Outlook 2005 Edition — Middle East and North Africa Insights	IEA, 2005 (IEA — www.iea.org)	Energy	Global	2010, 2020, 2030
World Energy Outlook 2009	IEA, 2009 (IEA — www.iea.org)	Energy	Global	2050
Energy to 2050: Scenarios for a Sustainable Future	IEA, 2003 (IEA — www.iea.org)	Energy; Climate Change	Global	2050
Greenhouse Gas Reduction Pathways in the UNFCCC Process up to 2025	European Commission (DG Environment), 2003	Climate Change; Energy	Global	2025–2050–2100
World Energy, Technology and Climate Policy Outlook — WETO 2030	DG Research and Energy, 2003 (European Commission — http://ec.europa.eu/index_en.htm)	Energy; Climate Change	Global	2030
Development of a model of the World Refining Industry for the POLES model: the OURSE Model.	Lantz et al., 2005 (Institute for Prospective Technological Studies (IPTS) http://www.jrc.es/)	Energy; Climate Change	Global	2020
Pathways to 2050 — Energy and Climate Change	WBCSD, 2005 (World Business Council for Sustainable Development)	Energy; Climate Change	Global	2050
Energy Technology Perspectives 2008: Scenarios & Strategies to 2050	IEA, 2008 (IEA — www.iea.org)	Energy; Climate Change	Global	2050

Study	Reference	Theme	Geographical coverage	Time horizon
Shell Energy Scenarios to 2050	Shell, 2008 (Shell Corporation — www.shell.com)	Energy; Climate Change	Global	2050
World Energy Outlook 2008	IEA, 2008 (IEA — www.iea.org)	Energy; Climate Change	Global	2030
World Energy Outlook 2006	IEA, 2006 (IEA — www.iea.org)	Energy; Climate Change	Global	2030
World Energy Outlook 2007 Edition — China and India Insight	IEA, 2007 (IEA — www.iea.org)	Energy; Climate Change	Global	2030
Environmental Problems and Policy: 2000–2050	Paul R. Portney, 2000	Environment and sustainability	USA	2050
OECD Environmental Outlook	OECD, 2001 (OECD — www.oecd.org)	Environment & Sustainability	Global	2020
Characterizing a Sustainability Transition: Goals, Targets, Trends, and Driving Forces	Thomas M. Parris and Robert W. Kates, 2003 (PNAS (Proceedings of the National Academy of Sciences) USA)	Environment and sustainability	Global	2015–2025–2050
Quality and the Future: Sustainability Outlook	RIVM, 2004 (RIVM — www.mnp.nl/en/index.html)	Environment & Sustainability	Global	2100
Ecosystems and Human Well-being: Scenarios, Volume 2	Millenium Ecosystem Assessment, 2005 (http://www.millenniumassessment.org/en/Index.aspx)	Environment & Sustainability	Global	2100
Exploring Past and Future Changes in the Ecological Footprint for World Regions	Detlef P. van Vuuren, & Bouwman, L.F., 2005 (Ecological Economics)	Environment & Sustainability	Global	2050
OECD Environmental Outlook to 2030	OECD, 2008 (OECD — www.oecd.org)	Environment & Sustainability	Global	2030
Getting in the Right Lane for 2050	Netherlands Environmental Assessment Agency (PBL) (PBL — www.pbl.nl)	Environment & Sustainability	Global	2050
Global Environmental Outlook 3- Past, Present and Future Perspectives	UNEP, 2002 (UNEP — www.unep.org)	Environment & Sustainability; Global Futures	Global	2002–2032
Global Environmental Outlook 4	UNEP, 2007 (UNEP — www.unep.org)	Environment & Sustainability; Global Futures	Global	2050
Global Scenario Group Futures — Technical Notes	Kemp-Benedict et al., 2002 (Stockholm Environment Institute (SEI))	Environment & Sustainability; Global Futures	Global	2100
Great Transition: The Promise and Lure of the Times Ahead — A Report of the Global Scenario Group	Raskin et al., 2002 (SEI and Global Scenario Group)	Environment & Sustainability; Global Futures	Global	2050
The GEO-3 Scenarios 2002–2032: Quantification and Analysis of Environmental Impacts	Potting J. and Bakkes J. (eds.), 2004 (UNEP — www.unep.org; MNP/RIVM — www.mnp.nl/en/index.html)	Environment & Sustainability; Global Futures	Global	2032

Study	Reference	Theme	Geographical coverage	Time horizon
Global Environment Outlook 4 (GEO-4)	UNEP, 2007 (UNEP — www.unep.org)	Environment & Sustainability; Global Futures	Global	2015–2050
Fish as food: Projections to 2020 Under Different Scenarios	Delgado et al., 2002 (IFPRI — http://www.ifpri.org/)	Fisheries	Global	2020
Fish to 2020: Supply and Demand in Changing Global Markets	Delgado et al., 2003 (IFPRI — http://www.ifpri.org/; WorldFish Center)	Fisheries	Global	2020
People and Connections : Global Scenarios to 2020 (SHELL02)	Global Business Environment — Shell, 2002 (Shell Corporation — www.shell.com)	Global futures	Global	2020
Emerging Systemic Risks in The 21st Century: An Agenda for Action	OECD, 2003 (OECD — www.oecd.org)	Global Futures	Global	2050
Mapping the Global Future	US National Intelligence Council (NIC), 2004	Global Futures	Global	2025
Shell Global Scenarios to 2025: The Future Business Environment — Trends, Trade-offs and Choices	Shell, 2005 (Shell Corporation — www.shell.com)	Global Futures	Global	2025
2006 State of the Future	Glenn J.C. and Gordon T.J., 2006 (American Council for the United National University)	Global Futures	Global	n/a
2008 State of the Future	Glenn J.C. and Gordon T.J., 2008 (Millenium-project.org)	Global Futures	Global	2015, 2030, 2050
Global Trends 2025: A Transformed World	US National Intelligence Council (NIC), 2008	Global Futures	Global	2025
The Creative Society of the 21st Century	OECD, 2000 (OECD — www.oecd.org)	Global Futures; Technology & innovation	Global	2050
The Global Technology Revolution: Bio/Nano/ Materials Trends and Their Synergies with Information Technology by 2015	Antón P.S., Silberglitt R. and Schneider J., 2001 RAND/National Defense Research Institute	Technology & Innovation	Global	2015
OECD Science, Technology and Industry Outlook 2008	OECD, 2008 (OECD — www.oecd.org)	Technology & Innovation	Global	n.a.
Fuel Cells, Impact and Consequences of Fuel Cells Technology On Sustainable Development	Oertel et al., 2003 Institute for Prospective Technological Studies (IPTS)	Transport	Global	2010
Mobility 2030: Meeting the Challenges To Sustainability	WBCSD, 2004 (World Business Council Sustainable Development — www.wbcsd.org)	Transport	Global	2030, 2050
Potential for Hydrogen as a Fuel for Transport in the Long Term (2020 — 2030)	**Altmann et al., 2004** (IPTS http://www.jrc.es/)	Transport; Technology & innovation	Global	2020-2030
Prospects for Hydrogen and Fuel Cells	IEA, 2005 (IEA — www.iea.org)	Transport; Technology & innovation	Global	2050

Study	Reference	Theme	Geographical coverage	Time horizon
Infrastructure to 2030: Telecom, Land Transport, Water and Electricity	OECD, 2006 (OECD — www.oecd.org)	Transport; Water; Energy; Technology & innovation	Global	2030
World Water Vision: Making; Water Everybody's Business (WWV)	Cosgrove & Rijsberman, 2000 (World Water Council (WWC) — www.worldwatercouncil.org)	Water	Global	2025
Global Water Outlook to 2025: Averting an Impending Crisis	Rosegrant et al., 2002 (IFPRI — http://www.ifpri.org/)	Water	Global	2025
World Water and Food to 2025: Dealing with Scarcity	Rosegrant et al., 2002 (IFPRI — http://www.ifpri.org/)	Water	Global	2025
Water for food Water for life — A Comprehensive Assessment of Water Management in Agriculture	David Molden (Ed.), 2007 (International Water Management Institute — www.iwmi.cgiar.org)	Water	Global	2025 (quant.) and 2050 (qual.)

Wider Europe

Study	Reference	Theme	Geographical coverage	Time horizon
La démographie en Méditerranée. Situation et projections	ATTANE Isabelle et COURBAGE Youssef, 2001 (UNEP — Regional Activity Centre — Blue Plan)	Demography	Mediterranean Countries	2025
From Red to Grey — The 'Third Transition' of Aging Populations in eastern Europe and the Former Soviet Union	Mukesh Chawla, Gordon Betcherman, Arup Banerji, 2007 (The World Bank — http://www.worldbank.org/)	Demography; Society	Eastern Europe, Caucasus, central Asia	2050
Eurasia 2020: Global Trends 2020 Regional Report	NIC, 2004 (National Intelligence Council — http://www.dni.gov/nic/NIC_home.html)	Economy, Glodbal Futures	Eastern Europe, Caucasus, central Asia	2020
Scenario 2020: Russia, Ukraine, Belarus and Kazakhstan	P. Brezinschek (Editor) et al., 2008 (Raiffeisen Research for Raiffeisen Investment AG)	Economy	Russia, Ukraine, Belarus and Kazakhstan	2020
CIS Energy	Energy Research Institute of the Russian Academy of Sciences, 2001 (www.eriras.ru; www.ras.ru/)	Energy	Eastern Europe, Caucasus, central Asia	2020
The Future of Caspian Petroleum Offshore Industry	RPI, 2005 (nc www.rpi-inc.com/)	Energy	Azerbaijan, Kazakhstan, Turkmenistan, Russia and Uzbekistan	n/a
From Economic Activities to Ecosystem Protection in Europe. An Uncertainty Analysis of Two Scenarios of the RAINS Integrated Assessment Model	Suutari et al., 2001 (International Institute for Applied Systems Analysis (IIASA) http://www.iiasa.ac.at/)	Energy; Climate Change	Pan-European	2010
Modelling of Emissions of Air Pollutants and Greenhouse Gases from Agricultural Sources in Europe	Klimont, Z. and C. Brink, 2004 (International Institute for Applied Systems Analysis (IIASA) http://www.iiasa.ac.at/)	Energy; Climate Change	Pan-European	2020
A Sustainable Future for the Mediterranean	Benoit G. and Comeau A., 2005 (UNEP — Regional Activity Centre — Blue Plan)	Environment & Sustainability	Mediterranean Basin	2025
Whither the European Neighbourhood Policy? Scenarios for a Special Relationship	European View, 2008 (European View, Volume 7, Number 1/June 2008)	Politics; society	EU and neighbouring states	n/a

EEA member countries

Study	Reference	Theme	Geographical coverage	Time horizon
IPTS/ESTO Studies on Reforms of Agriculture, Education and Social Systems Within the Context of Enlargement and Demographic Change in the EU	Institute for Prospective Technological Studies, 2002	Agriculture	EU-27	n/a
Prospects for Agricultural Markets 2004–2011 — Update for EU-25	European Commission, DG Agriculture, 2004	Agriculture	EU-25	2011
Forecast of Food, Farming and Fertilizer Use in the European Union 2004–2014	European Fertilizer Manufacturers Association (EFMA), 2004	Agriculture	EU-25	2014
EURURALIS (EURURALIS 1.0 Technical Document)	Klijn J.A. et al., 2004 (Wagenin Univ. (NL) and partners (financed by NL government))	Agriculture	EU-25	2030
Rural Ireland 2025 — Foresight Perspectives	Riordan, Commins, Walsh, Meredith, Pitts, Fennessy, Carton, Tunney, Finn and Downey, 2005 (NUI Maynooth; University College Dublin; Teagasc)	Agriculture	Ireland	2025
Agricultural Policy Options Distinguishing a Subsistence Sub-Sector in Bulgaria	Mishev, P., Ivanova, N., Kostov, P., 2002	Agriculture	Bulgaria	2011
Forsait Prognoza za Razvitieto na Biotehnologiite v Bulgaria v Sektorite Lozarstvo I Vinoproizvodstvo; Bivolovadstvo (Foresight of the Development of Biotechnology in Bulgaria in Sectors Wine-Growing and Producing; Buffalo Breeding)	Applied Research and Communications Fund, 2005	Agriculture	Bulgaria	2015
Bulgarskoto Zemedelie v ES — Vazmojnosti za Razvitie (Bulgarian Agriculture in the EU — Development Opportunities and Limitations)	Popov, Rumen, 2005 (Economic Institute of the Bulgarian Academy of Science)	Agriculture	Bulgaria	n/a
Water Resources For Agriculture in a Changing Climate: International Case Studies	Rosenzweig, C., Strzepek, K. M., Major, D. C., Iglesias, A., Yates, D. N., McCluskey, A., Hillel, D., 2004 (Global Environmental Change)	Agriculture	Romania	n/a
EURURALIS 2.0	Alterra Wageningen UR, 2007 (Netherlands Ministry of Agriculture, Nature and Food quality)	Agriculture; Biodiversity	EU-27	2030
Emerging Technologies in Favour of Sustainable Agriculture	Kristian Borch, 2007 (Risø National Laboratory, Danemark)	Agriculture; Environment & Technology	Danemark	2024

Study	Reference	Theme	Geographical coverage	Time horizon
A fine-resolution Modelling Study of Pollution Levels in Bulgaria. Part 1: SO_x and NO_x Pollution	Zlatev, Z., Syrakov, D., 2004 (International journal of environment and pollution (IJEP), vol. 22, no1–2, pp. 186–202)	Air polluion	Bulgaria	2010
Baseline Scenarios for the Clean Air for Europe (CAFE) Programme	Amann et al., 2005 (International Institute for Applied Systems Analysis (IIASA) — http://www.iiasa.ac.at/)	Air pollution	EEA members	2020
Assessing Large scale Risks for Biodiversity with Tested Methods (ACCELERATES)	Leuven Catholic University — Department of geology and geography, 2004 European Commission (FP5) DG RTD	Biodiversity	EU-25	2100 (by 10-year mean time slices)
BIOSCENE — Scenarios for Reconciling Biodiversity Conservation With Declining Agricultural Use In The Mountains of Europe	Ashford Imperial College of Science, Technology and Medicine, 2005 (European Commission (FP5) DG RTD)	Biodiversity	Mountain areas in Norway, the United Kingdom, France, Slovakia, Switzerland and Greece	2030
BioScore — Biodiversity Impact Assessment Using Species Sensitivity Scores	ECNC-European Centre for Nature Conservation, On-going (European Commission (FP6) DG RTD)	Biodiversity	EU-27	2030
ALARM — Assessing Large Scale Risks for Biodiversity with Tested Methods	UFZ Helmholtzzentrum für Umweltforschung, On-going (European Commission (FP6) DG RTD)	Biodiversity	EU-27	2020, 2050, 2080, 2100
PRELUDE — Land-use scenarios for Europe: Qualitative and Quantitative Analysis on a European Scale	EEA, 2007 (European Environmental Agency (EEA) — www.eea.europa.eu)	Biodiversity; Land use	EEA members	2035
Scenar 2020	ECNC-European Centre for Nature Conservation, 2007 (European Commission (DG Agriculture))	Biodiversity; Agriculture	EU-27	2020
System for Environmental and Agricultural Modelling; Linking European Science and Science (SEAMLESS)	Wageningen University, 2009 (European Commission (FP6) DG RTD)	Biodiversity; Agriculture	EU-27	2025
Advanced Terrestrial Ecosystem Analysis and Modelling (ATEAM)	Schroter et al., 2004 (Potsdam Institute for Climate Impact Research (PIK))	Biodiversity; Climate Change	EU-15 + Norway, Switzerland and parts of eastern Europe	2020-2050-2080
Models for Integrated Review and Assessment of Biodiversity in European Landscapes (MIRABEL II)	Centre for Ecology & Hydrology, the United Kingdom, 2004 (European Environmental Agency (EEA) — www.eea.europa.eu)	Biodiversity; Land use	EU-27 + Norway, Lichtenstein, Switzerland	2010

Study	Reference	Theme	Geographical coverage	Time horizon
Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects of Multifunctional Land Use in European Regions (SENSOR)	Leibniz-Centre for Agricultural Landscape Research (ZALF), 2009 (European Commission (FP6) DG RTD)	Biodiversity; Land use	EU-27	2025
Understanding Effects of Land Use Changes on Ecosystems to Halt Loss Of Biodiversity Due To Habitat Destruction, Fragmentation And Degradation (COCONUT)	Swedish University of Agricultural Sciences, On-going (European Commission (FP6) DG RTD)	Biodiversity; Land use	EU-27	2020 or 2030
Energy — The Changing Climate	Royal Commission on Environnemental Pollution (RCEP), 2000	Climate Change; Energy	The United Kingdom	2050
UK Electricity Scenarios for 2050	Watson, 2003 (Tyndall Centre for Climate Change- www.tyndall.ac.uk/)	Climate Change; Energy	The United Kingdom	2050
Scenario Exercise on Moving Toward a Sustainable Energy Economy	IAF, 2004 (Institute for Alternative Futures- www.altfutures.com/)	Climate Change; Energy	The United Kingdom	2050
Four Futures for Energy Markets and Climate Change	Johannes Bollen, Ton Manders, Machiel Mulder, 2004 (Netherlands Bureau for Economic Policy Analysis (CPB))	Climate Change; Energy	EU-15 (with a look to the 12 new MS)	2040
Foresight Future Flooding	OST, 2004	Climate Change; Water	The United Kingdom	2100
Migration Trends from Central and eastern Europe to Germany	Haug, S., 2003	Demography	EU12 (except Cyprus and Malta) and Germany	2020
Low Fertility and Population Ageing: Causes, Consequences, and Policy Options	Jonathan Grant, Stijn Hoorens, Suja Sivadasan, Mirjam van het Loo, Julie DaVanzo, Lauren Hale, Shawna Gibson, William Butz, 2004 (RAND Europe — www.rand.org)	Demography	EU-25	2020
Population Trend Scenarios	Eurostat, 2005 (Eurostat — www.ec.europa.eu/eurostat)	Demography	EU-27	2050
Geo-Demographic Projections of the Population of Bulgaria until 2020	H. Karakashev et al., 1998 (OECD — www.oecd.org)	Demography	Bulgaria	2020
Povuzrastova Plodovitost na Jenite na Regionalno Nivo Prez 1993–2020 (Aged-wise Fertility Of Women On Regional Level in the Period 1993 — 2020)	Emil Hristov, National Statistical Institute, 2003 (Center for Population Studies to Bulgarian Academy of Science)	Demography	Bulgaria	2020
Demografski Tendencii I Prognozi na Naselenieto na Republika Bulgaria do 2020 (Demographic Trends and Forecasts of the Bulgarian Population to 2020)	Tatiana Kotzeva and team, 2003 (Center for Population Studies to Bulgarian Academy of Science)	Demography	Bulgaria	2020

Study	Reference	Theme	Geographical coverage	Time horizon
Prognoza za Razvitieto na Naselenieto (Projection for the Population Development)	Emil Hristov, Ivaylo Gavazki, 2006 (Center for Population Studies to Bulgarian Academy of Science)	Demography	Bulgaria	2020
Growth and Immigration Scenarios for Turkey and the EU	Refik Erzan, Umut Kuzubas and Nilufer Yildiz, 2004 (Centre for European Policy Studies www.ceps.eu/)	Demography	Turkey	2030
The Balkans in 2010:Economic Scenarios	K. Stanchev, 1999 (Institute for Market Economics)	Economy	Bulgaria	2010
Srednosnochna Prognoza za Ikonomicheskija Rastej v Bulgaria (Medium-Term Forecast of the Economic Growth in Bulgaria)	Rossitza Rangelova, 2002 (Institute of Economics, Bulgarian Academy of Science)	Economy	Bulgaria	2010
A scenario of Development of Land Relationships and Land Marketing in Bulgaria	Rissina, M. & Dimitrov, D., 2002 (Agricultural Economics and Management)	Economy	Bulgaria	n/a
Strategija za Dogonvashto Ikonomichesko Razvitie do 2020 Godina (Strategy for Catch Up Economic Development)	I. Angelov et al., 2003 (Economics Institute of Bulgarian Academy of Science/Fridrifg Ebert Foundation)	Economy	Bulgaria	2020
Ikonomicheskite Predizvikatelstva — Bulgaria 2010 (Economic challenges — Bulgaria 2010)	Administration of the President of Republic of Bulgaria, 2005	Economy	Bulgaria	2010
Prognoza za Osnovnite Makroikonomicheski Pokazateli na Republika Bulgaria v Perioda 2005–2008 i Dopuskanija, Pri Koito Tja e Razrabotena (Forecast for Main Macro Economic Indicators of Bulgaria for 2005–2008)	Agency for economic analysis and forecasting, 2005	Economy	Bulgaria	2008
Nasoki za Ikonomicheskoto Razvitie na Bulgaria 2005–2010 (Trends for Bulgaria's Economic Development (2005–2010)	Center for Economic Development, 2005	Economy	Bulgaria	2010
Creşterea Economică Şi Ocuparea Până În Anul 2013 (Economic and Occupational Growth Prognosis — 2013)	National Prognosis Commission, 2005	Economy	Romania	2013
The Romania Business Forecast Report	Business Monitor International, 2006	Economy	Romania	2010
The Future of Turkey EU Trade Relations, Deepening vs Widening	Sinan Ülgen and Yinanis Zahariadis, 2004 (Centre for European Policy Studies www.ceps.eu/)	Economy	Turkey	n/a
Turkey 2020: on Course for Convergence	Jaeger M., 2005 (Deutsche Bank Research — www.dbresearch.com)	Economy	Turkey	2020

Study	Reference	Theme	Geographical coverage	Time horizon
Restructuring and Privatizing the Coal Industries in Central and eastern Europe and the CIS	World Energy Council, 2000 (World Energy Council — www.worldenergy.org)	Energy	Major coal-producing countries in EU12, EECCA and western Balkans	2050
The Future of Gas Infrastructures in Eurasia	Klaassen, G; McDonald, A. & Zhao, J., 2001 (International Institute for Applied Systems Analysis — www.iiasa.ac.at)	Energy	Eurasia	2020
Biofuel Production Potential of EU-Candidate Countries	Kavalov et al., 2003 (International Institute for Applied Systems Analysis — www.iiasa.ac.at)	Energy	EU New MS + Turkey	2010
Potential of Solar Electricity Generation in the European Union Member States And Candidate Countries	Marcel Šúri, M., Hulda, T.A., Dunlopa, E.D., & Ossenbrinka, H.A., 2007 (European Commission, JRC)	Energy	Focus on EU27 (esp. southern Member States), Croatia, Macedonia and Turkey	n/a
Bulgaria — Pregled Energetika I Okolna Sreda (Energy and Environment Review)	S. Zahir et al., 2001 (The World Bank — http://www.worldbank.org/)	Energy	Bulgaria	2015
Predizvikatelstva I Vazmojnosti Za Izgrajdane na Novi Proizvodstveni Energiini Moshtnosty (Challenges and Opportunities for Construction of New Generation Energy Capacities)	Nikolay Shterev Dimitar Blagoev, 2005 (University for National and World Economy — Department of Industrial business and entrepreneurship)	Energy	Bulgaria	2015
Current Status and Future Directions of Wind Energy Applications in Turkey	Önder Özgener, Arif Hepbaşlı, 2002 (Energy sources)	Energy	Turkey	n/a
Forecasting the Primary Energy Demand in Turkey and Analysis of Cyclic Patterns	Ediger, V. & Tatlıdil, H., 2002 (Energy Conversion and management)	Energy	Turkey	2010
Assessing the Potential of Renewable Energy Sources in Turkey	F. Evrendilek, C. Ertekin, 2003 (Renewable Energy)	Energy	Turkey	n/a
Turkey's Energy Prospects in the EU-Turkey Context	Yusuf Işık, 2004 (Centre for European Policy Studies www.ceps.eu/)	Energy	Turkey	2025
The Role of Renewables in Future Energy Directions of Turkey	Kamil Kaygusuz, 2004 (Energy Sources)	Energy	Turkey	n/a
Present Status and Future Prospects of Hydroelectric Energy in Turkey	Harun Kemal Öztürk, 2004 (Energy Sources)	Energy	Turkey	n/a
Geothermal Energy in Turkey: the Sustainable Future	Kamil Kaygusuz, Abdullah Kaygusuz, 2004 (Renewable and Sustainable Energy Reviews)	Energy	Turkey	n/a
Energy from Renewable Sources in Turkey: Status and Future Direction	Ayham Demirbaş, Recep Bakış, 2004 (Energy Sources)	Energy	Turkey	n/a

Study	Reference	Theme	Geographical coverage	Time horizon
Genetic Algorithm Approach to Estimate Transport Energy Demand in Turkey	Haldenbilen, S. & Ceylan, H., 2005 (Energy Policy)	Energy	Turkey	2020
Current Status and Future Directions of Wind Energy Applications in Turkey	Önder Özgener, Arif Hepbaşlı, 2002 (Energy sources)	Energy	Turkey	n/a
Energy Production, Consumption, Policies, and Recent Developments in Turkey	Fatma Çanka Kiliç & Durmuş Kaya, 2007 (Renewable and Sustainable Energy Reviews)	Energy	Turkey	2010
INFORSE Vision2050 for Sustainable Energy Development (Romania)	P. Pamantului, 2007 (Inforse — Europe)	Energy	Romania	2050
Carbon pricing and the Diffusion Of Renewable Power Generation in eastern Europe: a Linear Programming Approach	F. Pettersson, 2007	Energy; Climate Change	Croatia, the European part of Russia, Macedonia, Serbia and the Ukraine	2020
An Integrated Analysis of Changes in Water Stress in Europe	Henrichs, T., Lehner, B. & Alcamo, J., 2002 (Center for Environmental Systems Research, www.usf.uni-kassel.de/cesr/)	Environment & Sustainability	EEA members	2100
Four Scenarios for Europe: Based on UNEP's Third Global Environment Outlook	Bakkes JA., 2003 (UNEP — www.unep.org; MNP/RIVM — www.mnp.nl/en/index.html)	Environment & Sustainability	EEA members	2030
Generic Scenarios (2003); Specific Scenarios and strategies (2004 draft)	Wadden Sea Forum, 2003 (Wadden Sea Forum — www.waddensea-forum.org/)	Environment & Sustainability		2020
The European Environment — State and Outlook 2005	EEA, 2005 (European Environmental Agency (EEA) — www.eea.europa.eu)	Environment & Sustainability	EEA members	2030
European Environment Outlook	EEA, 2005 (European Environmental Agency (EEA) — www.eea.europa.eu)	Environment & Sustainability	EEA members	2100
EEA Outlook	European Environment Agency, 2005	Environment & Sustainability	EEA members	2100
Assessment of the Potential Biomass Supply In Europe Using a Resource-Focused Approach	Ericsson, K. & Nilsson, L. J., 2006 (Environmental and Energy System Studies, Lund University, Sweden)	Environment & Sustainability	EU-27 (minus Cyprus and Malta) + Belarus and the Ukraine	2010
FORESCENE (Development of a Forecasting Framework and Scenarios to Support the EU Sustainable Development Strategy)	Wuppertal Institute for Climate, Environment and Energy (project coordinator), 2008 (European Commission (FP6))	Environment & Sustainability	EU-25	(different for each study)
An Integrated Analysis of Changes in Water Stress in Europe	Henrichs, T., Lehner, B. & Alcamo, J., 2002 (Center for Environmental Systems Research, www.usf.uni-kassel.de/cesr/)	Environment & Sustainability	EEA members	2100

Study	Reference	Theme	Geographical coverage	Time horizon
Nacionalen doklad za Sastojanieto I Opazvaneto na Okolnata Sreda v Republika Bulgaria (Annual Report for the State of Environment in Bulgaria (Green Book)	Executive Environmental Agency, 2004	Environment & Sustainability	Bulgaria	2010–2080
Water resource Impacts of Climate Change in Southwestern Bulgaria	Chang, H., Knight, C.G., Staneva, M.P. & Kostov, D., 2004 (GeoJournal)	Environment & Sustainability	Bulgaria	2025–2085
Potential Climate Change Impacts on Water Resources in Romania	Cuculeanu, V., Balteanu, D., 2004 (National Institute of Meteorology and Hydrology)	Environment & Sustainability	Romania	2075
Integrated Visions for a Sustainable Europe	Jan Rotmans and Marjolein B.A. van Asselt, 2001 (International Centre for Integrated Studies — www.icis.unimaas.nl)	Environment and sustainability	North-West UK (NW-UK), the Green Heart (the Netherlands), Venice (Italy)	2050
Getting in the Right Lane for 2050	Netherlands Environmental Assessment Agency (PBL), 2009	Environment & sustainability	EU	2050
Sustainable Management Regimes for Europe's Forests — a Projection with EFISCEN until 2050	Nabuurs, G.J, Paivinen, R., Schanz, H., 2001	Forestry	30 European countries (EU-27 + 3)	2050
Scenarios on Forest Management in Czech Republic, Hungary, Poland and Ukraine.	Schelhaas et al., 2004 (European Forest Institute Research)	Forestry	Czech Republic, Poland, Hungary and Ukraine (with a view to CEC and NIS countries)	n/a
European Forest Sector Outlook Study	UNECE/FAO, 2005 (UNECE — www.unece.org; FAO- http://www.fao.org/)	Forestry	Western and eastern Europe + CIS countries	2020
Tackling Obesities: Future Choices — Project Report	Dr Bryony Butland, Dr Susan Jebb et al., 2007 (Government Office for Science — Department for Business, Innovation & Skills (the United Kingdom))	Health	The United Kingdom	2040
Future Land Use in Europe (Scoping Study)	Karlheinz Knickel & Kasper Kok, 2003 (International Centre for Integrated Studies — www.icis.unimaas.nl)	Land Use	EU-15 + accession countries + USA + Australia	n/a
European/Mediterranean Land Use Scenarios	Kok et al., 2004 (International Centre for Integrated Studies — www.icis.unimaas.nl)	Land Use	Portugal, Spain, Greece and Italy	2030
Towards Integrated Catchment Coastal Zone Management	Ledoux et al., 2005 (CSERGE, UEA)	Land Use	UK Sub-national (Humber Estuary)	n/a
Spatial Scenarios	Université Libre de Bruxelles, On-going (ESPON (European Spatial Planning Observatory Network))	Land Use	EU27+ Switzerland + Norway	2015 and 2030

Study	Reference	Theme	Geographical coverage	Time horizon
Four Future scenarios for the European Union — Reflections from the Perspective of 'Path Dependence'	Langer J., 2005 (Europe2020 — www.europe2020.org)	Politics	EU-25	2010
Turkey and the World in Twenty-Five Years: Thinking about the Future	Kuniholm, Bruce Robellet, 2003 (South Atlantic Quarterly)	Politics	Turkey	2028
Turkey as Regional Hegemon—2014: Strategic Implications for the United States	Eward J. Erickson, 2004 (Turkish Studies)	Politics	Turkey	2014
The Future of Turkey in the European Union	Güney A., 2005 (Futures)	Politics	Turkey	n/a
Future of Turkey — EU Relations: A Civilisational Discourse	Tekin A., 2005 (Futures)	Politics	Turkey	n/a
Islamism, Kemalism and the Future of Turkey	Mellon, James G, 2006	Politics	Turkey	n/a
Four Futures of Europe	Ruud de Mooij & Paul Tang, 2003 (Netherlands Bureau for Economic Policy Analysis (CPB))	Politics; demography; economy	EU-27	2020-2040
Foresight Futures 2020: Revised Scenarios and Guidance	Office of Science and Technology, 2002 (Government Office for Science — Department for Business, Innovation & Skills (the United Kingdom))	Socio-economic	The United Kingdom	2020
Forecast for Economic Activity, Employment and Unemployment — Scenarios for Labour Market Development in Bulgaria 2005–2015 [Prognoza za Ikonomicheskata Aktivnost, Zaetostta I Bezrabotizata — Scenario za Razvitieto na Trudovija Pazar v Bulgaria Zaperioda 2005–2015]	Todor Todorov, 2005 (University for National and World Economy)	Socio-economic	Bulgaria	2015
[Evolution of Occupations on Romanian Labour Market in 2010 Perspective] Evoluţia Ocupaţiilor Pe Piaţa Forţei De Muncă Din România În Perspectiva Anului 2010	Romanian Government (Ministry of Labour), 2006	Socio-economic	Romania	2010
Challenges and Priorities for European Research: a Foresight review	James Gavigan, Mario Zappacosta, Ken Ducatel, Fabiana Scapolo, Paola di Pietrogiacomo, 2001 (Foresight journal)	Technology & Innovation	EU	n/a
Choosing Strategies for Sweden	Swedish Technology Foresight, 2004 (Teknisk Framsyn)	Technology & Innovation	Sweden	2020
Innovation.BG	Prof. Marin Petrov et al., 2005 (Center for the Study of Democracy)	Technology & Innovation	Bulgaria	2010

Study	Reference	Theme	Geographical coverage	Time horizon
Background papers on: 1. the Sector of Agriculture, Food and Drinks Industry and Biotechnologies; 2. Information and Communication Technologies Sector	FORETECH, 2005? (foretech.online.bg/)	Technology & Innovation	Romania	n/a
Future Prospects in Romania: Scenarios for the Development of the Knowledge Society in Romania	Constantin B. Zamfirescu, C.B., Filip, F.G. &. Bărbat, B.E., 2005? (Institute for Prospective Technological Studies — www.jrc.es)	Technology & Innovation	Romania	2015
Vision 2023: Strategies for Science and Technology	TUBITAK (Scientific and Technological Council of Turkey), 2004	Technology & Innovation	Turkey	2023
Assessing the Environmental Potential of Clean Material Technologies	Phylipsen et al., 2002 (Institute for Prospective Technological Studies — www.jrc.es)	Technology & Innovation; environment & technology	EU-15	2030
The Future of Manufacturing in Europe 2015–2020: The Challenge for Sustainability Scenario Report	A. Geyer et al., 2003 (Institute for Prospective Technological Studies — www.jrc.es)	Technology & Innovation; environment & technology	EU	2020
Environment-Related Structural Indicators in New Member States and Candidate Countries: A Prospective Analysis	P. Christidis et al., 2004 (Institute for Prospective Technological Studies — www.jrc.es)	Technology & Innovation; environment & technology	New MS + candidate countries	2020
The Future Impact of ICTs on Environmental Sustainability	L. Erdmann et al., 2004 (Institute for Prospective Technological Studies — www.jrc.es)	Technology & Innovation; environment & technology	EU-25	2020
Forecasts, Scenarios, Visions, Backcasts and Roadmaps to the Hydrogen Economy: a Review of the Hydrogen Futures Literature	William McDowall and Malcolm Eames, 2006 (Policy Studies Institute — http://www.psi.org.uk)	Technology & Innovation; environment & technology	The United Kingdom	2030–2100
Expedite	Jong, G.C. de et al., 2002 (RAND Europe — http://www.rand.org, and partners)	Transport	EU-15 + CEEC	2020
Future Transport of Goods: Scenarios for Europe's Future Transport of Goods in the Baltic Region	Kåre Stamer Andreasen, Søren Jensen and Uffe Palludan, 2002 (Copenhagen Institute of Futures Studies — www.iff.dk/en)	Transport	EU-27, Russia + Turkey	2020
European Energy and Transport: Trends to 2030	Mantzos et al., 2003 European Commission, DG Energy and Transport	Energy; Transport	EU-27 + Norway + Switzerland + Turkey	2030
Trends in Vehicle and Fuel Technologies: Scenarios for Future Trends	P. Christidis, I. Hidalgo, A. Soria, 2003 (Institute for Prospective Technological Studies — www.jrc.es)	Transport	EU-15 + candidate countries + North America, Japan, China and India	2020

Study	Reference	Theme	Geographical coverage	Time horizon
Dynamics of the Introduction of New Passenger Car Technologies: The IPTS Transport Technologies Model	P. Christidis, I. Hidalgo, A. Soria, 2003 (Institute for Prospective Technological Studies — www.jrc.es)	Transport	EU-15	2020
Foresight for Transport	The Interdisciplinary Centre for Comparative Research in the Social Sciences — ICCR, 2004 (European Commission (FP5))	Transport	EU-27	2020
Vision for 2020	European Road Transport Research Advisory Council, 2004	Transport	EU-15	2020
TEN-STAC: Scenarios, Traffic Forecasts, and Analyses of Corridors on the Trans-European Transport Network	NEA Transport research and training, 2004 (European Commission)	Transport	EU-27	2020
Cost Effectiveness of CO_2 Mitigation in Transport	Kampman et al., 2006 (CE Netherlands for the European Conference of Ministers of Transport)	Transport	International Transport Forum members	2010; 2030
TREMOVE	European Commission (DG Environment), On-going	Transport	EU-27 plus Croatia, Norway, Switzerland and Turkey	2030
Territorial Impact of EU Transport and TEN Policies	Christian Albrecht University of Kiel, Institute of Regional Research, Kiel (Germany), 2005 (European Spatial Planning Observatory Network — www.espon.eu)	Transport; Land Use	EU	2021
GALILEO Impacts On Road Transport	Schmidt et al., 2005 (Institute for Prospective Technological Studies — www.jrc.es)	Transport; Technology & Innovation	EU-25	2020
Hybrids for Road Transport: Status and Prospects of Hybrid Technology and the Regeneration of Energy In Road Vehicles	P. Christidis et al., 2005 (Institute for Prospective Technological Studies — www.jrc.es)	Transport; Technology & Innovation	EU-25	2020
Intelligent Infrastructure Futures: The Scenarios — Towards 2055	A. Curry et al., 2006 (UK Government: Foresight Prog., Office of Science and Technology)	Transport; Technology & Innovation	The United Kingdom	2055
TRIAS: Sustainability Impact Assessment of Strategies Integrating Transport, Technology and Energy Scenarios	Fraunhofer Institute for Systems and Innovation Research, 2006 (European Commission, JRC)	Transport; Technology & Innovation; Environment & Sustainability	EU-27	2030
Scenarios of Household Waste Generation in 2020	A. Tukker et al., 2003 (Institute for Prospective Technological Studies — www.jrc.es)	Waste	EU-15	2020
Hospital Waste Management and Health-Ecological Risk Prophylaxis in Bulgaria	Spasov, Alexander, 2003 (National Centre of Hygiene, Medical Ecology and Nutrition)	Waste	Bulgaria	2013

Study	Reference	Theme	Geographical coverage	Time horizon
Water Resources for the Future	EA, 2001 (Environment Agency (the United Kingdom) — www.environment-agency.gov.uk/)	Water	Wales, the United Kingdom	2025
Foresight Future Flooding	Government Office for Science — Department for Business, Innovation & Skills (the United Kingdom), 2004	Water	The United Kingdom	2030–2100
Gediz River Basin — SMART: Sustainable Management of Scarce Resources in the Coastal Zone	Environmental Software & Services GmbH — ESS, 2005	Water	Turkey	2030
Changes in Summer Irrigated Crop Area and Water Use in Southeastern Turkey from 1993 to 2002: Implications for Current and Future Water Resources	Mutlu Özdoğan, Curtis E.Woodcock, Guido D.Salvucci, Hüseyin Demir, 2006 (Water Resources Management)	Water	Turkey	n/a
Application of a Participatory Foresight Methodology at River Basin Scale in Jordan and Turkey	P. Ker Rault et al., 2006 (International Association of Hydrogeologists)	Water	Turkey	2025

Western Balkans (and neighbouring countries)

Study	Reference	Theme	Geographical coverage	Time horizon
Pension Reform in Croatia	Anusic, Z., O'Keefe, P., Madzarevic-Sujster, S., 2003 (The World Bank — http://www.worldbank.org/)	Demography	Croatia	2000-2040
Процесот на демографско стареење во Македонија (The Process of Demographic Ageing in Macedonia)	Gerasimovski Donco and Simovski Apostol, 2000	Demography	FYR of Macedonia	n/a
Момент на трансформација на селското население во градско во Република Македонија (The transformation of the Population from Rural to Urban in Macedonia)	Markoski Blagoja Madzarevik Mirijanka, 2001 (Institute of Geography)	Demography	FYR of Macedonia	n/a
Актуелни проблеми во вкупното движење на населението во Република Македонија (Current Problems of Migration in Macedonia)	Daskalovski Vasa Даскаловски Васа, 2002	Demography	FYR of Macedonia	n/a
Демографски промени и стареење на населението во Македонија (Demographic Changes and Ageing of the Population in Macedonia)	Tomislav Grozdanovski and Katerina Nospalovska, 2004/2005 (Law faculty 'Justinian I' University st.Cyril and Methodius)	Demography	FYR of Macedonia	n/a
Economic Performance and Structure of Southeastern European Countries -- Albania, Bulgaria, FYR of Macedonia, and Greece	Totev, S., 2002 (Eastern European Economics)	Economy	Albania, Bulgaria, FYR of Macedonia, and Greece	n/a
Country Forecasts: Bulgaria. Romania. Turkey	Economist Intelligence Unit, ongoing	Economy	Bulgaria. Romania. Turkey	2010
The Business Forecast Reports: Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Romania, Serbia, Turkey	Business Monitor International, ongoing	Economy	Bosnia and Herzegovina, Bulgaria, Croatia, FYR of Macedonia, Romania, Serbia, Turkey (separate national reports)	2010
Tourism Reports: Bulgaria, Croatia, Romania, Turkey	Business Monitor International, ongoing	Economy	Bulgaria, Croatia, Romania, Turkey	2010
Toward a Long-Term Strategy of Economic Development of Croatia: Where to Begin, What to Do and How to do it?	Dubravnko Mihaljek, 2001 (Institute for Public Finance)	Economy	Croatia	2010
Privatization and Foreign investments: The Case of Serbia and Montenegro	Popov, D., 2004	Economy	Montenegro	n/a

Study	Reference	Theme	Geographical coverage	Time horizon
Review of Electricity Supply and Demand in Southeast Europe	Varadarajan Atur, David Kennedy, 2003 (The World Bank — http://www.worldbank.org/)	Energy	Western Balkans (including Kosovo), Bulgaria, and Romania	2012
Gas and Oil Reports: Bulgaria, Croatia, Romania, Turkey	Business Monitor International, ongoing	Energy	Bulgaria, Croatia, Romania, Turkey (individual reports for each country)	2010
Energy Sector in Croatia after the Year 2000	GRANIC and associates; Energy Institute 'HRVOJE POZAR', 2000 (World Energy Council — www.worldenergy.org/)	Energy	Croatia	2010
Perspectives of Renewable Energy Use in Croatia	Vrhovcak, M.B., Tomsic, Z. & Kovacevic, T., 2004	Energy	Croatia	n/a
Sustainability Assessment of Cogeneration Sector Development in Croatia	Lipolseak, M.; Afgan, N. H.; Duie, N.; Carvalho, M. G., 2006	Energy	Croatia	n/a
Potential of Renewable Energy Resources	Ministry of the Economy, 2006	Energy	Montenegro	2025
Sustainable Development After Johannesburg and Iraq: The global Situation and the Cases of Slovenia and Croatia.	Blinc, R., Zidanšek, A. & Šlaus, I., 2005 (Energy Policy)	Environment & Sustainability	Slovenia, Croatia	n/a
Millenium Development Goals Report for Bosnia and Herzegovina: Where will I be in 2015?	UNDP, 2004 (United Nations Development Programme — www.undp.org)	Environment & Sustainability	Bosnia and Herzegovina	2015
Montenegro — Issues and Challenges in Environmental Reforms	Regional Environmental Reconstruction Program, 2005	Environment & Sustainability	Montenegro	2014
National Strategy for Sustainable Development (International Meeting on the final draft)	UNDP, 2005 (United Nations Development Programme — www.undp.org)	Environment & Sustainability	Montenegro	2010
Albania: Out of Blessed Isolation	Valbona, S., 2005 (Transitions Online)	Health	Albania	2015
Anticipatory Anthropology and World Peace: a view from 2050	Dobbert, M.L., 2000 (Futures)	Politcs	Bosnia and Herzegovina	2050
Facing the Future: The Balkans to the Year 2010	Bugajski, Janusz, 2001 (Center for European Integration Studies (ZEI) — www.zei.de/index_e.html)	Politics	Western Balkans	2010
Do All Roads Lead to Brussels? Analysis of the Different Trajectories of Croatia, Serbia-Montenegro and Bosnia-Herzegovina	Massari, M., 2005 (Cambridge Review of International Affairs)	Politics	Croatia, Bosnia and Herzegovina, Montenegro, Serbia	2015
Bosnia on the Road to European Integration: A status report	Nida Gelazis and Marty Slezinger, 2005 (Futures)	Politics	Bosnia and Herzegovina	n/a

Study	Reference	Theme	Geographical coverage	Time horizon
Reforms for Healthy Society	Center for Democracy and Human Rights, 2002	Politics	Montenegro	n/a
The Future of Croatia	Zoran Malenica, 2004 South East Europe Review	Socio-economic	Croatia	n/a
Seagarden	Future Management, 2005	Technology & Innovation	Montenegro	2006
Automotives Reports: Bulgaria, Croatia, Romania, Turkey	Business Monitor International, ongoing	Transport	Bulgaria, Croatia, Romania, Turkey (individual reports for each country)	2010

Eastern Europe

Study	Reference	Theme	Geographical coverage	Time horizon
Justifying Market Strategies for Agricultural Development [Obgruntuvannya Rynkovyh Strategiy Rozvytku Silskogo Gospodarstva]	Sadovnyk O.V., 2005 (Kyiv National Economic University)	Agriculture	Ukraine	n/a
The prognosis of Transboundary Air Pollution of Belarus for the Period to 2020 [Prognis Transgranichnogo Zagrjaznenja Atmosfernogo Vozducha na Period do 2020]	Kakareka S.V., Kucharchyk T.I., 2007 (Ministry of Natural Resources and Env. Protection (www.minpriroda.by), Institute for problem of use of natural resources and ecology (IPIPRE), National Academy of Science)	Air pollution	Belarus	2020
The analysis and Prognosis Of Pollution of Persistent Organic Pollutants for the Period Until 2028	Kakareka S.V., Kucharchyk T.I., 2008 (Min. of Natural Resources and Env. Protection (www.minpriroda.by), Institute for problem of use of natural resources and ecology (IPIPRE), National Academy of Science)	Air pollution	Belarus	2028
Economic Growth, Fuel Mix and Air Quality in Russia	Golub A. et al., 2003 (Environmental Defense Fund — http://www.environmentaldefense.org/)	Air pollution; energy	Russia	2010
Patterns and Trends of Migration and Remittances in Moldova	Matthias Lucke et al., 2007 (IOM- www.iom.int/)	Demography	Moldova	2012
Dire Demographics: Population Trends in the Russian Federation	DaVanzo J. and Grammich C., 2001 (RAND — www.rand.org)	Demography	Russia	2020, 2040
Replacement Migration: Is It A Solution for Russia?	Vishnevsky A., 2000 (UN Population Division www.un.org/esa/population/unpop.htm)	Demography	Russia	2000-2050
Russia's Demographic Perspectives to 2100 [Demograficheskie Perspektivy Rossii do 2100 goda]	Andreev E.M. and Vishnevsky A.G., 2004	Demography	Russia	2100
Demographic Development Strategy for 2006 — 2015	Family, Youth & Sports Ministry and National Academy of Sciences of Ukraine, 2005	Demography	Ukraine	2015
Future Demographics Ukraine	Euromonitor International, 2005	Demography	Ukraine	2020
Complex Demographical Forecast for Ukraine for the Period to 2050	N.S. Vlasenko, O.V. Makarova, S.I. Pyrogkov, O.V. Pozniak, L.M. Stelmah, G.U. Shvydka, P.E. Shevchuk, 2006 (United Nations Population Fund, Institute of Demography and Social Studies, State Statistics Committee of Ukraine, Ukrainian Center for Social Reforms)	Demography	Ukraine	2050

Study	Reference	Theme	Geographical coverage	Time horizon
Potential and Performance of Ukraine/Analytical report by the International Centre for Policy Studies The report was Prepared as Part of the 'Socio-Economic Performance and Potential Analysis Capacity'	International Centre for Policy Studies, 2008	Demography	Ukraine	2050
Potential and Performance of Ukraine/Joint analytical report by the Ministry of Economy, the Ministry of Finance and the National Bank of Ukraine	Ministry of Economy, the Ministry of Finance and the National Bank of Ukraine, 2008	Demography	Ukraine	2050
Potential of Ukraine and its Realization [Potencial Ukrainy ta Yogo Realizaciya]	Romanyuk O. et al., 2008 (International Centre for Policy Studies)	Demography, Energy	Ukraine	2050
Economy of Belarus: Research, Forecast and Monitoring	IPM Research Center, 2007 (http://research.by)	Economy	Belarus	2011
The Belarussian Economy after the Energy Shock: Scenarios of Development [Scenarii razvitija Ekonomiki Belarusi Posle Energeticheskogo Shoka: Prognoz Na Osnove Makroekonomicheskoi Modeli]	IPM Research Center, 2007 (http://research.by)	Economy	Belarus	2011
Belarus Defence and Security Report	Business Monitor International, 2008 (http://www.businessmonitor.com)	Economy	Belarus	2012
Belarus Food and Drink Reports	Business Monitor International, 2008 (http://www.businessmonitor.com)	Economy	Belarus	2012
Belarus Telecommunications Report	Business Monitor International, 2008 (http://www.businessmonitor.com)	Economy	Belarus	2012
The Tendencies to Changes of GDP of Belarus with Forecast until 2020 [Tendencii Izmeneniha VVP Belarusi s Prognozom do 2020]	Nikitenko P.G., et al., 2008 (Institute of Economy, National Academy of Science)	Economy	Belarus	2020
Russia: Facing the Future	Stulberg A.N., 2001	Economy	Russia	n/a
Big Oil Playground, Russian Bear Preserve or European Periphery? The Russian Barents Sea Region towards 2015	Brunstad B. et al., 2005	Economy	Russia	2015
Russian Long-Term Economic Trends: Russia's Economic Scenarios to 2020 [Dolgosrochnye Trendy Rossiyskoy Ekonomiki: Scenarii Ekonomicheskogo Razvitiya Rossii do 2020 goda]	Belousov A.R., 2005 (Centre for Macroeconomic Analysis & Short-Term Forecasting (Moscow) http://www.forecast.ru/)	Economy	Russia	2020
Kaliningrad 2020: its Future Competitiveness and Role in the Baltic Sea Economic Region	Liuhto K. (ed.), 2005 (Pan-European Institute, University of Turku — http://www.tse.fi/en/units/specialunits/pei/)	Economy	Russia	2020

Study	Reference	Theme	Geographical coverage	Time horizon
Integral Macroforecast of Innovation and Technological and Structural Dynamics of the Russian economy to 2030 [Integralniy Makroprognoz Innovatsionno-Tekhnologicheskoy I Strukturnoy Dinamiki Ekonomiki Rossii na Period do 2030 goda]	Kuzyk B.N. and Yu. V. Yakovets, 2006 (Institute of Economic Strategies — www.inesnet.ru/eng)	Economy	Russia	2030
Mineral Resources of the World Ocean: Development and Research Concept to 2020 [Mineralnye Resursy Mirovogo Okeana: Kontseptsiya Osvoeniya I Izuchenia (na period do 2020]	Andreyev S.I., 2007 (Ministry of Natural Resources, Federal Service for Subsurface Use)	Economy	Russia	2020
The Russian Economic Miracle: Doing on our Own. Russia's Development Forecast to 2020 [Rossiyskoe Ekonomicheskoe Chudo: Sdelaem Sami. Prognoz Razvitiya Ekonomiki Rossii do 2020]	Abramova E.A. et al., 2007 (Centre for Macroeconomic Analysis and Short-term Forecast, Moscow)	Economy	Russia	2020
Russian Aquaculture Development Strategy to 2020 [Strategoya Razvitiya Akvakulturtury v Rossiyskoy Federatsii na Period do 2020 Goda]	Ministry of Agriculture, 2007	Economy	Russia	2020
Long-term Forecast of Russian Economic Development for 2007–2030: Possible options	Ivantar et al., 2008 (Studies on Russian Economic Development)	Economy	Russia	2030
Russia Business Forecast Report	Business Monitor International, 2008 (Business Monitor International — http://www.businessmonitor.com)	Economy	Russia	2017
Russia 2010: it's a Russian Bear, not a Bull!	Beck R. and Schularick M., 2003 (Deutsche Bank Research — http://www.dbresearch.com)	Economy	Russia	2010
Russian Prospects: Political and Economic Scenarios	Copenhagen Institute of Futures Studies, 2005 (Copenhagen Institute of Futures Studies http://www.cifs.dk/en/)	Economy	Russia	2020
Scenarios of Russia's Economic Development: A Fifteen-Year Outlook	R. Belousov, 2006 (Studies on Russian Economic Development, Volume 17, Number 1)	Economy	Russia	2031
Ukraine: The Long Road West	Schularick M., 2005 (Deutsche Bank Research — http://www.dbresearch.com)	Economy	Ukraine	2025

Study	Reference	Theme	Geographical coverage	Time horizon
Forecasting the Influence of Innovation Factors Upon the Development of Ukrainian Economy	Alexandrova V., Skrypnychenko M., Fedulova L., 2007 (Institute of Economy and Forecasting of National Academy of Sciences of Ukraine)	Economy	Ukraine	2015
Models of Endogenous Economic Growth in Ukraine	Skrypnychenko D.U. (Editor) et al., 2007 (Institute of Foreign Policy, National Academy of Sciences of Ukraine)	Economy	Ukraine	2015
Scheme-Forecast of Development and Allocation of Productive Forces in Kyiv until 2015	Panchenko Y., 2008 (National Academy of Ukraine, Productive Forces Research Council)	Economy	Ukraine	2015
Ukraine Business Forecast Report	Business Monitor International, 2008	Economy	Ukraine	2017
Russia 2017 : Three Scenarios	Osmo Kuusi, Hanna Smith, Paula Tiihonen, 2007 (Parliament of Finland, The Committee for the Future; http://web.eduskunta.fi/Resource.phx/parliament/committees/future.htx)	Economy; politics	Russia	2017
Conceptual Basics of Ukraine's Industry Strategy Development by Year 2017	Yakubovs'kyi M., Novyts'kyi V., Kindzers'kyi J, 2007 (Institute of Economy and Forecasting of National Academy of Sciences of Ukraine)	Economy, Industry	Ukraine	2017
Political and Economic Outlook for Russia and the Future of the Automotive Industry	Azrael et al., 2004 (RAND — http://www.rand.org)	Economy; industry	Russia	2008, 2020
Russia Initiative: Reports of the Four Task Forces	Carnegie Corporation (New York), 2000 (http://www.carnegie.org)	Economy; politics	Russia	2050
Russia's future: Inert Development or Innovative Breakthrough? [Buduschee Rossii: Inertsionnoe Razvitie Ili Innovatsionniy Proryv?]	Ivanter V.V. and Kuzyk B.N., 2005 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Economy; politics	Russia	2025
Russia 2050: Strategy of Innovative Breakthrough	Kuzyk B.N. and Yakovets Y.V., 2005 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Economy; politics	Russia	2050
The Future of the Ukrainian Economy	V. Nanivs'ka (head of the project), et al., 2007 (International Centre for Perspective Studies)	Economy; politics	Ukraine	2015
Russian Energy Prices Long-Term Forecast	ERI RAS experts, 2001 (Energy Research Institute of the Russian Academy of Sciences (RAS) http://www.ras.ru/index.aspx?_Language=en)	Energy	Russia	2030

Study	Reference	Theme	Geographical coverage	Time horizon
The Future of Russian Electricity: The Essential Guide to the Russian Electricity Market	Energy Research Institute of the RAS, 2001 (http://www.ras.ru/index.aspx?_Language=en)	Energy	Russia	2020
The Future of Russian Energy — Short Outlook: Main trends, problems, possibilities	Energy Research Institute of the RAS, 2001 (http://www.ras.ru/index.aspx?_Language=en)	Energy	Russia	2020
The Future of Russian Gas: The Essential Guide to the Russian Gas Market	Energy Research Institute of the RAS, 2001 (http://www.ras.ru/index.aspx?_Language=en)	Energy	Russia	2020
Between Need and Dependency. Russian Gas in the Energy Balance of the Enlarged EU	Grzegorz Gromadzki, 2002 (On the Future of Europe, Policy Papers 8, Stefan Batory Foundation)	Energy	Russia/Poland	5 and 10 years
Outlook 'Russian Coal Industry'	Energy Research Institute of the RAS, 2002 (http://www.ras.ru/index.aspx?_Language=en)	Energy	Russia	2020
The Energy Dimension in Russian Global Strategy: Russian Oil Futures	Gordon R.G., 2004 (Rice University — www.rice.edu/)	Energy	Russia	2020
The Future of Oil Exports from Russia	RPI, 2004 (RPI Inc — www.rpi-inc.com/)	Energy	Russia	n/a
The Future of the Russian LPG Market	RPI, 2004 (RPI Inc — www.rpi-inc.com/)	Energy	Russia	n/a
The Future of Russian Refining and Exports of Oil Products	RPI, 2005 (RPI Inc — www.rpi-inc.com/)	Energy	Russia	2014
The Future of Russia's Offshore Oil and Gas Industry	RPI, 2006 (RPI Inc — www.rpi-inc.com/)	Energy	Russia	2014
Energy Sector 2050 [Energetika 2050]	Bushuev V.V., ed., 2007 (Institute for Energy Strategy)	Energy	Russia	2050
Russia: The Strategy of Transition to the Hydrogen Economy [Rossiya: Strategiya Perehoda k Vodorodnoy Energetike]	Kuzyk B.N. and Yakovets Y.V., 2007 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Energy	Russia	2050
Scenarios of Transition to Sustainable Oil Extraction in Russia.	Andreeva A. and Bazhanov A., 2007 (Far Eastern National University)	Energy	Russia	2020
Prospects for Electricity Generation and Electrification in Russia till 2030	S. Nekrasov and Yu. V. Sinyak, 2008 (Studies on Russian Economic Development)	Energy	Russia	2030
Electric Energy Sector in Russia: Strategic Vision [Elektroenergetika Rossii: Tselevoe Videnie]	Wainzicher B., ed., 2008	Energy	Russia	2030
Perspectives of Development and Distribution of Nuclear Power in Ukraine	O.M.Gudyma, 2000 (National Academy of Sciences of Ukraine)	Energy	Ukraine	2010, 2020, 2030

Study	Reference	Theme	Geographical coverage	Time horizon
Energy Resources and Flows	A.K. Shydlovsky, U.O. Vihorev, V.O. Ginajlo, K.B. Denysevych, S.P. Denysuk, 2003 (National Academy of Sciences of Ukraine, Enterprise 'Ukrenergo zberegennia')	Energy	Ukraine	2030
Ukraine: Outlook to 2050	Geletukha G. et al., 2004 (INFORSE-EUROPE The International Network for Sustainable Energy http://www.inforse.dk/europe/VisionUA.htm)	Energy	Ukraine	2050
Concept of Nuclear Free Energy Development of Ukraine	Mama-86, National ecological centre of Ukraine, Ecoclub Rivne, The Voice of Nature and others, 2006	Energy	Ukraine	2030
Creating a Maintenance System for Effective Energy Resources Utilization in Industry	Skrypnychenko D.U. (Editor) et al., 2006 (Productive Forces Research Council of National Academy of Sciences of Ukraine)	Energy	Ukraine	2080
Development of Nuclear Energy in Ukraine Needs, Shortages and Advantages	L. L. Litvinsky, O. A. Purtov, 2006 (State Scientific-Engineering Center of Systems Control and Emergency Reaction)	Energy	Ukraine	2050
Energy Strategy of Ukraine for 2030	Institute of General Energy, National Academy of Sciences of Ukraine; Ministry of Fuel and Energy, 2006	Energy	Ukraine	2030
Oil and gas complex of Ukraine Trendencies of Implementation of Energy Strategy to 2030	M.P. Haliavko, 2007	Energy	Ukraine	2030
Alternative Futures for Russia to 2017	Andrew C. Kuchins, 2007 (Centre for Strategic and International Studies — www.csis.org)	Energy/ Economy/ Politics	Russia	10 years
Environmental Impacts and Benefits of Regional Power Grid Interconnection for the Russian Far East: Generation and Fuel-Supply-Related Impacts	Podkovalnikov S., 2003	Energy; air	Russia	2020
Global Long-term Energy-Economy-Environment Scenarios with an Emphasis on Russia	Kryazhimskiy A., Minullin Y. and Schrattenholzer L., 2005 (IIASA — http://www.iiasa.ac.at/)	Energy; Climate Change; Economy	Global/Russia	2100
The Prognosis of Changes in the Environment in Belarus in 2010 to 2020 [Prognoz Izmeneniya Okruzhayuschey Prirodnoy Sredy Belarusi na 2010-2020 gg.]	Loginov V.F., ed., 2004	Environment	Belarus	2020
The prognosis Estimation of the Ecological Risk	Olga Kazantseva, Institute 'Urbanproiect', 2008 (Urban Project Institute — www.urbanproiect.md)	Environment	Moldova	2025

Study	Reference	Theme	Geographical coverage	Time horizon
Testing methods for Evaluation and Forecasting the Negative Impact of Atmospheric Pollution Risks in Industrial Cities [Obgruntuvannya Metodiv Ocinky ta Prognozuvannya Ryzyku Vplyviv Shkidlyvyh Rechovyn pry Zabrudnenni Atmosphery]	Zvjagintseva G.V., 2006 (Donetsk State University)	Environment	Ukraine, 3 cities	2010
2009 National Human Development Report (NHDR) Socio-Economic Impact of Climate Change in Moldova and Policy Options to Adapt.	UNDP, 2009 (UNDP Moldova — http://www.undp.md/)	Environment & sustainability	Moldova	n.a.
Current environmental Situation in Russia and Possibilities of its Forecasting [Sovremennya Ekologicheskaya Obstanovka v Rossii I Vozmozhnosti Ee Prognozirovaniya]	Kochurov B.I., Antipova A.V. and Kostovska S.K., 2005 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Environment & Sustainability	Russia	n/a
Russia in 2015: Development Goals and Policy Priorities	Bobylev S.N. and Alexandrova AL. (eds.), 2005 (UNDP Russia — http://www.undp.ru)	Environment & Sustainability; health	Russia	2015
Russian Federation Forest Sector Outlook Study	UNECE/FAO, 2003 (UNECE — http://www.unece.org; FAO — http://www.fao.org)	Forestry	Russia	2020
Forestry of Ukraine in XXI Century: Scenarios of Development [Lisove Gospodarstvo Ukrainy XXI Stolittya: Scenarii Rozvytku]	Synyakevych I., Soloviy I, Deyneka A., 2007	Forestry	Ukraine	n/a
Artificial Spruce Forests of Ukrainian Carpathians — Forecast of Growth and Productivity [Shtuchni Jalynovi Derevostany Ukrainskyh Carpat — Prognoz Rostu ta Productyvnosti]	Lakida P, Volodymyrenko V., 2008 (National Scientific Centre 'Institute of Agrarian Economy')	Forestry	Ukraine	n/a
To Sustainability in Forestry: The Ukraine's Case	Nijnik M, 2002 (Wageningen University)	Forestry, Climate Change	Ukraine	2042
Scenarios for Russia — Health Care, 2015	Twigg J.L., 2001 (Club 2015 — http://www.club2015.ru)	Health	Russia	2015
A model of social policy costs of HIV/AIDS in the Russian Federation.	Misikhina S., Pokrovsky V., Mashkilleyson N. and Pomazkin D., 2004 (International Labour Organization — www.ilo.org/aids)	Health	Russia	2050
Annex I: Modelling the Macroeconomic Implications of a Generalised AIDS Epidemic in the Russian Federation.	Sharp S., 2004 (UNDP — www.undp.org/)	Health	Russia	2045

Study	Reference	Theme	Geographical coverage	Time horizon
Conceptual Basis for Industrial Strategic Development of Ukraine for the Period till 2017 [Konceptualni Osnovy Strategii Rozvytku Promyslovosti Ukrainy na Period do 2017 roku]	Yakubovskiy M., 2007 (Economy of Ukraine Journal, #11)	Industry	Ukraine	2017
Forecasting Technological Development of the Industrial Branches	Fedulova L., 2008 (Institute of Economy and Forecasting of National Academy of Sciences of Ukraine)	Industry	Ukraine	2025
Perspectives of Innovative and Technological Development of Ukrainian Industry	Fedulova L., 2008 (Institute of Economy and Forecasting of National Academy of Sciences of Ukraine)	Industry	Ukraine	2025
Ukraine:Country Report	PRS Group, 2007	Politics	Ukraine	5 years
Alternative Scenarios for Ukraine	Hans von Zon, 2002 (Futures Vol. 34 (2002) pp. 401–416)	Politics, Economy, society	Ukraine	10 years
Belarus's Strategic Matrix [Strategicheskaya Matritsa Belarusi]	Ageev et al*., 2005* (Institute of Economic Strategies — http://www.inesnet.ru/eng/)	Politics; economy	Belarus	2080
Russia and the World in the 21st Century [Rossiya i mir v XXI Veke]	Kuzyk B.N., 2005 (Institute of Economic Strategies www.inesnet.ru/eng/)	Politics; economy	Russia	2080
Ukraine's Strategic Matrix [Strategicheskaya Matritsa Ukrainy]	Ageev et al*., 2005* (Institute of Economic Strategies http://www.inesnet.ru/eng/)	Politics; economy	Ukraine	n/a
The Forecast of Changes of Radioactive Contamination of Soils in Settlements Located in Areas of Radioactive Pollution [Prognoz Izmenenija Radiacionnoi Obstanovki v Naselennych Punktach, Nachodjachihsja v Zonach Radioaktivnogo Zagrjazneniya]	National Centre for Radiation Control and Env. Monitoring, National Aviation-Meteorological Centre, Institute of radiology, 2007	Radioactive contamination	Belarus	2146
Pension System in Belarus: Major Challenges and the Ways of Meeting Them [Prognoz Finansovoi Ustoichivosti Pensionnoi Systemy Belarusi]	Baturchyk et al*., 2008* (IPM Research Center (http://research.by) German Economic Team)	Society	Belarus	2050
Pension System of the Republic of Moldova: Actuary Expertise	Ed. By Valeriy Baskakov, director IAIA, 2007 (Independent Actuarial Information Analytical Center. Russia)	Society	Moldova	2050
Human Development of Regions in Ukraine: Analysis and Forecast	Libanova E.M., 2007 (Institute of Foreign Policy, National Academy of Sciences of Ukraine)	Society	Ukraine	2015
Brain drain from the Republic of Moldova	Natalia Percinschi, 2000 (Academy of Science of Moldova)	Society; Technology and innovation	Moldova	2002–2010

Study	Reference	Theme	Geographical coverage	Time horizon
Forecast of Sciense, Technology and Innovation Based Economical Development of Ukraine [Zvedenyy Prognoz Naukovo-Tehnologichnogo ta Innovaciynogo Rozvytku Ukrainy]	Gejets V.M. et al., 2007 (Ukrainian Academy of Sciences, Dobrov Science and Technology Potential and History of Sciences Research Center)	Technology and innovation	Ukraine	2010, 2015
Perspectives for Technology and Innovation Based Industrial Development of Ukraine [Perspektyvy Innovaciyno-Technologichnogo Rozvytku Promyslovosti Ukrain]	Fedulova L., 2008 (Economy of Ukraine Journal)	Technology and innovation	Ukraine	2025
Forecasting the Impact by Innovation Factors on Economic Development of Ukraine [Prognozuvannya Vplyvu Innovaciynyh Factoriv na Rozvytok Economiky Ukrainy]	Aleksandrova V.P. et al., 2007 (Economics and Forecasting Journal, #2)	Technology and innovation; economy	Ukraine	2015
Transport Strategy of the Russian Federation to 2030	Ministry of Transport, 2008	Transport	Russia	2030
Ways of Increasing Efficiency in Cargo Aircraft Exploitation of Ukrainian Air-Transport Enterprises [Shlyahy Pidvyshchennya Efektyvnosti Vykorystannya Parku Vantazhnyh Litakiv Aviatransportnyh Pidpryemstv Ukrainy]	Klymenko H.A., 2007	Transport	Ukraine	2020
Complex Forecast Of Development of Minsk city	Bobkov V.A., Nikitenko P.G., Rubanov A.V., 2002 (Minsk scientific institute of social and economic studies)	Urban issues	Belarus	2020

Caucasus

Study	Reference	Theme	Geographical coverage	Time horizon
Agriculture Sustainable Development Strategy	Ministry of Agriculture of the Republic of Armenia, 2006	Agriculture	Armenia	2015
Demographic Policy Strategy	Ministry of Labour and Social Issues, UN Population Fund, 2008/ongoing	Demography	Armenia	2035
The Future Demographics Azerbaijan	Euromonitor Internation, 2005	Demography	Azerbaijan	2020
Caucasus Business Forecast Report	Business Monitor International, 2008	Economy	Caucasus	2017
Armenia 2020 Scenarios Book	Armenia 2020, 2004	Economy, politics, society	Armenia	2020
Armenia: Studies, Reports and Analysis	Armenia 2020, 2005	Economy, politics, society, other	Armenia	2020
State of the Future	Jerome Glenn, 2009 Azerbaijan Ministry of Communications and IT, The Millennium Project	Economy, Technology	Azerbaijan	2050?
Azerbaijan: 2025	Azerbaijan Diplomatic Academy (ADA), 2009	Energy and Environment	Azerbaijan	2025
Caucasus Environment Outlook (CEO)	UNEP (GRID- Tbilisi), 2002 (UNEP — http://www.grida.no/)	Environment & Sustainability	Caucasus	2032
Possible Social and Economic Impact of HIV/ AIDS Epidemic on the Republic of Armenia	A. Aharonyan, A. Torchyan, 2007 (UNDP — www.undp.org)	Health, demography, economy	Armenia	2020
Pension System Reform Program	Ministry of Labour and Social Issues, 2008	Society	Armenia	2080
Armenia's Tourism Sector	Armenia 2020, 2005	Tourism	Armenia	2020

Central Asia

Study	Reference	Theme	Geographical coverage	Time horizon
Food security in Central Asia: Economic Opportunities, Policy Constraints and Future Challenges	Babu S. and Rhoe V., 2001 (IFPRI — www.ifpri.org)	Agriculture	Central Asia	2020
Central Asia in 2015	CAREC (Central Asia economic cooperation programme), 2005	Economy	Central Asia	2015
Increasing Gains from Trade Through Regional Cooperation in Trade Policy, Transport, and Customs Transit	ADB, 2006	Economy	Central Asia	2015
Central Asia: Perspectives of United Economies	Ilja Shmelev, 2008 (The Asia Strategy Foundation)	Economy	Central Asia	2012
Kyrgyzstan 2025. Strategies and Development Scenarios.	M.N. Omarov, editor, 2005 (International Institute for Strategic Studies under President of the Kyrgyz Republic and the Friedrich Ebert Foundation — http://www.fes.uz/Country/kg.htm)	Economy	Kyrgyzstan	2020, 2025
Central Asia's Economy: Mapping Future Prospects to 2015	Dowling J.M. and Wignaraja G., 2006 (CAREC (Central Asia economic cooperation programme) and Asian Development Bank)	Economy; politics	Central Asia	2015
The Future of Central Asian Gas	RPI, 2002 (RPI — http://www.rpi-inc.com/index.html)	Energy	Central Asia	n/a
Central Asia: A Major Emerging Energy Player in the 21st Century	Dorian J.P., 2006	Energy	Central Asia	2015
Export of Energy Resources from Central Asia: State, Problems and Perspectives	The Asia Strategy Foundation, 2008	Energy	Central Asia	n/a
Electricity Demand in Kazakhstan	Atakhanova Z. and Howie P., 2007	Energy	Kazakhstan	n/a
Program of Energy Development till 2030	Ministry of Energy of Kazakhstan, 2007	Energy	Kazakhstan	2030
Strategy of Sustainable Energy Use and Renewable Energy Development	Ministry of Environmantal Protection of the Republic of Kazakhstan, 2008	Energy	Kazakhstan	2024
Energy of Tajikistan: Present and Future	Timur Valmat-Zade, 2008 CA&CC Press (Sweden)	Energy	Tajikistan	2012
Strengthening Co-operation for Rational and Efficient Use of Water and Energy Resources in Central Asia	UNECE/UNESCAP, 2004 (UNECE — http://www.unece.org/; UNESCAP — http://www.unescap.org/)	Energy; water	Central Asia	2020

Study	Reference	Theme	Geographical coverage	Time horizon
Central Asia Human Development Report 2005: Bringing Down Barriers: Regional Cooperation for Human Development and Human Security	UNDP Regional Bureau for Europe and the Commonwealth of Independent States, 2005 (UNDP — www.undp.org)	Environment & Sustainability	Central Asia	2025
Sustainable Development concept of the Republic of Kazakhstan	Government of Kazakhstan, 2007	Environment and sustainability	Kazakhstan	2024
The Central Asian States in the Era of Globalisation: Searching for Development Strategies	Nur Omarov, 2008 (Friedrich Ebert Stiftung http://www.fes.uz/Publications/p2008.htm)	Politics; economy	Central Asia	2025
Central Asian Integration: Myth or Reality?	Nur Omarov, 2007 (Institute for Public Policy in Bishkek)	Politics; economy	Central Asia	2025
Strategicheskaya matritsa Kazahstana [Kazakhstan's Strategic Matrix]	Ageev A.I. and Kuroedov B.V., 2005 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Politics; economy	Kazakhstan	2080
Strategicheskaya matritsa Kyrgyzstana [Kyrgyztan's Strategic Matrix]	Bayshuakov A.B., editor, 2007 (Institute of Economic Strategies — www.inesnet.ru/eng/)	Politics; economy	Kyrgyzstan	2020
The Future Demographics in Kazachstan	Euromonitor International, 2008	Population	Kazakhstan	to 2020
Science and Technology in Kazakhstan: Current Status and Future Prospects	Committee on Science and Technology in Kazakhstan, Office for Central Europe and Eurasia, National Research Council, 2007 (Development, Security, and Cooperation (DSC) Policy and Global Affairs (PGA))	Science/ Technology	Kazakhstan	n.a.
Water-related Vision for the Aral Sea Basin for the Year 2025	UNESCO, 2000 (UNESCO — http://www.unesco.org/)	Water	Central Asia + Afghanistan & Iran	2025
Aral Sea Basin Case Study	The Dialogue on Water and Climate, 2002 (http://dialogue.icwc-aral.uz/)	Water	Central Asia	2020
Irrigation in Central Asia: Social, Economic and Environmental Considerations	Bucknall et al., 2003 (The World Bank — http://www.worldbank.org/)	Water	Central Asia	2010, 2015 for some analysis

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EEA, 2007a, *The pan-European environment: glimpses into an uncertain future,* European Environment Agency Report 4/2007.

EEA, 2007b, *Research Foresight for Environment and Sustainability* (http://scenarios.ew.eea.europa.eu) accessed 13 December 2010.

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