

## Annex 9 — Slovenia country case study

BLOSSOM: Support to analysis for long-term governance and institutional arrangements





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The opinions and conclusions presented here are the sole responsibility of the consultants and do not necessarily reflect those of EEA.

# Acronyms

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BLOSSOM	<b>B</b> ridging <b>L</b> ong-term <b>S</b> cenarios and <b>S</b> trategic analysis – <b>O</b> rganisation and <b>M</b> ethods
EEA	European Environment Agency
EU	European Union
GODEA	Government Office for Development and European Affairs
IMAD	Institute for Macroeconomic Analysis and Development (Slovenia)
NRDP	National Research and Development Programme
SDS	Slovenia's Development Strategy (2005)

# 1 Introduction

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This report sets out the current status of the main institutional and governance arrangements for futures thinking in Slovenia with respect to environmental — and environment-related — policymaking. It is an update to the case study report completed under the previous Blossom project in October 2009 and is based on a review of changes in documentation and other available resources, and a set of interviews with relevant officials and experts in government departments, agencies and institutions indirectly involved in scenario development, foresight and futures thinking. The aim has been to understand better how futures thinking is undertaken in Slovenia, and if and how these relate to and influence environmental policymaking. The report particularly tries to identify the success factors in ensuring futures thinking is embedded in environmental policymaking; however, barriers to success are also identified. It does not seek to explore the whole range of futures work, only those aspects of most relevance to environmental policymaking, and is focused on the institutional and governance structures, not the details of the futures studies or the quality of those studies.

In 2009, the previous version of this report, along with similar reports for seven other EU Member

States, formed the basis for further cross-country analysis during the summer of 2009 to identify common themes and issues in institutional and governance arrangements, as well as distinctive aspects of different cultural and administrative traditions and approaches to futures thinking. This updated report has been used to inform a revised cross-country analysis, which has also drawn upon new case studies in four additional countries: Germany, Hungary, Austria and Portugal.

An important caveat needs to be made: governmental futures thinking in its current format has only recently been established and is only starting to form within a clear and organised structure that lends itself to a targeted institutional evaluation perspective.

This study presents the results of a first attempt to synthesise and evaluate current practices within a context of limited time and resources it is meant to shed light on important developments and to stimulate discussion but it is not meant to be understood as a comprehensive and concluding assessment. The same is true for the analysis of the impacts of futures thinking on decision-making.

## 2 The landscape for long-term thinking and governance in Slovenia

The national government in Slovenia has undertaken several futures/foresight initiatives over the past decade. As yet, these have been isolated studies and exercises: Slovenia does not have a fixed government programme for study and work on the future and foresight.

The initiatives that have been carried out include:

- a technology foresight study commissioned by the Ministry of Education, Science and Sport and the Ministry of the Economy, between 2004 and 2005, to identify key areas of research for the government to support;
- *Vision Slovenia*, a project and report completed before accession to the EU in May 2004: this initiative asked how Slovenians would like Slovenia to be 10–15 years after joining the EU and what must be done to achieve this vision;
- *Slovenia's Development Strategy (2005) (SDS)*, adopted by the government 2005, which sets the the path and objectives of Slovenia's development until 2013;
- *Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change*, a comprehensive report commissioned by the Slovenian Office for Growth to generate thinking about the effects of, and reaction to, climate change in the country;
- recently launched studies to model a low-carbon economy in Slovenia, in line with EU climate change objectives for 2020 and 2050.

In addition to these government initiatives, an independent research association based in Slovenia, the Bled Forum of Europe, has carried out foresight and futures studies and organised regular European conferences on this theme.

On the whole, Slovenia's experience with futures and foresight thinking is quite recent, as this work has all taken place over the past decade. One likely reason is the legacy of government planning under the former Yugoslavia, a regime that is remembered in particular in terms of its economic decline, political break-up and the ensuing conflicts, which cost thousands of lives, displaced millions of people

and left a difficult legacy of division and mistrust for future generations.

Slovenia's independence came fairly peacefully in the early 1990s and the country is now a social and democratic republic with separate legislative, executive and judicial branches. The parliament is composed of the elected National Assembly that has legislative power and the National Council whose members represent groups in society including employers, employees, farmers, crafts and trades, artists and other independent professions, non-commercial fields and local interests (the latter make up about half of its members). The final legislative power rests with the National Assembly, though the National Council has the power to delay legislation passed by the Assembly, which, in this case, must reopen its discussions.

The National Council represents a consociative structure of governance, with a strong role for specific interest groups. However, Slovenia's government has been changing to a more open and less formal system of engagement with civil society. Here, the National Council has taken the lead; in the period from 2004 to 2008, 11 public consultations and conferences with civil society were organised to encourage public discussion on important issues including the role of the media, cultural heritage and tourism, language policy, theatre syndicates in the EU, national programme for culture. These discussions aimed to involve a wide range of groups in the policy process, and representatives of many organisations, societies and specialist institutions participated with contributions that enriched government policies and strategies. The National Council publishes conference proceedings, including papers presented and summaries of discussions.

In the second half of the 1990s, Slovenia started the process of EU integration: this was successfully accomplished in May 2004 with accession to the European Union (EU) along with nine other new members. Many recent changes have been directly or indirectly influenced by the EU legal and institutional system: in some fields of political and public life as well as in many policy areas,

adaptation to EU standards has transformed the structure of laws and regulations.

### 2.1 Responsibilities

Several national offices have commissioned or led futures and foresight initiatives in Slovenia.

#### 2.1.1 Broad-based, strategic studies

The *Vision Slovenia* was launched by the **Slovenian Government Office for European Affairs** in the early years of this decade. Fedor Cerne, undersecretary of the office at the time, was inspired by an OECD conference in 2002 where the question was asked: "What would Slovenia like to achieve as an [EU] Member State?" The Office for European Affairs coordinated the *Vision Slovenia* study, which looked at answers to this question. Under an agreement with the Institute for Macroeconomic Analysis and Development, *Vision Slovenia* was to become part of Slovenia's development strategy.

The **Institute of Macroeconomic Analysis and Development** (IMAD) is an independent government office whose Director answers directly to the President of the Government. The main function of the institute is to forecast short and medium-term macroeconomic trends and its main tasks include monitoring, analysing and evaluating current trends, as well as the economic, social and environmental dimensions of development; preparing short and medium-term forecasts of macroeconomic aggregates (twice a year, by 15 April and 15 October); preparing analyses that serve as a basis for strategic decision-making and economic and development policy measures and research work. The institute's spring 2010 forecast, for example, makes economic projections through to spring 2012 <sup>(1)</sup>.

The IMAD was responsible for the preparation of Slovenia's Development Strategy to 2013 and the subsequent development reports that review its implementation (Box 1).

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<sup>(1)</sup> Further information is available online (<http://www.umar.gov.si/en>) (Urad RS Slovenije za makroekonomske analize in razvoj).

**Box 1 Slovenia's Development Strategy**

The strategy sets five development priorities.

1. A competitive economy and faster economic growth.
2. Effective generation, two-way flow and application of the knowledge needed for economic development and quality jobs.
3. An efficient and less costly state.
4. A modern social state and higher employment.
5. Integration of measures to achieve sustainable development.

It should be noted that the last priority includes measures for balanced regional development, health conditions and better spatial management. While environmental objectives are not a central part of the strategy's objectives, these have been developed and expanded over the course of the strategy's implementation.

The strategy does include important structural reforms, such as increasing labour market flexibility and improving social protection systems. More generally, the strategy proposes a 'new model' for development, as shown in the table below:

<i>Current development model</i>	<i>Vision of the new social development model</i>
regulation and bureaucratisation of markets	deregulation and liberalisation of markets
restrictive business environment	promoting the creation and growth of enterprises
relatively closed financial markets	open financial markets and competition
insufficient flexibility of the labour market	a more flexible labour market
collective social security systems	individual needs and responsibility
corporatism of large social partners	open, broad-based partner co-operation
bureaucratic and hierarchical public administration	decentralisation and public-private partnerships
focus on macroeconomic and social balances	focus on sustainable development based on structural reforms and a more dynamic society

Each year, the IMAD publishes a development report, a document that monitors the implementation of the Slovenian Development Strategy (SDS). The most recent report from 2008 is divided into two parts — the first is an overview of the implementation in the five development areas and the second documents progress by means of indicators of Slovenia's development. The report provides some insight into the integration of environmental criteria with sectoral policies and gives an updated overview of the environmental objectives of the SDS: these include reducing energy intensity and increasing the use of renewable energy resources, improving resource intensity and promoting waste recycling. Promoting environmental technologies will contribute to achievement of the objectives. For example, in the area of transport, the aim is to promote sustainable modes of mobility and boost the use of public passenger transport. Another goal, nature protection, includes halting the decline in biodiversity and enforces Slovenia's natural spatial quality as a quality for the entire EU.

2.1.2 Climate change studies

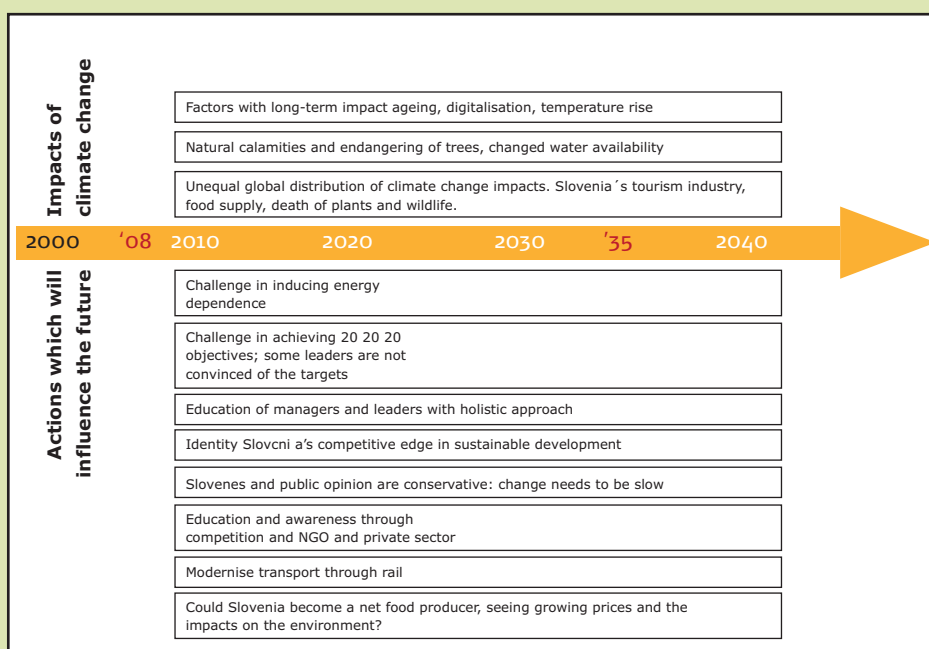
Slovenia's Government Office for Growth led the 2008 study on *Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change* (Box 2).

In December 2008, the Office for Growth merged with the Office for European Affairs to form the

current **Government Office for Development and European Affairs (GODEA)**. In the field of development, GODEA is responsible for coordinating and monitoring implementation of Slovenia's development strategy and it performs the tasks related to economic and social reforms and development. It provides expert assistance to government ministries and assists in the drafting of acts and the implementation to achieve the

**Box 2 Addressing climate change in development scenarios to 2035**

This study identified both climate change impacts in coming decades as well as a series of actions that will influence the national climate change responses



**Source:** Development Scenarios for Slovenia to 2035: Trends and opportunities in times of climate change.

The study identified adaptation to climate change as one of the most important actions that the country needs to take. The study's results emphasised that mitigation and adaptation to climate change are closely related and, equally important, an idea that is only slowly entering the decision-making process in Slovenia. Slovenia has made a few recent policy measures for adaptation. The Ministry for Agriculture, Forestry and Foods has prepared an action plan to adapt Slovenian agriculture and forestry to climate change. In addition, the government has created an inter-ministerial group for the reduction of the effects of climate change. In general, there doesn't appear to be a direct link between the study and these actions for adaption: rather, all of these initiatives arose as responses to the high European and international profile of climate change.

The study identified, as Slovenia's second biggest challenge, the increasing greenhouse gas emissions from road transport. This is a particularly difficult question as Slovenia is a transit country for freight traffic in particular.

development strategy and its reforms. The office also led preparations for the National Development Plan of the Republic of Slovenia 2007–2013, which provided the basis for the national strategic reference framework and operational programmes for the implementation of EU Cohesion Policy in Slovenia 2007–2013. GODEA leads the inter-ministerial coordination of strategic documents for EU budget funds. The office also coordinates and monitors the implementation of the Resolution on national development projects for the period 2007–2023 and coordinates the preparation of programmes for the Lisbon Strategy objectives with Slovenian bodies and EU institutions. The office also has further tasks in the area of European cooperation.

In 2010, GODEA and the **Government Office for Climate Change** jointly launched two research projects to analyse the effect of EU climate change goals on Slovenia's economy and identify policy options to meet these goals (Box 3). These studies are intended to support the preparation of a long-term, low-carbon strategy for Slovenia.

### 2.1.3 Technology foresight

The **Ministry for Science and Technology** has carried out several foresight activities over the past decade. Between 1999 and 2001, three conferences provided information on foresight work in other countries (including Ireland, Hungary and Sweden), preparing work in Slovenia. A pilot study was then carried out in 2001. Following that, a technology foresight project was launched in 2003 <sup>(2)</sup>.

More recent technology foresight activities have been conducted by the Competitiveness Council in 2008; this process was coordinated by the then Government Office for Growth (now part of GODEA). Experts from academia and the corporate sector have participated in this more recent work.

### 2.1.4 Environmental policy

Based on the information available, the main government body for environmental policy, the Ministry for Environment and Physical Planning, has not led major futures-oriented work. The Ministry ensures that environmental infrastructure standards and measures are in line with EU legislation, especially regarding adequate water

#### Box 3 Modelling a low-carbon future

The first study, led by GODEA, will analyse the impact of meeting the EU's 2020 climate change goals, which include a 20 % reduction in greenhouse gas emissions, a goal that would increase to 30 % if other advanced economies adopted similar targets. This work is intended to shape Slovenia's next development strategy, which would run from 2014 to 2020.

The second project will look at the implications of the EU's long-term goal to drastically cut greenhouse gas emissions by 2050 as part of Europe's contribution to the global goal of keeping the rise in the world's temperature below 2 °C.

Both studies will use quantitative modelling to forecast low-carbon pathways.

supplies, water quality, and the sustainable exploitation of surface and subterranean waters and the sea, as water is one of Slovenia's most important natural resources. It appears that the Environment Agency, which operates under the Ministry of Environment and Physical Planning and manages environmental data, has not led any major futures-oriented studies.

### 2.1.5 The Bled Forum

Outside the government, the **Bled Forum on Europe** organises a yearly foresight conference on the challenges that Europe is facing, including issues such as the role of the EU in the world, human rights, the rule of law and socio-economic development. The first meeting in Bled was held in 1996, and brought together NGOs, government bodies and the business sector. An association was established in 2002 and, in 2006, it became a research association under Slovenian law. The Forum is a member of the International Futures Committee. Its annual conference is held in March and the themes change each year: in 2008, the conference discussed climate change and foresight; in 2009, the role of culture in knowledge society; and in 2010, European foresight. One of the objectives was to present examples of good practice in policymaking and utilisation of foresight results <sup>(3)</sup>.

Futures thinking and foresight are not explicitly institutionalised within the government of Slovenia.

<sup>(2)</sup> Darja Piciga (Ministry of Higher Education, Science and Technology), 'State of foresight activities in Slovenia', presentation to the JRC-IPTS Support for Foresight in NMS and CCs – 1st Steering Group meeting, Brussels, 27 July 2005.

<sup>(3)</sup> The Bled Forum in Europe ([http://www.bled-forum.org/index\\_eng.html](http://www.bled-forum.org/index_eng.html)).

Thus, there is not yet an institutional routine in Slovenia whereby futures thinking is undertaken regularly and fed into and implemented in policymaking. Some indirect connections exist and there is a framework of several institutions that have been involved in scenario planning and foresight exercises that have fed into the Slovenian development strategy. But, there is no systemic exchange between these institutions, so even the exercises that have introduced futures thinking, though receiving a positive response from the participants, did not take root in a governmental institution.

## 2.2 Resources, staffing involved

The resources available for undertaking futures studies are rather modest, compared to spending for other areas. Details are available for three of the projects described in Section 2.1 (see Table 1).

For *Vision Slovenia*, the then Office of European Affairs coordinated the work, with support from a consulting company based in Belgium. For the development scenarios, a working group of four officials together with a small group of experts coordinated the process. A consulting firm from the United Kingdom supported this process. The work by the Ministry for Science and Technology on technology foresight in 2004 and 2005 cost approximately EUR 65 000 <sup>(4)</sup>.

## 2.3 Stakeholders and external relationships

Futures and foresight initiatives in Slovenia have involved strong participation by societal stakeholders.

For example, in the preparation of the Slovenian development strategy, the government organised a wide public debate, starting with a consultation meeting held by the prime minister at the beginning of 2004 (Box 4). The participants in the meeting included representatives of business, science, culture and other social stakeholders. This meeting was followed by a number of spontaneous debates in the media and by diverse interest groups. Due to the document's strategic nature and the need to test its contents, the Secretariat of the Sustainable Development Council was given the role of managing public discussion. Five topic specific discussions were organised with groups of social stakeholders.

For *Vision Slovenia* (Box 5), the study prepared before Slovenia's accession to the EU, the government organised two workshops in the space of nine months (March to December 2003): the first introduced the methodology and idea behind the initiative and the second formulated a broad vision that was intended to be an inspiring force for action for Slovenian society. The official who led the *Vision Slovenia* process (Fedor Cerne) was, at the time,

**Table 1 Resource allocation for key environment-related futures work in Slovenia**

Project	Established	Resources
Vision Slovenia	2003–2004	Government coordinator: part-time External consultants (Prospex) Workshop participants
Development Scenarios for Slovenia to 2035	2008	Coordination: four officials External consultants (scenario development) Publication costs Total external costs: about EUR 32 000
<i>Technology foresight</i>	2004–2005	Staff: not known Resources: about EUR 65 000

<sup>(4)</sup> Stanovnik, P. and Kos, M. (undated), 'Technology Foresight Slovenia 2020', The European Foresight Monitoring Network, Foresight Brief, No 071.

#### Box 4 Communication

Each initiative has had its own approach to communicating its work. Key examples are given below, but see also Appendix 1.

- For the SDS, supporting documents as well as transcripts of public debates are available on the IMAD website (<http://www.gov.si/umar>).
- In the preparation of *Development Scenarios for Slovenia to 2035*, questions were posed to the general public via a web blog.

responsible for cooperation between the government and NGOs in the preparations for Slovenia's accession to the EU.

The preparation of *Development Scenarios for Slovenia to 2035* had several layers of stakeholder engagement:

- in an initial stage, 10 national opinion makers were interviewed on seven questions about the history of Slovenia and relevant issues concerning the future;
- the organisers made these questions available to the public via a blog;
- a two-day, interdisciplinary workshop with the active participation of 30 stakeholder representatives played a key role in developing scenarios;
- experts across different fields were invited to comment on the first draft of the work,
- the final workshop sought to present the results to high-level policymakers.

The preparation of *Development Scenarios for Slovenia to 2035* (Figure 1) directly involved stakeholders in scenario development, in workshops where participants included representatives from the government, the private sector, international and national NGOs and foundations. These groups were active across the main sectors of society, including energy, economy, agriculture, transport, education, finance, and economy.

#### Box 5 Vision Slovenia

*Vision Slovenia* was both a process and a report prepared in 2004 that asked how Slovenians would like Slovenia to be 10–15 years after joining the EU and what must be done to achieve this vision. The goal was to raise awareness of the coming EU membership in order to energise society to ensure the future success of Slovenia as a member of the European Union. Some of the overarching goals were to:

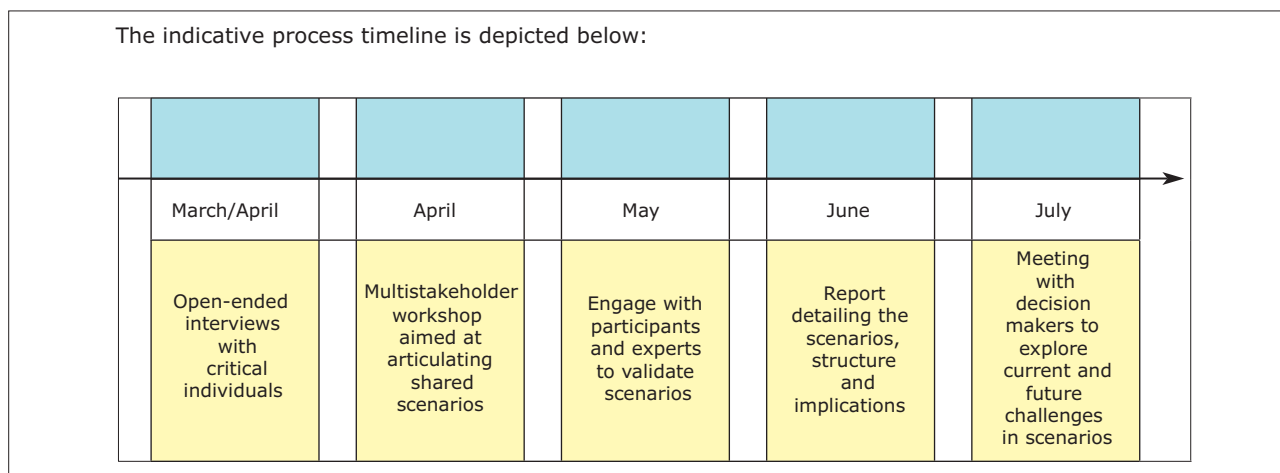
- clarify and make explicit the implications for Slovenian society and its members;
- identify what actors within society need to do to turn Slovenia's EU membership into a success — for themselves as well as for Slovenia as a whole;
- create incentives and support for implementation;
- involve society and its actors as much as possible.

The workshop process was an interactive and hands-on experience designed:

1. to identify and explore the current reality and its actors (people, organisations and entities involved in or contributing to the current reality);
2. to identify the driving forces of the current reality (the structural variables driving the current reality and the future of climate change);
3. to develop a range of plausible scenarios on the future of climate change in Slovenia.

Three expert presentations were made and provided input to the discussion: one addressing economic issues, one on agriculture and the third provided an overview of energy systems. The participants were divided into three parallel groups, each developing specific scenarios addressing what the consequences of decisions taken today might be.

**Figure 1 The timeline for the development scenarios for Slovenia to 2035**



The 'Technology Foresight 2020' study instead used a Delphi approach to gain input from experts: in the study, about 2 000 experts from business, academia and public research institutes were interviewed, in each case asking about the priorities for national technology research <sup>(5)</sup>.

### 2.4 Parliamentary and external scrutiny

In parliament, the Committee for Environment and Spatial Planning reviews government proposals

for legislation and action in these fields. Parliament does not have a committee specifically for the future or foresight. It appears that awareness of futures-oriented studies in parliament is low, as it is in the government.

The Bled Forum communicated the results of its 2008 conference to the parliament. This occurred several months before national elections, and according to Blaz Golob of the Forum, several party platforms in the elections that followed were inspired in part by the conference recommendations.

#### Box 6 Background papers for Slovenia's Development Strategy (2005)

The IMAD and other bodies prepared a series of background papers for the SDS. Two of these papers were prepared by an economist visiting the IMAD from the Netherlands Bureau for Economic Policy Analysis (CPB):

- Egbert L. W. Jongen, 2004, 'An analysis of Past and Future Economic Growth in Slovenia', IMAD Working Paper No 3/2004;
- Egbert L. W. Jongen, 2004, 'Future GDP Growth in Slovenia: Looking for Room for Improvement', IMAD Working Paper No 4/2004.

The first paper forecasts Slovenia's economic growth to 2013, based on estimates of growth in factors of production such as human capital. It forecasts that growth will fall between in the range 3.1 to 4.0 %, and notes that a higher growth rate (4.6 %) is needed if Slovenia is to reach the EU 15 average by 2013.

The second paper reviews factors that hinder faster growth in Slovenia, here too using a quantitative analysis. The factors identified include a low level of inward foreign direct investment; a slow uptake of new technologies in business; difficulties in enforcing contracts; and low use of credit in business.

<sup>(5)</sup> Stanovnik, P. and Kos, M. (undated), 'Technology Foresight Slovenia 2020', The European Foresight Monitoring Network, Foresight Brief, No 071.

**Box 7 Modelling of the EU 2020 climate change targets**

Slovenia recently launched two modelling projects, the first to look at medium-term prospects (to 2020) and the second at long-term prospects (to 2050).

The first study, led by GODEA, will use the GEM-E3 model to analyse the impact of meeting the EU's 2020 climate change goals, which include a 20 % reduction in greenhouse gas emissions, a goal that would increase to 30 % if other advanced economies adopt similar targets.

The second project, which will look at the implications for Slovenia of the EU's long-term goal to drastically cut greenhouse gas emissions by 2050, is led by the Office for Climate Change. It will use the 'Ifs' model developed at the University of Denver. The Office chose the IFs model as a good tool for a small economy, as many EU-wide models do not provide sufficiently results at a sufficiently fine scale. Moreover, results can be studied in terms of global trends, as the model was used in the UNEP-GEO report scenarios.

Several research institutes in Slovenia are participating in the work, and researchers from the University of Denver will provide training on the IFs model. The project will develop national scenarios that can include policy instruments such as the introduction of a carbon tax and increased spending on research and development. These national strategies will then be analysed in terms of the four UNEP-GEO strategies. The overall goal is to analyse Slovenia's options for policies to meet the 2050 target.

Once its work is under way, Slovenia is considering holding a workshop on the use of the IFs model for other small, European economies.

## 2.5 Relative balance between quantitative and qualitative approaches

Some futures work in Slovenia has used a strongly quantitative approach, for example the background papers for *Slovenia's Development Strategy* (2005) (Box 6), while others have followed a qualitative approach.

### 2.5.1 Quantitative methods

The preparation of the SDS (2005) drew on several medium-term, quantitative economic analyses of Slovenia's economy and its growth prospects (Box 6).

In addition, the two recently launched studies for a low-carbon future use a modelling approach (Box 7).

### 2.5.2 Qualitative methods

Other future initiatives in Slovenia used qualitative methods. This was the case for *Vision Slovenia* (2004) and also for the *Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change* (2008). For example, *Vision Slovenia* was

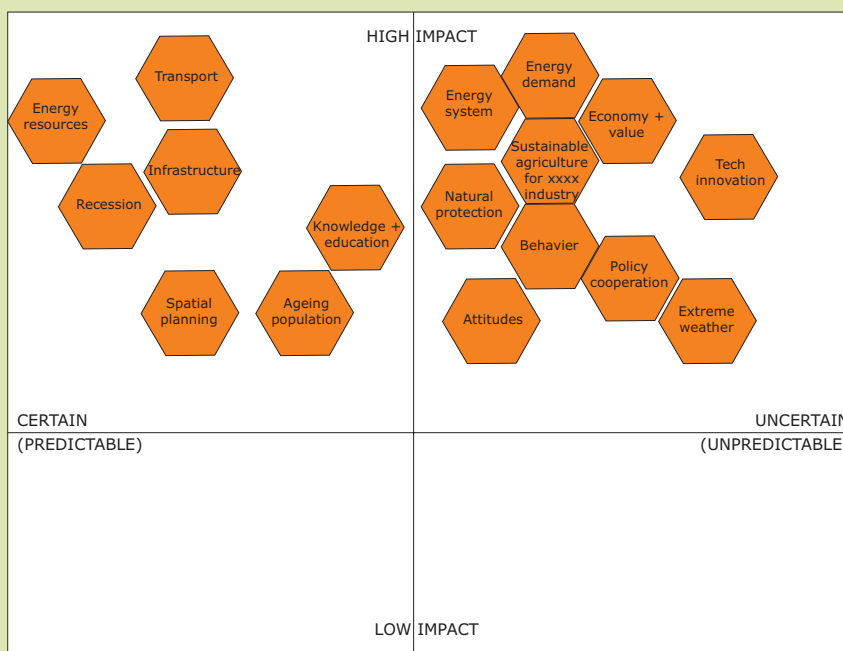
prepared using a qualitative method that placed a strong emphasis on expert opinions.

The preparation of the *Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change* used a qualitative approach. The work initially gathered a lot of background information from experts. However, the proponents saw that a quantitative approach would not be as relevant as originally envisioned: without a good qualitative model there are too many 'unknown unknowns', which are hard to integrate into quantitative work. Thus, the proponents decided to start with a qualitative approach to scenarios and then, in a second stage, to see which scenario could be developed further on a quantitative basis. (While this approach has not been pursued, the 2035 study has provided background for the recent modelling studies that have been launched by GODEA and the Office for Climate Change.)

The scenarios were developed in large part through a stakeholder workshop (Section 2.3). The participants identified three draft scenarios describing national response to climate change (Box 8).

**Box 8 The scenarios in the *Development Scenarios for Slovenia to 2035: Trends and opportunities in times of climate change***

The three scenarios for this study were developed based on a clustering exercise that used a set of theoretical newspaper headlines of the future. These headlines were constructed using a set of driving forces, which are presented in the diagram below in terms of their impact and certainty (the diagram and the study as a whole focused only on the driving forces that were considered to be of high impact).



The following three scenarios were developed based on this work.

- Clueless — a scenario showing pervasive lack of government action and denial of any impending environmental impacts, hoping that the problems solve themselves.
- Green Oasis — this scenario sees the best possible outcomes, which are through early technology-driven action and through attitudinal and value changes.
- Chameleon — this is an evolutionary story: small incremental adaptations and accommodative responses to deal with the impacts and consequences of climate change without taking a fully proactive stance to avert the impacts in the long term.

Further information on the scenarios is found in Appendix 3.

## 3 Analysis

### 3.1 Relationship between futures programmes

While there have been few formal links among the projects discussed here, several studies have close informal links to Slovenia's development strategy and to the Government Office for Development and European Affairs (GODEA). For example, *Vision Slovenia* was prepared at the time that the strategy was being completed, and it influenced the strategy. The *Development Scenarios* were prepared in part to supplement the strategy by exploring climate change issues, an area that it did not treat in depth. Although GODEA did not follow through with the quantitative work for the *Development Scenarios*, the office is a co-leader role of the two recent projects to model a path to a low-carbon economy.

More generally, both the development strategy as a policy process as well as climate change as an issue have thus linked forward-looking studies.

Further links, however, between future/foresight initiatives in Slovenia have not been identified, such as links between technology foresight and other studies. Moreover, while examples of both strong quantitative and strong qualitative methods for futures analysis have been seen, as yet projects have not combined quantitative and qualitative approaches.

### 3.2 Impact on policymaking

The initiatives reviewed here have had a quite varied impact on policymaking in Slovenia. For the most part, however, these future and foresight initiatives have had only weak and indirect links to environmental policy.

*Vision Slovenia* was a participatory project whose goal was to develop a vision on how the country could become a successful (and visionary) member

of the European Union. Its results may have influenced government policy indirectly, due in part to the fact that this project was organised by the office coordinating Slovenia's preparations for EU membership.

In addition, the document became a part of *Slovenia's Development Strategy* (2005) in that it is quoted in the introduction of the published version. However, a clear and direct link between *Vision Slovenia* and policymaking, including in the strategy itself, is not evident: its influence appears instead to have been indirect, providing guidance and ideas. This is perhaps to be expected, considering that *Vision Slovenia* was the first major scenario study carried out in Slovenia; moreover, it focused on broad topics, such as the country's identity within the EU.

The discussions in *Vision Slovenia* did, in one case, have an impact at the project level. According to Fedor Cerne, the leader of the *Vision Slovenia*, discussions included a proposed wind energy project near a Natura 2000 site. The discussions in the *Vision Slovenia* process reached a consensus that the project at this location would harm crucial assets for future generations <sup>(6)</sup>. The project was subsequently halted: here, *Vision Slovenia* had an indirect effect; an NGO lawsuit was the immediate cause <sup>(7)</sup>.

*Slovenia's Development Strategy* became a core element of government policy and, thus, the future studies that supported its preparation had a direct impact on policymaking.

The *Scenarios for Future Development in Slovenia: Trends and opportunities in the times of climate change* were linked to *Slovenia's Development Strategy* (2005). As climate change issues were becoming more important, the government Office for Growth commissioned *Development Scenarios for Slovenia to 2035* to generate thinking about the future of climate

<sup>(6)</sup> Prospex bvba, *Vision Slovenia: Creating and reaching a vision for a successful Slovenia*, undated, p. 3.

<sup>(7)</sup> A Slovenian NGO for the protection of birds, Drustvo za opazovanje in proučevanje ptic slovenije, sued to stop the wind farm located near Volovja Reber, a site for both migratory birds as well as golden eagles.

change. For this, it sought inputs from a broad range of national experts and stakeholders.

Although the proponents of that report reported that the government's response to its results has been disappointing (possibly because the report was distributed at the same time as Slovenia's 2008 national elections, which led to a change in government), Slovenia has recently followed up on this topic through the two recently launched projects to model a path to a low-carbon economy. It is notable that these projects respond to the EU's long-term objective of moving to a low-carbon economy. The goal is to use the results of the two projects to prepare Slovenia's long-term strategy for a low-carbon economy. Moreover, the 'Technology Foresight 2020' study is intended to help shape Slovenia's next development strategy, which will probably run from 2014 to 2020, in line with the next EU budget cycle.

Slovenia's 'Technology Foresight 2020' project has had a strong link to policy: this study influenced the priorities in the National Research and Development Programme (NRDP) 2006–2010. According to one official involved in the process, the initial priorities identified in the NRDP followed the classification of R&D priorities in the EU framework programmes and 'borrowed' from these EU documents where justified: the foresight project was one source of argumentation in this process. After intensive discussions of different possible priority R&D fields in expert groups and

with the academic and business communities (the latter in particular were not a major part of the 2004–2005 technology foresight project) other priority areas were also elaborated. Notably, these areas included technologies in the domains of energy and environmental protection, and in particular priorities suggested in the foresight project, such as 'Environmentally adequate (correct) technologies and sustainable economy' and 'Sustainable construction'. The foresight results also influenced priorities in the areas of information and communication technologies (ICT) and health and life sciences, among others.

Further, interlinkages are visible, as the NRDP supports continuation of the technology foresight programme under its research and innovation policy measures.

Here, too, however, two authors of the study talk of an 'implementation gap'. The analysis of the study's Delphi interviews led to proposals for new research priorities in Slovenia: for example, in areas such as sustainable construction and better mobility, including specific suggestions such as integrating quality shipment transport systems into the railways. However, the authors report that 'top political elites and ... academic lobbies' proved resistant to incorporating many of these ideas into policy documents setting research priorities, preferring instead to maintain the status quo<sup>(8)</sup>.

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(8) Quotes from Stanovnik, P. and Kos, M., 'Technology Foresight Slovenia 2020', The European Foresight Monitoring Network, *Foresight Brief* No 071. Further information taken from Stanovnik, P. and Kos, M., *Technology Foresight in Slovenia*, Institute for Economic Research, Working Paper No 27, Ljubljana, 2005.

## 4 Conclusions

### 4.1 Success factors

Several futures-oriented projects have had an influence on policymaking in Slovenia. Among the key reasons for their success are the following.

For the work on technology foresight, which has had a strong influence on policymaking, forward-looking analysis was embedded into the policy process. Moreover, technology foresight was carried out over several years and through several different projects, from initial conferences to a pilot study to a full study.

For two futures studies, *Vision Slovenia* and the *Development Scenarios, Slovenia's Development Strategy (2007–2013)* provided a common platform and linked the studies to a policy process, even though it appears that their overall influence on the development strategy was not strong.

Work on the upcoming development strategy (which will probably run from 2014 to 2020) provides a platform for the recently launched work to analyse medium-term (2020) pathways that lead to reductions in Slovenia's greenhouse gas emissions. Slovenia's Government Office for Development and European Affairs (GODEA), which coordinates the development strategy, is playing an important role in leading this study, as it has done previously. GODEA is also playing a role in coordinating current technology foresight work. Thus, while Slovenia does not have a central body charged with futures-oriented analysis, a central government office is involved in the important recent initiatives at national level.

Slovenia's work on low-carbon pathways shows the importance of the EU's climate goals in driving national futures-oriented analysis. It can be noted that for technology foresight as well, Slovenia's work followed similar activities in other EU and then candidate countries. In both cases, it appears that policymakers in Slovenia have taken these EU processes and used futures-oriented analysis to consider how to apply them at national level.

Another positive factor in Slovenia is that several studies have engaged stakeholders in discussions, for example in the development of scenarios (for the *Development Scenarios*). Stakeholder participation may have helped to disseminate the ideas that came up in workshops.

Finally, many parts of government and society in Slovenia appear to be interested in taking a strong role in terms of shaping the future. This is seen in the work of the Government Office for Climate Change, which is now studying the long-term transition to a low-carbon economy. Moreover, *Slovenia's Development Strategy* states that:

*Assuming responsibility for tomorrow's development starts by assuming personal responsibility. Slovenia is now facing the decision on whether the history of our future will be a success story or whether we will merely be spectators of what the future of our history has to offer.*

With regard to the strong interest in Slovenia, a special note can be made concerning the Bled Forum, which has brought Europe-wide discussions on the future to Slovenia, has helped to disseminate the idea of futures-oriented studies in the country.

### 4.2 Barriers to success

Until recently, a key barrier in Slovenia appears to have been a lack of demand from politicians and policymakers for future and foresight analysis: several interviews and the reports indicated that politicians and policymakers in general do not understand the value of scenarios and other future studies tools, or this way of working. Scenario studies are often looked down upon as not working in the 'real world' — just interesting exercises that are based on theoretical models.

This problem is evident in the lack of a clear uptake of the results of some of the studies reviewed here. In particular, work on the *Development Scenarios* did not continue as originally planned, apparently due to changes after the 2008 elections. While *Vision*

*Slovenia* was published together with *Slovenia's Development Strategy* (2005), it provided a set of broad, complementary objectives and was not directly related to the strategy's programmes and actions. While the Foresight study had a stronger impact on policy, here too there has been an 'implementation gap'.

The recently launched studies for a low-carbon economy appear to represent a change in direction, and it is notable that these studies respond to ambitious policy goals set at EU level (namely the further reduction in greenhouse gases and a move to a low-carbon economy).

A further barrier, closely tied to the first, is the lack of a programme for future studies within the

government. Thus far, resources have only been used for ad hoc future studies. This has contributed to the lack of exchange of information and learning from between some initiatives, in particular earlier ones.

A further problem, noted by one interviewee, is that stakeholder engagement could be stronger — this is perhaps due to the ad hoc and small-scale nature of most studies so far. (At the same time, as noted above, studies such as *Vision Slovenia* and the 2008 *Development Scenarios* sought to ensure stakeholder participation and the technology foresight initiative received a high number of comments from scientists.)

## 5 References

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Stanovnik, P. and Kos, M., 2005, *Technology Foresight in Slovenia*, Institute for Economic Research, Working Paper No 27, Ljubljana (<http://www.ier.si/files/Working%20paper-27.pdf>).

Šušteršič, J. et al., 2005, *Slovenia's Development Strategy*, Institute of Macroeconomic Analysis and Development (<http://www.arrs.gov.si/en/agencija/inc/ssd-new.pdf>).

# Appendix 1

## Approaches to futures studies

<b>Country: Slovenia</b>		
<b>Title of futures programme(s):</b>	Separate studies: Vision Slovenia Slovenia's Development Strategy (2005) Technology foresight, Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change	
<b>1. Overall governance culture of country</b>	<b>Description</b>	Consociative tradition, with engagement of existing, structured interest groups (e.g. business, labour, farmers) — opening to include broader definition of interest groups.
	<b>Nature of futures organisation(s)</b>	No fixed organisation within government: rather, a set of ad hoc studies in recent years.  One independent group external to government, the Bled Forum.
	<b>Date programme(s) introduced</b>	n.a.
	<b>Responsibility</b>	<i>Both Vision Slovenia and the Development Scenarios were initiated and managed by individual officials within government.</i>
	<b>Resources</b>	Low levels: up to four officials for the Development Scenarios  Resources: up to EUR 65 000 (for technology foresight work)
	<b>Tradition</b>	No true tradition within government
	<b>Parliament</b>	None identified
	<b>Advisory councils</b>	The National Council has provided a forum for discussion of major policy issues, but not necessary for long-term issues.  The Bled Forum discusses long-term issues regarding Europe, and its work can influence Slovenian policy discussions.
	<b>Legal framework</b>	None
	<b>Political framework</b>	Yes, Slovenia has had a medium-term strategy (Slovenia's Development Strategy to 2013); planning for EU budget cycles now provide a slightly shorter-term horizon.
	<b>Role of environmental research/ foresight programmes in providing futures thinking</b>	None identified, though the Development Scenarios focused on climate change issues for the country.
	<b>Actors</b>	Most of the future/foresight studies were led by government officials and involved strong participation of outside experts and groups in workshops or consultation activities.
<b>Perceived institutional need</b>	n.a.	

<b>Country: Slovenia</b>		
<b>2. Institutional structure for environmental policymaking</b>	<b>Relevant government departments, ministers, agencies, etc.</b>	<p>Several bodies:</p> <p>Government Office for European Affairs for Vision Slovenia</p> <p>Government Office for Growth for the Development Scenarios</p> <p>Ministry for Science and Technology for technology foresight</p> <p>In each case, the proponents sought to link the future/foresight work to policy programmes. Results have varied, though in general a strong, direct link has not been achieved.</p>
<b>3. Foresight/scenario culture traditions</b>	<b>Approach to futures thinking</b>	No clear tradition — foresight used for technology; normative approach for Vision Slovenia; exploratory scenarios for Development Scenarios
	<b>Thematic or issue</b>	<p>Sectoral for technology foresight</p> <p>Non-sectoral — focused broadly on national development — for Vision Slovenia and Development Scenarios</p>
<b>4. Summary of programme(s) as a whole, including within agencies</b>	<p>Four separate initiatives were reviewed.</p> <ul style="list-style-type: none"> <li>• A technology foresight study commissioned by the Ministry of Education, Science and Sport and the Ministry of the Economy, starting in 2004, to identify key areas of research for the government to support.</li> <li>• Vision Slovenia, a process and a report completed before the country's accession to the EU in May 2004: this initiative asked how Slovenians would like Slovenia to be 10–15 years after joining the EU and what must be done to achieve this vision.</li> <li>• Slovenia's Development Strategy (2005) (SDS), adopted by the government 2005, which sets the the path and objectives of Slovenia's development until 2013</li> <li>• Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change, a comprehensive report that was commissioned by the Slovenian Office for Growth to generate thinking about the effects of and reaction to climate change in the country.</li> </ul> <p>No evaluations were identified.</p>	

# Appendix 2

## Examples of futures studies

Country: Slovenia		
Futures programme(s):		
<b>1. Description/ Characteristics of future study</b>	<b>Examples of specific studies</b>	Vision Slovenia
	<b>Exploratory/ normative?</b>	Exploratory
	<b>Qualitative/ quantitative?</b>	Qualitative and narrative
	<b>Thematic focus?</b>	<i>Socio-economic</i>
	<b>Specific issue focus?</b>	Slovenia's accession to the European Union
	<b>Spatial/ temporal scale</b>	The key dates were when the workshops were held: First workshop in Ribno 7 and 8 March 2003 Second workshop in Brdo 4–6 December 2003
	<b>Ad hoc/ongoing established futures process?</b>	No established futures processes
	<b>Sector/cross-sector-based?</b>	Cross-sector based
<b>2. Original purpose and application</b>	<b>Science-based/ multiple stakeholders?</b>	Multiple stakeholders
	<b>For what purpose?</b>	It was the initiative of Fedor Cerne inspired by an OECD conference in 2002 with the question: What would Slovenia like to achieve as an EU Member State?
	<b>Requested by a specific entity?</b>	The Government Office for European Affairs
	<b>How used?</b>	The main idea of the study was strategic; to identify what could be the basis for development in the future. Some of the specific issues covered were diversity — natural and cultural, dispersed pattern of profits, investment in infrastructure, and the creation of self-confidence in the local population and also in terms of unique national identity that has a specific local story.
	<b>By whom?</b>	Knowing which clusters had to be covered meant a lot of recommendations from government bodies, academics, NGOs. It was primarily a great experiment of what happens when very different people are brought together to create something.  After the vision was adopted, then there was a different kind of engagement from the stakeholders as they started to believe in it.
<b>3. Outcomes (immediate and long term)</b>	<b>Where and how used in policy (if at all)</b>	It was mentioned in the introduction of the full version of the national development strategy, but not in the published version.

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**Country: Slovenia**


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<b>4. Evaluation</b>	<b><i>Any formal evaluation of effectiveness or updates</i></b>	No
	<b><i>Success factors/drivers</i></b>	Futures organisations will be successful if there is a high level of engagement of the people involved: it is a tool towards sustainable development and also a very practical tool to identify possible futures and in deciding which way to go. It is a tool against the 4-year mandates that are set by politicians.
	<b><i>Barriers to success</i></b>	The question is whether the responsible top authorities can be open to working with futures thinking, to understand the process of commitment that is beyond wishful thinking. The problem is that politicians don't want to hear the suggestions of the ordinary people.

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**5. References**


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**Country: Slovenia****Futures programme(s):**

<b>1. Description/ characteristics of future study</b>	<b>Examples of specific studies</b>	Development Scenarios for Slovenia to 2035: Trends and opportunities in the the times of climate change
	<b>Exploratory/ normative?</b>	Alternative futures
	<b>Qualitative/ quantitative?</b>	Mainly qualitative
	<b>Thematic focus?</b>	<i>Future development</i>
	<b>Specific issue focus?</b>	Climate change
	<b>Spatial/ temporal scale</b>	To 2035
	<b>Ad hoc/ongoing established futures process?</b>	No
	<b>Sector/cross-sector-based?</b>	Cross-sector
<b>2. Original purpose and application</b>	<b>Science-based/ multiple stakeholders?</b>	Multiple stakeholders
	<b>For what purpose?</b>	The scenarios for future development in Slovenia came to us spontaneously as an idea to comment of Slovenia's Development Strategy (2005) as climate change issues were becoming more and more prevalent and visible.
	<b>Requested by a specific entity?</b>	A tender was launched in March 2006 by the Ministry of Development and European Affairs. Scenario development consultants were chosen to facilitate the programme for Slovenia ( <a href="http://www.scenariodevelopment.com">http://www.scenariodevelopment.com</a> ). This was followed by a two-day workshop on 21 and 22 May 2008. There was a final workshop on 18 July 2008 on the engagement of stakeholders.
	<b>How used?</b>	In October 2008, a hard copy of the publication was published and sent to all government offices and several experts and agencies.
	<b>By whom?</b>	No information
<b>3. Outcomes (immediate and long term)</b>	<b>Where and how used in policy (if at all)</b>	No examples
<b>4. Evaluation</b>	<b>Any formal evaluation of effectiveness or updates</b>	No
	<b>Success factors/drivers</b>	The outcome was a report, which could be used as a tool to help in responding to and including relevant issues in policymaking.
	<b>Barriers to success</b>	The problem was a limited budget for follow-up. Also the timing, as there were elections in September, the relevant policymakers who were involved in the project were moved.
<b>5. References</b>		

# Appendix 3

## Further details on futures studies and future thinking in Slovenia

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### 1. **The *Vision Slovenia* declaration (Brdo, 6 December 2003)**

Slovenia is not a government or a parliament, but two million of its citizens. They have already gathered enough courage and vision to attain their independence once. And, no doubt they will manage to gather it again to position their country successfully in the European environment and the world.

A vision can only be successful if it is designed by the citizens, if they can see in it the fulfilment of their wishes and expectations. To realise the vision, one needs courage and self-confidence. And no doubt Slovenia has both: it has an immensely rich nature and culture and what is more, competent and resilient people who have already lived through some serious times.

This vision incorporates our competitive advantages and new challenges. We live at the crossroads of different cultures and traffic routes. Richness and beauty of a diverse nature and rich cultural heritage mean more than a solid basis for a successful integration into the European family of nations.

Slovenia should become an area where the world comes together, where the most successful global

enterprises aspire to operate, where the toughest peace agreements are concluded. An area from where ideas of peace and cooperation propagate and where people could still enjoy in unspoiled nature and hospitality.

To achieve this, we have to preserve the magnificence and diversity of our nature and culture. With a feeling and sense for the environment, we have to develop the necessary infrastructure and build our future assisted by science and research closely related with practice.

Of course, it is the people who should be in the focus of attention. Investing in their knowledge, allowing them a lifelong learning, personal development, building of self-confidence is an imperative. Only in this manner, may they be active citizens able to efficiently manage themselves, Slovenia and Europe.

This will allow us to build an open and creative society where people from all over the world will meet and enjoy sincere hospitality.

The vision is here. And we have all the means to fulfil it. What we need is a desire and determination. We must not wait for the authorities to do it for us. The vision can only become a reality if it is realised by the people.

## 2. Overview of the five development priorities of *Slovenia's Development Strategy (2005)*

Slovenia's five key development priorities aimed at attaining the set objectives are:

1. A competitive economy and faster economic growth;
  - foster entrepreneurship and increase competitiveness;
  - increase the inflows of development-promoting domestic and foreign investment;
  - support the economy's internationalisation;
  - increase the competitiveness of services; and
  - successful participation in the exchange rate mechanism ERM II and adoption of the euro.
2. Effective generation, two-way flow and application of the knowledge needed for economic development and quality jobs;
  - raise economic efficiency and the level of investment in research and technological development; and
  - improve the quality of education and encourage lifelong learning
3. An efficient and less costly state;
  - increase the institutional competitiveness and efficiency of the state;
  - Restructure public finances to enhance their developmental role; and
  - ensure better operation of the judicial system.
4. A modern social state and higher employment;
  - Improve labour market flexibility;
  - modernise social protection systems; and
  - reduce social exclusion and poverty risk;
5. Integration of measures to achieve sustainable development;
  - sustained population growth;
  - balanced regional development;
  - ensure optimal health conditions;
  - improve spatial management;

### 3. The scenarios presented in *Development Scenarios for Slovenia to 2035: Trends and opportunities in the times of climate change (2008)*

	Clueless	Green Oasis	Chameleon
			
<b>How is climate change perceived in Slovenia?</b>	There is much uncertainty about causes, impacts and solutions. Overall it is seen as a distant problem and one that can't be resolved at any rate.	Climate change is seen as already having impacts, which are likely to be even greater in the future. It is a threat to the all that is positive about a new concept of quality of life.	Climate change is seen as a series of manageable events life and business can adapt to fit into the new environment. There is no need for panic as there is plenty of time to 'evolve'.
<b>What are the over-arching core values?</b>	The core values revolve around wealth and economic growth at any cost; a belief that the best model for achieving satisfaction is embodied in the market-based capitalism of the 1990s and arly 2000s. No decoupling of GDP and energy use occurs.	People in this scenario value above all their country and the environmental, cultural and individual beauty it offers. Maintaining, and indeed improving, Slovenia as it is in 2008 is a core objective. The responsibility for the future generation and general global responsibility.	The values are individualism and a lack of collective responsibility. People value their lifestyles, and while some are prepared and able to adapt to new situations, it is felt that if the environment changes, the country will be able to adapt and still 'pull through'.
<b>Are the key stakeholders organising and rallying to act? Is there 'policy cooperation'?</b>	No, there is no shared course of action, nor is there collaboration because there is no perceived problem to solve collectively. Governments are allying only with the important economic players.	Yes, given the realisation of the magnitude of climate change, there is collaboration across stakeholders and sectors.	No, there is disjonted action with each stakeholder responding in its own way and for its own constituencies. Ironically, although there may be some activity, the fact that it is uncoordinated means that the results are fruitless.
<b>Does the government take a lead?</b>	The government takes occasional lead on some issues, but no real action on climate change. The realisation towards the end of the scenario means that action is forceful and 'abusive'. Throughout the scenario government seems to be preoccupied by a plethora of other issues and priorities.	The government has clear ideas about the legislation needed to respond, and how to engage the population to implement the legislation, and has a mandate to act. Government is a central player and acts as a catalyst so that some of the other stakeholders are able to reach out to their constituents and aid in the government's drive to change the society and the economy for environmental gains.	The government takes initiative in some areas, assisting also with practical means to enable adaptation. The government is not so much a leader as it is a 'responder' to the needs created by changing climate.

<p><b>How does the economy change?</b></p>	<p>There is no perceptible change in the economy other than through the impacts of climate change, increased prices, and growing insecurity. The mindset is such that there are no incentives to adapt to new conditions; businesses try to simply 'plough on' in the expectation that things will improve. No decoupling of GDP growth and natural resources use.</p>	<p>The economy and the financial value systems change. Quality of life, sustainability and happiness prevail. The economic system is geared towards low-carbon intensity, sustainable production and gradually phasing out increases in energy demand. Gross domestic happiness is the key measure. GDP growth is strongly decoupled from the use of natural resources in particularly fossil fuels.</p>	<p>The economy adapts and the practices adapt in line with the impacts of changing climates, needs and opportunities. The overall consensus, however, remains focussed on carbon-based economies and activities. This exacerbates the impacts. Weak decoupling of GDP and use of natural resources.</p>
<p><b>What is the role of NGOs and other non-profit sectors?</b></p>	<p>They play a role to inform the population about climate change, but they are ultimately ineffective and unable to create a shift or critical mass. Education initiatives are ineffective.</p>	<p>These sectors are central allies in the government quest. They are allies as much as watchdogs, ensuring the information used and disseminated is appropriate and factual.</p>	<p>The majority of the non-profit sectors are, like the government in this scenario, missing the big picture and most are advocating for adaptation. They fall into the same trap as everyone else. There are a few 'die-hards' but they have limited traction.</p>
<p><b>What happens to the various legislative packages already in the pipeline in 2008?</b></p>	<p>All the packages and legislative tools in the pipeline are ratified. There is little interest in the long term to abide by them as doubts are continually raised about the feasibility, accuracy and necessity of these targets and legislations. Enforcing this legislation has become high impossible and, ultimately, not desirable because they are seen as too costly and as a distractin to maximising economic output during times of hardship.</p>	<p>All the packages and legislative tools in the pipeline are ratified. The government and its many partners go further; new policies are shaped and implemented and targets are met and exceeded. There is pride in setting high standards — which are also met.</p>	<p>All the packages and legislative tools in the pipeline are ratified. The importance of the climate-related legislation is soon surpassed by the need to adapt to the impacts of climate change; new legislation takes precedence. The costs of abiding by the climate legislation are too great as the costs keep mounting and population, and government, become more pragmatic about the short-term implications.</p>
<p><b>What are the climate change impacts?</b></p>	<p>The impacts are severe weather, shortage of green spaces, polluted waters and other natural resources. Biodiversity loss is significant. The climate change causes and impacts are not tackled in this scenario.</p>	<p>The causes and impacts of climate change are all addressed. Some impacts are inevitable because of the in-built momentum, but over the long term the impacts are clearly mitigated.</p>	<p>The impacts are variable and responded to, but not anticipated. There is an erroneous sense, however, that the events of one year are the guide for the next years leading to a range of preparations and activities to deal with impacts.</p>
<p><b>What does R&amp;D look like?</b></p>	<p>R&amp;D is about increasing the productivity of existing systems and models; rendering them more productive and expanding production without re-thinking the environmental impact in the long term. R&amp;D financing determines these priorities.</p>	<p>R&amp;D is focused on alternative, low or no-carbon and renewable energy sources. Also focus on efficiency gain and incentives for development into areas that provide genuinely novel and relevant solutions.</p>	<p>The R&amp;D story is a mixed bag of technologies that mitigate impacts, seed technologies that are adaptive to the new climates and practices that lend themselves to the evolving environments. R&amp;D incentives are not primarily promoting the fields of emission reduction.</p>

**What about bio- or agrofuels?**

The debate of biofuels being responsible for food cost increases was not addressed effectively and the negative consequences were simply seen as a 'cost' to be borne. There are some efforts to reduce the impact on food prices mainly through trade regulations. However, neither the cost, nor the environmental impacts of biofuels decrease over the course of the scenario.

Like high oil prices, the growing food costs and environmental impacts of biofuels are addressed through a comprehensive and targeted R&D and policy programme. The thinking becomes more long-term and priorities are placed on ensuring that unintended consequences are anticipated and avoided. Biofuels are substituted with agro-fuels and algae (for example) that are unfit for human consumption, have no negative environmental impacts and do not compete for space with essential crops.

Efforts are made to reduce the impacts on resource costs, while trying to balance energy sources. Biofuels remain a valid alternative, in particular GMOs are used to maximise production for fuel. This does not resolve some of the ongoing deforestation to plant biofuel crop debates. However, as each new solution creates problems in the medium term, they are resolved as and when necessary.

**What are the energy production and energy use outlooks?**

Energy demands keep growing, in line with economic growth and growing needs to satisfy living standards of higher energy intensity. Energy production is sustained with imports from foreign coalpowered stations and through Slovenian production at new Nuclear plants. No decoupling of GDP and the energy use.

Energy demands reduce over time, making a strong case for efficiency, investments in green energy production and sustainable production and consumption. The economy has re-focused on less energy demanding means of production, so there is a gradual reduction on reliance of polluting energy sources. Only weak decoupling from the use of non renewable energy resources and GDP.

Energy demands keep growing, production systems are unable to manage and the supply is intermittent. The growing global costs mean that production becomes inefficient and uneconomical in the longer term. Individuals have to accept lower standards and fewer benefits than they were used to. without positive implications for the environment.

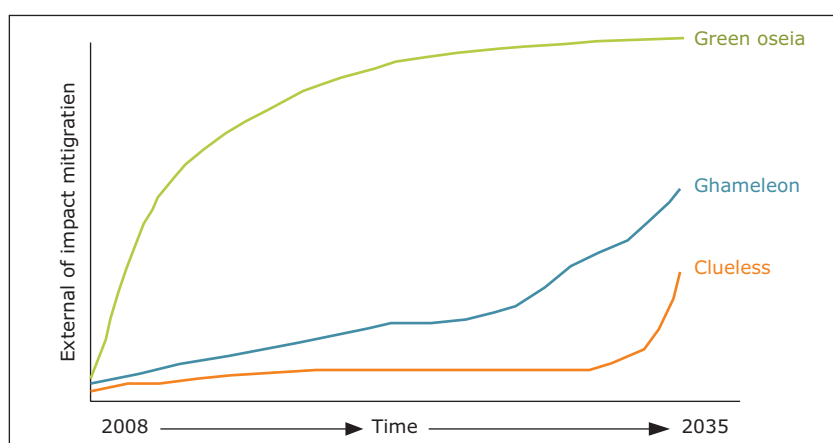
**How does the extent of impact mitigation vary across scenarios?**

See chart for illustration

Tackling the impacts of climate change is not a priority, until it is too late, which is when action is ramped up at very high monetary and social costs. This is the result of government not believing that the long-term impacts of climate change were going to materialise.

Strong action early on sets the country on a path to avoid the worst. The early realisation that climate change could have major socio-economic impacts has galvanised government and all the relevant stakeholders.

Small incremental actions, mainly to deal with the impacts do not produce major long-term dividend. Any action is disjointed, haphazard and not aimed to minimise the impacts of climate change, simply to respond to it.



**Who are the sources of information and analysis for climate change science?**

Oil companies, the government, some scientists, like-minded countries.

The IPCC, scientists, the government, NGOs.

Nobody in particular, the overload of information stymies action and decision-making.

**What is unexpected and challenging in each scenario?**

<p>The unexpected aspect of this scenario is how easy it is to 'slip' into this mode of action: oil, though expensive is apparently still plentiful, so why change? We think we can put off action indefinitely, thinking we have time to act. This scenario illustrates that the time to act is now, not in 25 years, when it will be too late.</p>	<p>The notion of an 'Oasis' assumes pleasant aspects inside it, and less fortunate aspects surrounding it. The challenge lies in ensuring that this scenarios 'lifts all boats' and does not become a negative picture of only a small minority benefiting from the positive steps taken. The real challenge in this scenario is operationalising it — ensuring that climate change does not continue, above and beyond mitigating its impacts.</p>	<p>This scenario presents a nuance: responding to the impacts rather than reducing climate change altogether. The challenge lies in clearly understanding the difference between the two and the balance of action and priority.</p>
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<p><b>Areas widely considered as important current reality in the future of climate change in Slovenia</b></p>	<p><b>Areas considered by fewer people as important current reality in the future of climate change in Slovenia</b></p>
<ul style="list-style-type: none"> <li>• Impacts;</li> <li>• Extreme weather;</li> <li>• Biodiversity</li> <li>• Perception;</li> <li>• Attitudes</li> <li>• Habits;</li> <li>• Inactivity;</li> <li>• Knowledge and Education;</li> <li>• Awareness</li> <li>• Energy system;</li> <li>• Technological innovation;</li> <li>• Unsustainable agriculture and forestry</li> <li>• Transport;</li> <li>• Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Policy cooperation;</li> <li>• Economy and values;</li> </ul>

#### 4. The prospects for future/foresight thinking in Slovenia?

The following excerpts from the speech by Slovenia's President, Danilo Türk, on the occasion of Slovenian Statehood Day, 24 June 2008, indicate the need for futures thinking and perhaps a greater readiness to institutionalise them.

*The answers the world needs will not be simple. The age of favourable economic trends, the age of low-cost food that has lasted for almost three decades and the age of moderate oil prices are coming to an end. Climate change is becoming more and more evident and, as such, of greater concern. The current rise in oil and food prices and recent turmoil on international financial markets have begun to threaten the achievement of the millennium development goals set at the turn of the millennium by the United Nations. It will be necessary to look for real development alternatives despite harsher international market competition. It is necessary to look for new ways of living. However, are we actually ready to shape the necessary answers? And if we find them, are we ready to live in line with them? Since the times of the ancient Greek philosophers, it has been known that humans are incomplete beings and, therefore, have, with their own awareness and their own will, to do their best to improve their fate. In our times, this means that we have to understand the imperative for the development of humanity as a whole and to adapt our development paradigm to this understanding. Gone is the time of scientific and economic optimism when we relied on the fact that science itself would, in appropriate market conditions, find solutions to the problems of our future. Nowadays, humanity has access to more information and scientific knowledge than ever before. There are some technologies that promise solutions to the key questions of energy and environmental protection, others could be developed in time. However, scientific development has also created the means to destroy life on this planet and*

*technologies, which can destroy the ethical foundations of human society. Science does not provide automatic solutions: it provides tools that should be used with the appropriate wisdom. The market alone is not enough. What is at stake is a modern policy which must be capable of finding the paths that will ensure the survival of mankind and avoid the mistaken byways that lead to its destruction. We have reached the stage where we are capable of considering all this and where we have to do so ... While these questions concern all of us, politics must be aware of them with a special responsibility. The answers to these questions do not lie in moralising. In politics, moralising has frequently turned out to be a byway leading to the danger of decisions that, nominally, claim nobler aims but actually impair human freedoms and democratic participation in decision-making. Only politics which extends the range of human freedom and gives people the means for responsible decision-making can hope to succeed in the quest for the answers demanded by our times. This is why we need reforms in politics, too. This applies to any political community — the international or the domestic Slovenian political community ...*

*We Slovenians, too, are obliged to consider all these issues, the future of the world we belong to, and to seek solutions together with others. We Slovenians have never been excluded from global events, not even when we felt most left to ourselves. Our gaining independence 17 years ago was also part of a global upheaval. The question of whether development would be based on individual liberty or on predetermined communities, including those that curtail human freedom and human rights as was the case in the former Yugoslavia, was a fundamental dilemma of global development. Our independence provided an answer. We were unanimous in opting for the path of extended human freedoms and rights. All our later successes were the fruit of this fundamental choice in favour of freedom and human rights" ...*



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