VERRACON

VERKEHR ERREICHBARKEIT RAUM CONSULTING

ÖAR Regionalberatung GmbH

Environmental Report

CROSS BORDER COOPERATION PROGRAMME HUNGARY – AUSTRIA 2014 - 2020

Version II, comments of the public consultation incorporated

Aus urheberrechtlichen Gründen wurden Bilder und Karten entfernt – das Originaldokument kann auf Anfrage übermittelt werden

Client:
Managing Authority for the Programme
Hungary – Austria 2007-2013

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CONTENT

1 INTRODUCTION

1.1 Purpose of the Strategic Environmental Assessment

In compliance with the requirements set in Article 3 of the Directive 2001/42/EC, it can be predicted that the Cross-border Cooperation Programme Austria-Hungary 2014-2020 might cause environmental effects. Accordingly – and thus suiting the requirements of relevant national legislations – along the programming process, performance of Strategic Environmental Assessment (SEA) is required.

Performance of SEA was coordinated by ÖAR Regionalberatung GmbH, with the professional cooperation of Verracon GmbH and BFH Európa Kft.

First step within the SEA was setting up the methodology within a scoping. The Scoping report sets up the framework of the environmental assessment, indicators and rating methodology. As the program itself is very environment- and sustainability-focused, there was no need for special methods or measures to perform the assessment.

The basis for the Strategic Environmental Assessment is the Cross Border Cooperation Programme Hungary – Austria 2014-2020, programme draft.

For the Strategic Environmental Assessment the following legal basis applies:

- Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment
- The Hungarian SEA is regulated by the 2/2005 (I.11) government regulation for environmental assessment of certain plans and programmes. Annex No. 3. lists that in case of assessing regional programs which authorities must be involved in any case, and which only in case of concern.
- Austria: Implementation of Directive 2001/42/EC in various national and federal state laws, e.g. law for regional spatial planning in Lower Austria: NÖ Raumordnungsgesetz 1976 (NÖ LGBl. 1976/8000 i.d.F. 2005/26)

1.2 Brief description of the programme

The Operational Program 2014-2020 of the Austria-Hungary Crossborder Cooperation Program aims to tackle common challenges identified jointly in the border regions. The focus is to strengthen cooperation structures in defined areas which are linked to the fields of activity of EU priorities. As the number of cooperating players is limited the programme tries to concentrate on areas with sufficient institutions and enough potential for cooperation.

The programme will not create a large-scale financial impact. Therefore its objective is to prepare strategic action and pilot projects in fields such as the improvement of poor accessibility or inappropriate business environment, the lack of networks among local and regional administrations, environmental pollution or risk prevention. A second focus is to exploit the untapped potentials in the border area and to concentrate on issues close to the needs of the population in the border region.

The following needs were identified as most relevant in the course of programming:

- Enhancing the competitiveness of small and medium enterprises.
- Protecting the environment and promoting resource efficiency
- Needs related to transport and mobility.
- Needs related to regional governance and institutional cooperation.

According to the recognised needs, four Thematic Objectives (TOs) and within seven Investment Priorities (IPs) had been selected, as follows:

TO 3	Enhancing the Competitiveness of SME-s	IP 3d)	supporting the capacity of SMEs to engage in growth and innovation processes
TO 6	Protecting the Environment and Promoting Resource Efficiency	IP 6c)	protecting, promoting and developing cultural and natural heritage
		IP 6d)	protecting and restoring biodiversity, soil protection and restoration and promoting ecosystem services including NATURA 2000 and green infrastructures
		IP 6f)	promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector, soil protection or to reduce air pollution
TO7	Promoting Sustainable Transport and Removing Bottlenecks in Key Network Infrastructures	IP 7b)	enhancing regional mobility
		IP 7c)	green transport systems
TO11	Enhancing Institutional Capacity and an Efficient Public Administration	CBC	promoting legal and administrative cooperation and cooperation between citizens and institutions

Table 1: Overview over the thematic objectives of the programme

1.2.1 Investigation Area

The programme area covers the Austrian NUTS 3 regions Nordburgenland, Mittelburgenland and Südburgenland, Niederösterreich Süd, Wiener Umland/Südteil, Wien, Graz and Ost-Steiermark, and the Hungarian NUTS3 regions Győr-Moson-Sopron, Vas and Zala. The core programme area remained in large part the same as in 2007 – 2013, with the addition of the metropolitan area of Graz being the only exception.

The region has approximately 4.2 Mio inhabitants within an area of 25.141 km². The Austrian regions represent 76,5% of the population living on 55% of the area, and the Hungarian regions 23,5% of the population living on 45,1% of the area. While Győr-Moson-Sopron contributes the greatest area to the project region, the highest population is concentrated in Wien. (*See also: Mecca: Regional Analysis and SWOT Analysis*)

1.2.2 Timeframe

The programme covers the years the years 2014-2020. The overall implementation period is from 2014-2020. Thus the SEA will assess positive and negative effects on the environment for the years 2014-2025.

1.2.3 Connection to other parts of the process of planning

The SEA is integrated in the programming-process. In collaboration with the Ex-Ante team and the managing authority the scoping report and the environmental report were elaborated.

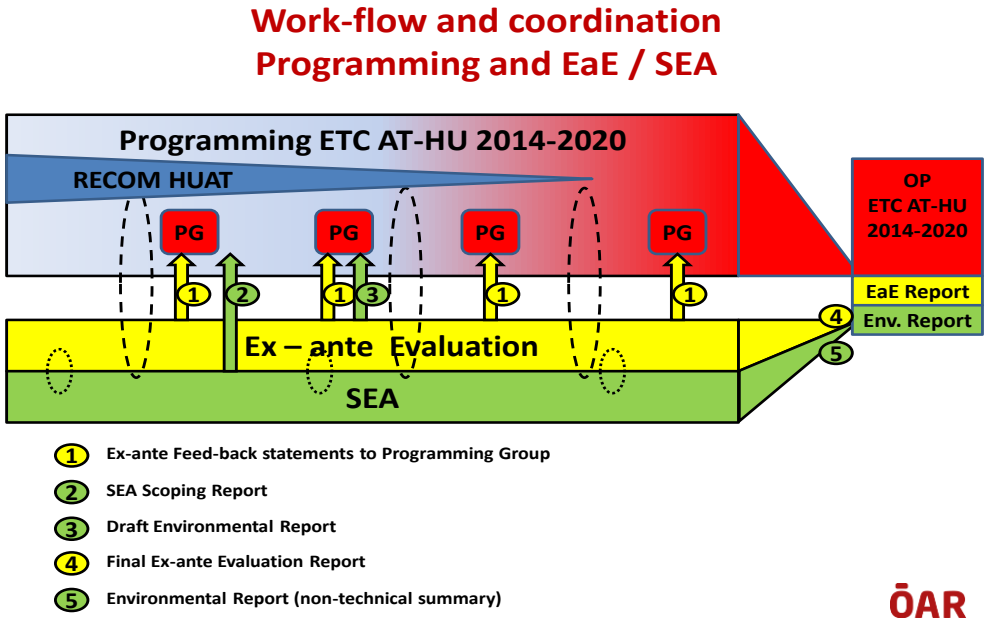


Figure 1: The SEA-process, integrated in the planning process. Source: ÖAR, 2013.

2 METHODOLOGY

2.1 Background, Objectives and General Approach

The SEA will evaluate possible environmental impacts related to priorities and strategies upon the ETC AT-HU 2014-2020 Programme and give recommendations on how to enhance the quality of the ETC AT-HU 2014-2020 Programme in respect to environmental aspects. The SEA Directive implies that a comprehensive or integrated approach is to be used for assessing the likelihood of significant environmental effects of Programs under the terms of the Directive. In this context, the principles and objectives of the SEA Directive are of relevance. Its recitals include references to the aspects of environmental quality, human health, and utilization of natural resources, biodiversity and sustainable development.

The SEA should ensure that programs take into consideration the environmental effects they cause. The SEA has specifically the objective of integrating environmental considerations into the preparation and adoption of the ETC AT-HU 2014-2020 Programme with a view to promoting sustainable development. SEA shall produce all compulsory elements as stipulated in the Directive 2001/42/EC, to be delivered in the “Environmental Report”.

In the Environmental Report especially the relevant environmental impacts on the protected goods are described and, if possible the alternatives are evaluated or at least recommendations are made. Not individual effects are in the foreground of the SEA. In particular interactions and cumulative effects are present in the Environmental Report.

The Strategic Environmental Assessment needs to be carried out to

- Raise the awareness for the potential environmental impact of envisaged activities among the program partners.
- Provide recommendations for adjustments of the program thereby respecting the principle of proportionality.

The Strategic Environmental Assessment will

- Perform all necessary steps of the SEA in compliance with the relevant EU-Directive as well as the national legislation of Hungary and Austria
- Aiming to ensure that environmental and possibly other sustainability aspects are considered effectively in policy, plan and programme making.

The Strategic Environmental Assessment is

- Integrative
- Sustainability-orientated

- Target-oriented
- Responsible-minded
- Participative
- Iterative

The objectives of the SEA directive are stipulated in Article 1 of Directive 2001/42/EC as follows:

"*The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment*."

The Strategic Environmental Assessment will be embedded in the ex-ante evaluation and produce a separate Environmental Report as stipulated in the Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001.

The Environmental Report is the core part of the SEA: The report will contain information on points referred to in Annex 1 of the Directive 2001/42/EC and the relevant specifications in Austrian and Hungarian national regulation respectively, taking into account the objectives and priorities of the ETC AT-HU 2014-2020 Programme as well as the allocated financial resources.

2.2 Planning Process

Following the general guidelines for the SEA seven steps need to be taken:

1. "**Screening**": investigation of whether the plan or programme falls under the SEA legislation. Thus possible negative effects due to the programme cannot be excluded a SEA will be exanimated.
2. "**Scoping**": defining the boundaries of investigation, assessment and assumptions required,
3. "Documentation of the state of the environment", effectively a baseline on which to base judgments,
4. "Determination of the likely (non-marginal) environmental impacts", usually in terms of Direction of Change rather than firm figures,

Point 3 and 4 are worked out in this Environmental Report.

5. Informing and consulting the public,
6. Influencing "Decision taking" based on the assessment and,
7. Monitoring of the effects of plans and programmes after their implementation.

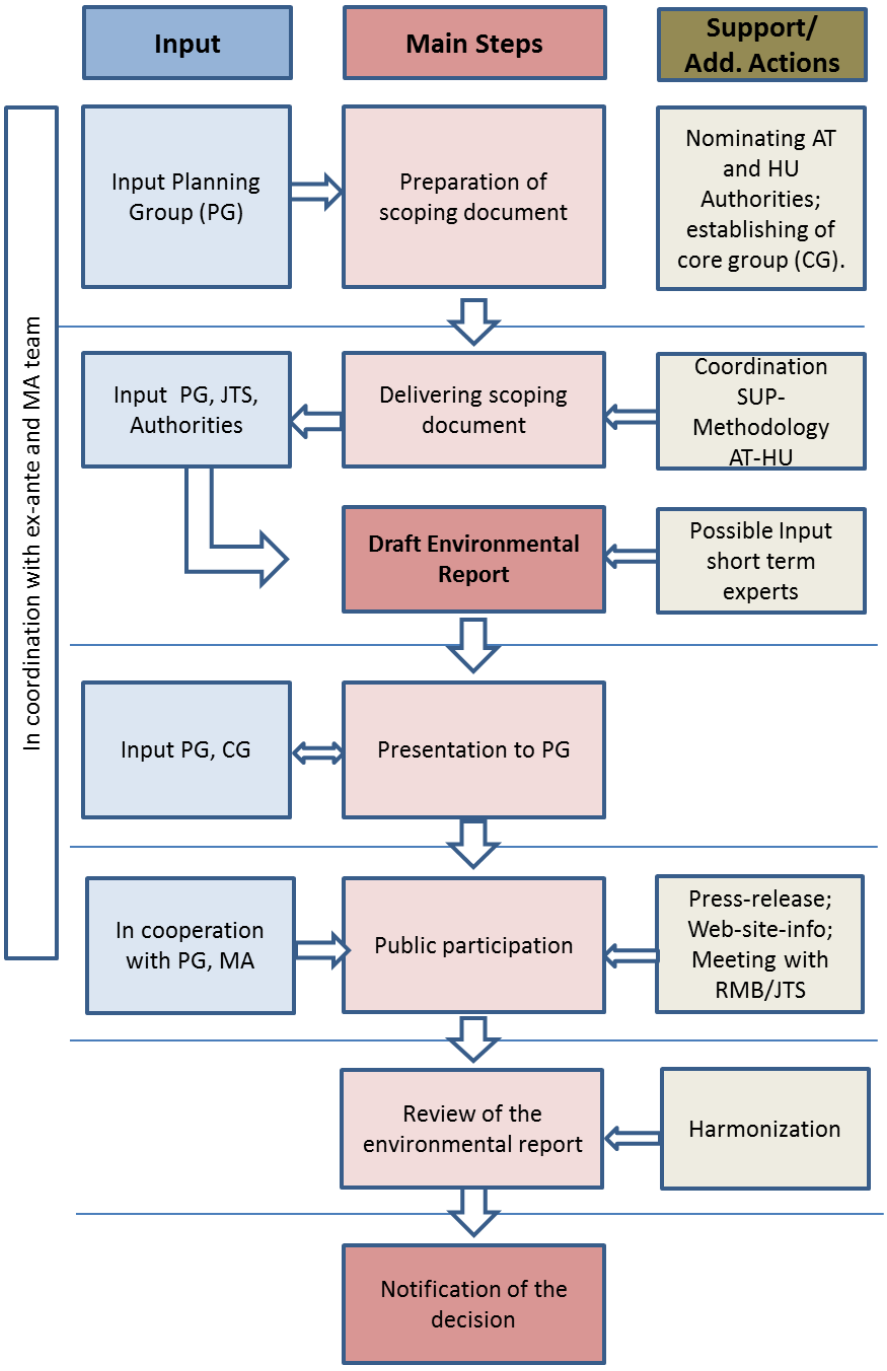


Figure 2: The SEA-Process. Source: Hoffert-Hösl (Verracon GmbH)

2.2.1 Scoping

The scoping-process aims to:

- Define the geographical area of relevance and the period of time to be relevant for trends and effects; the considered time period for trends and future impacts will orientate on the programming period (at least 2022).

- define the relevant environmental issues, which should be considered within the SEA;
- define suitable environmental indicators (or specific questions) that will guide analyses within the SEA process;
- define the method of assessment of positive or negative effects;
- define the method of generating and assessment of reasonable alternatives

Content of the Scoping Process

- which alternatives are considered
- which environmental aspects and impacts will be examined subsequently (and what not) - including objectives
- investigation area to carry out the observations
- which is the relevant period of time
- what depth of investigation is necessary
- which methods are suitable
- which data and information are required (and available)
- what measures will be taken into account
- which authorities will be consulted

2.2.2 Environmental Report

This step aims to define the relevant environmental issues, which should be considered within the SEA. Information on the state of the environment and natural resources relevant to the programming document will be presented. The likely evolution of these trends without implementation of the programming document will be outlined as a basis for the assessment of impacts of the programme. The rating always is examined in comparison to the trend without implementing the programme, and not referring to the status quo.

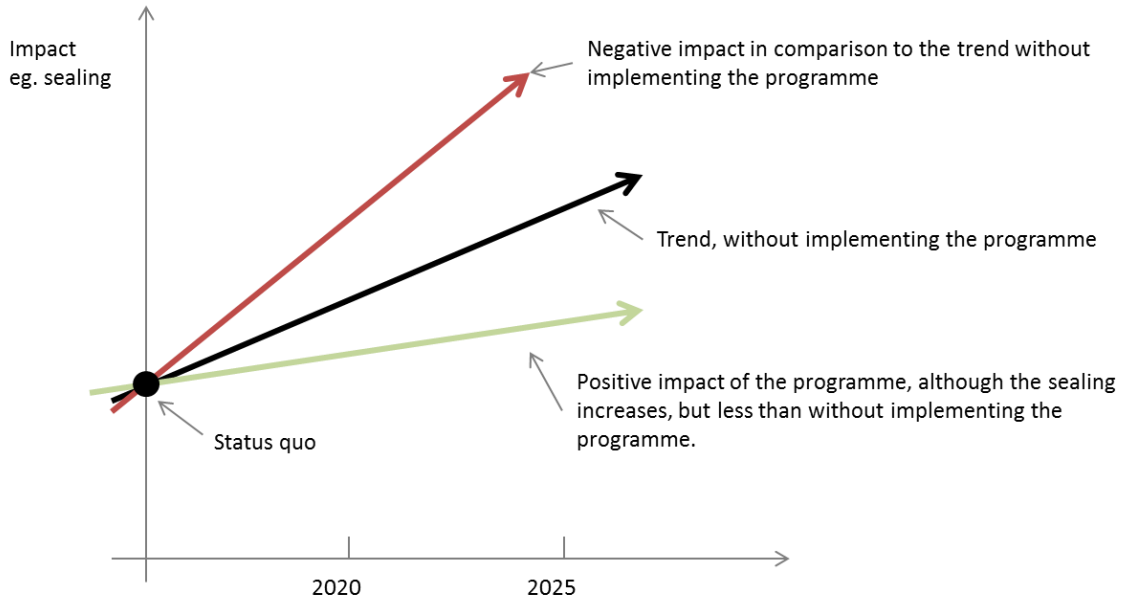


Figure 3: The Rating Scheme. Source: Hoffert-Hösl (Verracon GmbH)

Based on the identified issues the relevant environmental objectives that should be considered on international and national level within the programming document and the SEA process will be set out. Furthermore suitable environmental guiding questions or indicators will be formulated, that will guide analyses within the SEA process. The Environmental Issues and Indicators are described in detail.

The assessment will be done by a qualitative description of possible positive or negative effects which are induced by objectives and priorities of the programming document. Synergies and conflicts between the relevant environmental objectives and the specific development objectives and priorities proposed in the programming document are analyzed.

The methodical approach follows the general question:

“Is there any significant positive or negative effect on environmental issues in the programming area due to possible actions related to programme priorities fields of activity pointed out in the OP?”

The development of the environmental issues and guiding questions/indicators in case that the program will not be implemented will create a “zero”-option which will be defined as the **“baseline” for the overall assessment process.**

Measures to prevent reduce and offset adverse effects and the suggestions for improvement (which are brought in during the programming process) are suggested to the drafting team.

These suggestions are regarded as alternatives. A summary on how the environmental considerations and the opinions expressed in the SEA have been taken into account will be provided.

The information to be notified in accordance with Article 5, paragraph 1 in accordance with Article 5, § 2 and 3:

a. An outline of the contents, main objectives of the program and relationship with other relevant plans and programs;
b. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or program;
c. The environmental characteristics of areas likely to be significantly affected;
d. All current relevant to the plan or program environmental issues with special emphasis on problems relating to any areas of a particular environmental importance, such as the reported according to the guidelines 79/409/EEC and 92/43/EEC areas;
e. The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;
f. the likely significant environmental impacts (inclusive secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects, including impacts on aspects such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and the archaeological heritage, landscape and the interrelationship between the above factors.
g. To reduce the measures that are planned to prevent significant adverse effects on the environment of implementing the plan or program, and to compensate as far as possible;
h. an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties in the compilation of relevant information (such as technical deficiencies or lack of knowledge);
i. A description of the measures envisaged concerning monitoring in accordance with Art. 10;
j. A non-technical summary of the information described above.

2.3 Involvement of authorities and publicity

According to Article 6, No.4 of the SEA Directive 2001/42/EC “public” is defined as follows:

“Member States shall identify the public for the purposes of paragraph 2, including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organisations, such as those promoting environmental protection and other organisations concerned.“

The SEA Directive provides various information- and consultation obligations:

2.3.1 Consultation of relevant environmental authorities and bodies during the scoping-phase:

According to Article 5, § 4, the environmental authorities and bodies must be consulted and may respond within a reasonable time. For Hungary 30 day and for Austria 14 days are foreseen to

comment the scoping report. The may comment on the scope and level of detail to be included in the Environmental Report.

2.3.2 Consultation of relevant environmental authorities and bodies to the Environmental Report:

According to Article 6 the environmental report has to be made available to the environmental authorities and bodies, and the public. Furthermore, the public and the environmental authorities and bodies are to provide an early and effective opportunity to comment prior to the adoption of the program or its submission to the legislative procedure the environmental report. For Hungary 30 days, for Austria 14 days are foreseen to comment the Draft Environmental Report.

2.3.3 Information of the public and the environmental authorities and bodies about the decision

The public and environmental authorities must be informed about the adoption of the program and the decision (Article 9, § 1 of the SEA Directive). This information shall include the adopted program, a summary statement of the integration of environmental considerations and comments as well as the measures for monitoring. The information can be provided via Web-Sites and/or press releases.

According to recommendations received by the Bundesministerium für Land-und Forstwirtschaft, Umwelt und Wasserwirtschaft and the Environmental Agency of Austria the following authorities should be informed within the SEA ETC AT - HU:

The Hungarian SEA is regulated by the 2/2005 (I.11) government regulation for environmental assessment of certain plans and programmes. Annex No. 3. lists that in case of assessing regional programs which authorities must be involved in any case, and which only in case of concern.

According to the Hungarian SEA regulation (2/2005 (I.11), Annex 3) the following Hungarian authorities and environmental bodies need to be involved in the consultation of SEA:

Authority/ body responsible for environment, address	**Contact**
Nyugat-dunántúli Környezetvédelmi és Természetvédelmi Felügyelőség 9700 Szombathely, Vörösmarty u. 2.	Bencsics Attila 06 94 506 700 nyugatdunantuli@zoldhatosag.hu
Nyugat-dunántúli Vízügyi Hatóság 9700 Szombathely, Vörösmarty u. 2.	Sümeginé Szanyi Violetta 06 94 506 700 titkarsag@nyuduvh.vizugy.hu
Észak-dunántúli Környezetvédelmi és	Németh Zsolt

Természetvédelmi Felügyelőség 9021 Győr, Árpád u. 28-32.	06 96 524 000 eszakdunantuli@zoldhatosag.hu
Észak-dunántúli Vízügyi Hatóság 9021 Győr, Árpád u. 28-32.	Markó Ödön 06 96 524 000 vizugyihatosag@eduvizig.hu
Fertő-Hanság Nemzeti Park Igazgatóság 9435 Sarród, Rév-Kócsagvár	Reischl Gábor, Igazgató 06 99 537 628 fhnpititkarsag@fhnp.kvvm.hu
Őrségi Nemzeti Park Igazgatóság 9941 Őriszentpéter, Siskaszer 26/A	Dr. Markovics Tibor, Igazgató 06 94 548 036 orseginp@onp.kvvm.hu
Balaton-felvidéki Nemzeti Park Igazgatóság 8229 Csopak, Kossuth utca 16.	Puskás Zoltán, Igazgató Telefon: +36 87 555 260 Fax: +36 87 555 261 bfnp@bfnp.hu
Győr-Moson-Sopron Megyei Kormányhivatal Nép-egészségügyi Szakigazgatási szerv 9024 Győr, Jósika u. 16.	Dr. Paller Judit 06 96 418 065 titkarsag@nydr.antsz.hu
Vas Megyei Kormányhivatal Népegészségügyi Szakigazgatási szerv 9700 Szombathely, Sugár u. 9.	Dr. Stánitz Éva 06 94 506 300 titkarsag.vas@nydr.antsz.hu
Zala Megyei Kormányhivatal Népegészségügyi Szak-igazgatási szerv 8900 Zalaegerszeg, Göcseji u. 24.	Dr. Paizs Teréz 06 92 549 190 titkarsag.zala@nydr.antsz.hu
Országos Tisztifőorvosi Hivatal Közegészségügyi Főosztály, Országos Gyógyhelyi és Gyógyfürdőügyi Osztály 1097 Budapest, Gyáli út 2-6.	Dr. Kovács Margit főosztályvezető 06 1 476 1220 kozegeszseg@oth.antsz.hu
Győr-Moson-Sopron Megyei Kormányhivatal Építésügyi és Örökségvédelmi Hivatal - Örökségvédelmi Osztály 9400 Sopron, Kolostor u. 13.	Kuslits Tibor 06 99 508 830 sopron@koh.hu
Vas Megyei Kormányhivatal Építésügyi és Kulturális Örökségvédelmi HIvatala 9700 Szombathely, Kőszegi u. 3.	Pintér Rudolf 06 94 517 131 pinter.rudolf@vas.gov.hu
Zala Megyei Kormányhivatal Zalaegerszegi Járási Hivatal Örökségvédelmi Hivatal 8900 Zalaegerszeg, Kazinczy tér 4.	Márkus Tamás 06 92 550 300 epitesugyzeg@zalajaras.hu

Vas Megyei Kormányhivatal Erdészeti Igazgatósága 9700 Szombathely, Batthyány tér 2.	Tóth Gábor, vezető (94) 512-980 vas-erdeszet@nebih.gov.hu
Zala Megyei Kormányhivatal Erdészeti Igazgatósága 8900 Zalaegerszeg, Zrínyi Miklós út 36., Levélcím: 8901 Zalaegerszeg, Pf. 209.	Jagicza Attila zala-erdeszet@nebih.gov.hu Tel: 06-92-549-670 Fax: 06-92-549-671
Győr-Moson-Sopron Megyei Kormányhivatal Építésügyi és Örökségvédelmi Hivatal 9021 Győr, Káptalandomb 28.	Keresztes Sándor 06 96 517 004 foepitesz@gyorkozig.hu, keresztes.sandor@nebih.gov.hu
Zala Megyei Kormányhivatal Építésügyi Hivatal 8900 Zalaegerszeg, Göcseji u. 24.	Lengl Zoltán 06 92 549 194 epitesfelugyelo@zalakozig.hu
Győr-Moson-Sopron Megyei Kormányhivatal Növény- és Talajvédelmi Igazgatóság 9028 Győr, Arató u. 5.	Pongrácz Attila, (96) 529-330, Fax: (96) 529-333 pongracza@nebih.gov.hu
Vas Megyei Kormányhivatal Növény- és Talajvédelmi Igazgatóság, 9762 Tanakajd, Ambrózy sétány 2.,	Szabó Levente, vezető (94) 577-410, e-mail: vas-nti@nebih.gov.hu
Zala Megyei Kormányhivatal Növény- és Talajvédelmi Igazgatóság 8900 Zalaegerszeg, Kinizsi u. 81.	Szabó Béla Tel: 06-92-550-160 Fax: 06-92-311-054 E-Mail: zala-nti@nebih.gov.hu
Vidékfejlesztési Minisztérium Környezetmegőrzési Főosztály 1055 Budapest Kossuth tér 11.	Dr. Dobi Bálint Tel: +36-1-795-5859 E-mail: ▪ e-mail dedicated to only SEA cases: skv@vm.gov.hu ▪ personal official e-mail: balint.dobi@vm.gov.hu

Table 2: Hungarian authorities to be integrated in the consultation process.

Austria follows for SEA exercises Article 6, No.4 of the SEA Directive 2001/42/EC[1].

In case of this program following Authorities will be consulted:

[1] "public" is defined as follows:
"Member States shall identify the public for the purposes of paragraph 2, including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organisations, such as those promoting environmental protection and other organisations concerned."

Authority	Contact
Bundesministerium für Land-und Forstwirtschaft, Umwelt und Wasserwirtschaft - Abteilung V/1: Anlagenbezogener Umweltschutz.	Ursula Platzer-Schneider Ursula, +43 1 51522 2115 ursula.platzer@lebensministerium.at
Amt der Burgendländischen Landesregierung, Abteilung 5 - Anlagenrecht, Umweltschutz und Verkehr	Paul Weikovics, +43: 057-600/2818 E-Mail: post.abteilung5@bgld.gv.at
Amt der Steiermärkischen Landesregierung, Abteilung 13 Umwelt und Raumordnung	+43 (316) 877-2652 E-Mail: abteilung13@stmk.gv.at
Umweltbehörde des Landes Niederösterreich Umweltrecht	Umweltbehörden des Landes Niederösterreich RU4Umweltrecht; 3109 St.Pölten z.H. DI. Wolfgang Hack post.ru4@noel.gv.at
Wiener Umweltschutzabteilung - MA 22	Mag. Gerald Kroneder Leiter des Bereiches Umweltrecht 1200 Wien, Dresdner Straße 45 Tel: +431 4000 - 73611 Fax: +431 4000 - 99 - 73611 gerald.kroneder@wien.gv.at
Umweltbundesamt; Environmental Impact Assessment and Climate Change	Ingrid Klaff, +43-(0)1-313 04/3521 ingrid.klaffl@umweltbundesamt.at

Table 3: Austrian authorities to be integrated in the consultation process.

2.3.4 Comments of the public consultation

The following table summarises the Hungarian authorities and environmental bodies that gave responses to the SEA report, and how the comments/suggestions were built in the report.

Authority/ body responsible for environment:	Comment(s):	Response to the comment:
Vas Megyei Kormányhivatal Erdészeti Igazgatóság	Orientating information concerning forests and forestry on the area covered by the authority	Relevant information is built in chapter 4.2.7.
Vas Megyei Kormányhivatal Népegészségügyi Szakigazgatási Szerve	1. Quality of river Gyöngyös plays an important role in drinking water supply of cities of Szombathely and Kőszeg. 2. Waste and rainwater management in recreation area of Kőszeg is to be solved as soon as possible.	Comments are not relevant in the case of a cross-border OP.

	3. Lack of waste water collection and management in two areas of Vas County are a real barrier of further development of the settlements (Szeleste-Hegyfalu and Kenéz-Pecöl-Bozzai). 4. It is necessary to raise the ratio of selective waste collection and collected hazardous waste.	
Nyugat-dunántúli Vízügyi Hatóság	1. The authority is not mentioned in the relevant 2/2005. Government regulation therefore is not authorised to give opinion. 2. Chapter 4.2.4.1 is to be corrected concerning water takeout and costs.	Chapter 4.2.4.1 is corrected according to comment Nr. 2.
Vas Megyei Kormányhivatal Növény- és Talajvédelmi Igazgatósága	Suggesting a study on saving soil's productivity	Relevant rather for the OP
Zala Megyei Kormányhivatal Népegészségügyi Szakigazgatási Szerve	Agreeing with the report's statements. Suggesting an emphasis on hazardous waste collection, windup of illegal waste depositories, collection and management of wastewater and building bypasses to decrease air pollution of settlements.	Relevant rather for the OP
Balaton-felvidéki Nemzeti Park Igazgatóság	National Parks are not authorities, but bodies responsible for environment protection.	The change is made throughout the report.
Győr-Moson-Sopron Megyei Kormányhivatal Nép-egészségügyi Szakigazga-tási Szerve	Agreeing with the report	-
Országos Tisztifőorvosi Hivatal Országos Környezetegészségügyi Intézet	Some of the stated measures are overruled by now. Suggestion for new indicators Suggestions for smaller changes and supplements in chapter 4.	Suggested new measures are listed in chapter 3.3. Unfortunately it is not possible now to add new indicators, the assessment had been carried out already. All suggested corrections are made.
Észak-dunántúli Környezetvédelmi és Természetvédelmi Felügyelőség	Agree with the report	-
Zala Megyei Kormányhivatal ZJH Építésügyi és Örökségvédelmi HIvatal	They miss some important cultural heritage sites (Zalavár, Zalalövő, Keszthely-Fenékpuszta) from the SEA.	Not relevant (relevant rather for the OP)
Zala Megyei Kormányhivatal Erdészeti	Agree with the report, emphasis on the prohibition of any construction works,	-

Igazgatóság	investments in forests.	

Some of the responses given for the SEA report are relevant rather to the Operation Programme. We advert the attention of the Programming Group to these comments.

The contacted Austrian authorities and environmental bodies had given one response; this was concerning the operational programme. The Environmental Report was not commented; therefor no changes were made in the Austrian part.

2.4 How the SEA´s suggestions affect the programme

The SEA's suggestions do not have the legal authorisation to modify the programme, but draw attention to Objectives or Priorities that may result in negative impacts on the environment. The Programming Group has the right to make modifications in the programme, or set up new or stricter expectations or indicators to strain out projects that could have harmful impacts on the environment.

The Authorities consulted during the SEA-process as mentioned in the processing-scheme can make suggestions and are integrated in the programming process.

1. The scoping document will be delivered to the authorities. Feedback will be integrated into the documents.
2. The environmental report will be delivered to the authorities. Feedback will be integrated into the documents.
3. Public Participation: Information will be provided via the program's web-sites. Feedback will be integrated into the documents.

2.5 Sources of data used in the SEA

The data that the studies refer to, especially the investigation of status quo and trends without implementation of the program, should meet the following requirements:

- They must be freely available. Possible special mapping or unpublished data are not used.

- They need to be updated frequently. Without up-dated data, a monitoring or control the influences of the program cannot be performed.

Since this SEA is assessing no concrete plan or project it is not intended to use individual small-scale data. There are generally valid statements for the entire study to be made.

The main data sources are for that reason the Environmental Agency of Austria (Umweltbundesamt), Statistik Austria, the "Lebensministerium" (BMLFUW) and the KSH (Hungarian Central Statistical Office) and the West-Transdanubian Environment and Nature Protection Inspectorate 2012.

2.6 Applied methods

The SEA evaluates possible environmental impacts related to priorities of the CBC HU-AT 2014-2020 Programme and gives recommendations on how to enhance the quality of the Programme in respect to environmental aspects. The development of the environmental issues and guiding questions/indicators in case that the Programme will not be implemented creates a "zero"-option which is defined as the "baseline" for the overall assessment process. The assessment of positive and negative effects of the different Programme priorities and objectives is summarized in a rating matrix using the following rating scheme:

++	Positive impact on the subject of protection expected
+	Tends to result in a positive impact
0 +	Slight positive impact expected
0	No or negligible impact expected
0 -	Slight negative impact expected
-	Tends to result in a negative impact
- -	Negative impact on the subject of protection expected

Table 4: Rating System

In addition the size and probability of impact is evaluated in a „3 Star"-system. As mentioned, the rating always refers to the „zero option". Zero option and trend without implementing the program refer to data, rating is expert's opinion.

The rating matrix considers programme priorities and activity fields like illustrated below by way of example:

<table>
<tr><td colspan="4">3d) capacity of SMEs to engage in growth and innovation processes
1) Increasing the collaborative research & innovation capacities of SMEs focusing on the development of internationally competitive local products.
2) Increasing the effectiveness of services provided by intermediary organisations dealing with economic development to enhance the development of internationally competitive local products, manufacturing and marketing capacities for the SMEs of the region.</td></tr>
<tr><td rowspan="2"><u>INDICATORS</u></td><td rowspan="2"></td><td>Risks, comments</td><td colspan="2">Risks
* : small
** : medium
*** : large</td></tr>
<tr><td>In case the supported innovation is connected to energy saving and climate-friendly, then the impact is positive. If not, the OP is likely to have negative impacts as well.</td><td>Size of impact</td><td>Probability of impact</td></tr>
</table>

Increase of land consumption, sealing	AU HU	-	Due to possible construction of commercial facilities that may arise from project initiatives a slight increase of sealing compared with the zero-option to be expected. *In the formulation of this focus is recommended to favor resource-saving projects.*	*	*

In addition to this matrix, a qualitative description of possible positive or negative effects which are induced by the Programme priorities and sub-priorities is carried out. Direct as well indirect impacts are assessed. According to the EIA-Directive also "secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects" are considered in the evaluation. Basis for the assessment is the expert knowledge of the project team. To improve the accuracy of the assessment the assessment is conducted oriented towards the group Delphi method. The level of detail of the assessment is based on the level of detail the Programme provides. The content of the Environmental Report meets the requirements of the Directive 2001/42/EC.

2.7 Method of generating alternatives and monitoring.

To enhance the environmental quality of the Programme document the suggestions for reformulations set out in the SEA were delivered to the Drafting Team within a qualitative feedback loop. This strategic consulting enabled the integration of environmental considerations into the preparation and adoption of the Programme with a view to sustainable development. The final draft of the Programme therefore itself constitutes the required alternative option demanded by Directive 2001/42/EC.

Unlike to a SEA concerning a concrete project this SEA should give recommendations for the formulation of certain investment priorities. Projects to be implemented within this programme should refer on environmental standards suggested in this SEA.

The zero-option, which is defined as the "baseline" for the overall assessment process, also constitutes an alternative according to Directive 2001/42/EC.

Since it is not possible to predict which projects are proposed and implemented monitoring measures are not exactly to formulate. This should be done at an early stage of the program phase.

2.8 Difficulties of the assessment

Because of the low level of detail of the Programme and the broad thematic approach the environmental assessment only shows an outline of possible environmental effects. Priorities and fields of activities allow a broad range of possible measures and projects. That is why the assessment of possible or negative impacts of the programme has to deal with many uncertainties. To

tackle with this problem objectives and priorities are analysed by using carefully selected guiding questions and indicators to identify "likely" impacts on environmental issues and by also using the evaluation results of the last programming period, which indicate possible project's funding results.

3 OBJECTIVES OF ENVIRONMENTAL PROTECTION AND THEIR INDICATORS

The environmental protection objectives, including the selected relevant indicators, which are relevant for the programme and the programme region, are described in several protocols, strategies and legislatives. They present the higher aim to be reached by each action affecting the environmental issues that are described later in this report.

3.1 International Objectives

Some of the international documents containing objectives relevant for the programme are:

- Johannesburg Declaration 2002: guiding principles on sustainable development; builds on earlier declarations made at the United Nations Conference at Stockholm in 1972, and the Earth Summit in Rio de Janeiro in 1992
- Protocol of Kyoto 1997: International aims of Climate protection
- UN Convention on Biological Diversity (CBD, 1992)
- CBD Strategic Plan 2011-2020
- Nagoya-Protocol 2010

Aims: The conservation of biological diversity, the sustainable use of the components of biological diversity (CBD) and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources (Nagoya-Protocol).

3.2 Objectives for the European Union

It is not possible within this SEA to give a complete summary of objectives valid in the European Union. Some of the most important directives are:

- EU biodiversity strategy 2020, (COM(2011)0244). Aims: halt loss of biodiversity and decline of ecosystems and their services within EU, raise EU contribution to international protection of biodiversity. The Strategy follows three priorities, which were adopted in June 2010:
  - Smart growth: developing an economy based on knowledge and innovation.

  - Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
  - Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.
- Natura 2000: European network of more than 26,000 protected sites (bird and habitats); Aims: implementation of CBD; ensure the survival of Europe's most valuable species and habitats
- EU strategy for the Danube region (EUSDR, 2011). Aims related to subject of protection: pro-tecting the environment in the Danube region and preserve biodiversity and landscapes.
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
- Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy ("Water Framework Directive").

3.3 Objectives and Legal Basis for Each Objective by Country

Factors	Objectives	Legal Basis
Environmental Media Soil Water Air Climate The Landscape	The functions of the soil (archive function, soils with high soil fertility, and soil as a site for rare plant species) are to back up sustainable or to restore. Impacts on the soil concerning its natural functions as well as its function as an archive of natural and cultural history should be avoided where possible. Achieve good quality of surface and ground waters as defined in the Water Framework Directive 2015 Save present quality of ground waters Comply with legal limits listed in the	• Bundesgesetz vom 3. Juli 1975, mit dem das Forstwesen geregelt wird (Forstgesetz 1975), BGBl. Nr. 440/1975 idF BGBl. I Nr. 83/2004 • Verordnung des Bundesministers für Land- und Forstwirtschaft betreffend Schwellenwerte für Grundwasserinhaltsstoffe (Grundwasserschwellenwertverordnung - GSwV), BGBl. Nr. 502/1991 idF BGBl. II Nr. 147/2002 • Richtlinie 2001/42/EG des Europäischen Parlament und des Rates vom 27. Juni 2001 über die Prüfung der Umweltauswirkungen bestimmter Pläne und Programme, ABl. Nr. L197/30 vom 21. Juli 2001 • Bundesgesetz über die Prüfung der Umweltverträglichkeit (Umweltverträglichkeitsprüfungsgesetz 2000 – UVPG 2000), BGBl. Nr. 697/1993 idF BGBl. I Nr. 153/2004 • Richtlinie 2000/60/EG des Europäischen Parlaments und des Rates vom 23. Oktober 2000 zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Wasserpolitik, ABl. Nr. L 327/1 vom 22. Dezember 2000 idF ABl. Nr. L 331/1 vom 15. Dezember 2001 (Wasserrahmenrichtlinie, WRRL) • Wasserrechtsgesetz 1959 - WRG 1959, BGBl. Nr. 215/1959 idF BGBl. I Nr. 112/2003

Factors	Objectives	Legal Basis
	Air Quality Framework Directive Promote low carbon technologies to reduce emissions and noise Reduce greenhouse gas emissions according to Kyoto protocol Minimize land consumption.	• 2007. évi CXXIX. törvény a termőföld védelméről • 2012. évi CCCVIII,, és az 1995. LVII. törvény a vízgazdálkodásról • 2007. évi LX. törvény az ENSZ Éghajlatváltozási Keretegyezménye és annak Kiotói Jegyzőkönyve végrehajtási keretrendszeréről • 306/2010. (XII. 23.) Korm. rendelet a levegő védelméről • 310/2008. (XII. 20.) Korm. rendelet az ózonréteget lebontó anyagokkal és egy fluortartalmú üvegházhatású gázokkal kapcsolatos tevékenységekről • 306/2010. (XII. 23.) Korm. rend. a levegő védelméről • 10/2001. (IV. 19.) KöM rendelet az egyes tevékenységek és berendezések illékony szerves vegyület kibocsátásának korlátozásáról • 4/2011. (I. 14.) VM rendelet a levegőterheltségi szint határértékeiről és a helyhez kötött légszennyező pontforrások kibocsátási határértékeiről • 6/2011. (I. 14.) VM rendelet a levegőterheltségi szint és a helyhez kötött légszennyező források kibocsátásának vizsgálatával, ellenőrzésével, értékelésével kapcsolatos szabályokról • 6/2009. (IV. 14.) KvVM-EüM-FVM együttes rendelet A földtani közeg és a felszín alatti vízszennyezéssel szembeni védelméhez szükséges határértékekről és a szennyezések méréséről • A Tanács 98/83/EK irányelve (1998. november 3.) az emberi fogyasztásra szánt víz minőségéről • 201/2001. (X. 25.) Korm. rendelet az ivóvíz minőségi követelményeiről és az ellenőrzés rendjéről 219/2004. (VII. 21.) Korm. rendelet a felszín alatti vizek védelméről • 50/2001. (IV. 3.) Korm. rendelet a szennyvizek és szennyvíziszapok mezőgazdasági felhasználásának és kezelésének szabályairól • Nemzeti Éghajlatváltozási Stratégia 2013 • Nemzeti Energiastratégia 2030
Fauna and Flora Fauna Flora Woodland Forest Wild Habitats Biological Diversity	Ensure that permanent biodiversity populations including their habitat and the exchange between populations as well as hiking and re-colonisations are allowed according to their degree of hazard. The land use of appropriately used areas should be avoided. A fragmentation of habitats and life-networks should be avoided. An impairment of areas with special protection status (FFH habitats, conservation areas), no matter which category of living organisms and the Red List have to be excluded. Raise greater public awareness of biodiversity issues Raise area and category of conservation areas to protect and restore habitats and halt the loss of biodiversity and degradation of ecosystem functions	• Richtlinie 92/43/EWG des Rates vom 21. Mai 1992 zur Erhaltung der natürlichen Lebensräume sowie der wildlebenden Tiere und Pflanzen (Fauna-Flora-Habitat-Richtlinie), ABl. Nr. L 206/7 vom 22. Juli 1992, idF ABl. Nr. L 284/1 vom 31. Dezember 2003 • Richtlinie 79/409/EWG des Rates vom 2. April 1979 über die Erhaltung der wildlebenden Vogelarten (Vogelschutz-Richtlinie), ABl. Nr. L 103/1 vom 25. April 1979 idF ABl. Nr. L 236/870 vom 23. September 2003 • EU biodiversity strategy 2020, (COM(2011)0244) • Aims: halt loss of biodiversity and decline of ecosystems and their services within EU, raise EU contribution to international protection of biodiversity • Natura 2000: European network of more than 26,000 protected sites (bird and habitats); • Aims: implementation of CBD; ensure the survival of Europe's most valuable species and habitats • EU strategy for the Danube region (EUSDR, 2011) • Aims related to subject of protection: protecting the environment in the Danube region and preserve biodiversity and landscapes • Austrian Biodiversity Strategy (BMLFUW 2005a) • Austrian National Park Strategy (Österreichische Nationalpark-Strategie) (BMLFUW 2010) • priority list for protection of habitats, plants and vertebrates, (NATURSCHUTZBUND Österreich 2008) • Austrian AgriEnvironmental Programme, (ÖPUL) for conserving biodiversity on agricultural areas and forests

Factors	Objectives	Legal Basis
		• 1998. évi XXVIII. törvény az állatok védelméről és kíméletéről • 2009. évi XXXVII. törvény az erdőről, az erdő védelméről és az erdőgazdálkodásról • 1995. évi LXXXI. törvény a Biológiai Sokféleség Egyezmény kihirdetéséről • A természet védelméről szóló 1996. évi LIII. törvény • 275/2004. (X. 8.) Korm. rendelet az európai közösségi jelentőségű természetvédelmi rendeltetésű területekről (Natura 2000 területek)
Human Health Landscape and landscape household Landscape scenery Utilization and exploitation Material assets Cultural Heritage	The program is to be developed so that adverse environmental impacts on the living serving areas and other public use areas or buildings are exclusively or predominantly as far as possible avoided. Substantial reduction of noise pollution/exposure Reduce the share of population exposed to long term medium noise level from e.g. traffic and industry Promote low carbon technologies to reduce emissions and noise Reduction of sealed soil per day Establish green infrastructure Valorise cultural heritage in a sustainable, environment friendly and resource efficient way Raise awareness amongst local authorities, population and tourists Maintain and restore the protective capacity of ecosystems Increase recycling rates and resource efficiency from extraction and processing Reduce total amount of waste disposed Increase use of renewable raw materials Stabilize final energy consumption Increase share of renewable energy sources like hydro and wind power, biomass and photovoltaic Increase security of supply Improve energy efficiency Improve cross border accessibility by public transport infrastructure Improve regional mobility by environmental friendly transport solutions	• Luftqualitäts- Rahmen-RL; Richtlinie 96/62/EG des Rates vom 27. September 1996 über die Beurteilung und die Kontrolle der Luftqualität, ABl. Nr. L 296/55 vom 21. November 1996 idF ABl. Nr. L 284/1 vom 31. Dezember 2003; Richtlinie 1999/30/EG des Rates vom 22. April 1999, über Grenzwerte für Schwefeldioxid, Stickstoffdioxid und Stickstoffoxide, Partikel und Blei in der Luft, ABl. Nr. L 163/41 vom 29. Juni 1999 idF ABl. Nr. L 278/35 vom 23. Oktober 2001 • Richtlinie 2000/69/EG des Europäischen Parlaments und des Rates vom 16. November 2000 über Grenzwerte für Benzol und Kohlenmonoxid in der Luft, ABl. Nr. L 313/12 vom 13. Dezember 2000 idF ABl. Nr. L 111/31 vom 20. April 2001 • Richtlinie 2002/3/EG des Europäischen Parlaments und des Rates vom 12. Februar 2002 über den Ozongehalt der Luft, ABl. Nr. L 67/14 vom 9. März 2002 • Richtlinie 2004/107/EG des Europäischen Parlaments und des Rates vom 15. Dezember 2004 über Arsen, Kadmium, Quecksilber, Nickel und polyzyklische aromatische Kohlenwasserstoffe in der Luft, ABl. Nr. L 23/3 vom 26. Jänner 2005 • Bundesgesetz über Maßnahmen zur Abwehr der Ozonbelastung und die Information der Bevölkerung über hohe Ozonbelastungen, mit dem das Smogalarmgesetz, BGBl. Nr. 38/1989, geändert wird (Ozongesetz), BGBl. Nr. 210/1992 idF BGBl. I Nr. 34/2003 • Immissionsschutzgesetz-Luft, BGBl. I Nr. 115/1997 idF BGBl. I Nr. 34/2003 • Richtlinie 96/61/EG des Rates vom 24. September 1996 über die integrierte Vermeidung und Verminderung der Umweltverschmutzung (IPPC-Richtlinie), ABl. Nr. L 257/26 vom 10. Oktober 1996 idF ABl. Nr. L 284/1 vom 31. Dezember 2003 • Bundesgesetz vom 7. Juni 1989 zur Finanzierung und Durchführung der Altlastensanierung, mit dem das Umwelt- und Wasserwirtschaftsfondsgesetz, BGBl. Nr. 79/1987, das Wasserbautenförderungsgesetz, BGBl. Nr. 148/1985, das Umweltfondsgesetz, BGBl. Nr. 567/1983, und das Bundesgesetz vom 20. März 1985 über die Umweltkontrolle, BGBl. Nr. 127/1985, geändert werden (Altlastensanierungsgesetz), BGBl. Nr. 299/1989 idF v. BGBl. I Nr. 71/2003 • KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, 11 December 1997
		• 2003. évi XXVI. törvény az Országos Területrendezési Tervről • 2001. évi LXIV. törvény a kulturális örökség védelméről • 2012. évi XCV. törvény a kölcsönzött kulturális javak különleges védelméről • 324/2010. (XII. 27.) Korm. rendelet a Kulturális Örökségvédelmi Hivatalról, a kulturális örökségvédelmi szakigazgatási szervekről, és eljárásaikra vonatkozó általános szabályokról • A hulladékokról szóló 2012. évi CLXXXV. törvény;

Factors	Objectives	Legal Basis
		• 98/2001. (VI. 15.) Korm. rendelet a veszélyes hulladékokkal kapcsolatos tevékenységek végzésének feltételeiről; • 1/2002. (I.11.) EüM rendelet az egészségügyi intézményekben keletkező hulladék kezeléséről; • 16/2002. (IV. 10.) EÜM rendelet a települési szilárd és folyékony hulladékokkal kapcsolatos közegészségügyi követelményekről

Table 5: Environmental Objectives and legal basis in Austria and Hungary (selection)

3.4 Indicators and Environmental Protection Issues /Objectives

The SEA will cover the following subjects of protection (Environmental issues) and their associated indicators:

Environmental Issue	Specification	Indicators
Environmental Media	Soil Water Air Climate The Landscape	• Land consumption, sealing • Impact on soil quality • Impact on water quality • Impact on hydrology • Visual impacts on landscape • Airborne emissions excl. GHG-emissions
Fauna and Flora	Fauna Flora Woodland Forest Wild Habitats Biological Diversity	• Impact on Biodiversity (Development of threatened species according to Red Lists) • Forest condition, silviculture • Condition and development of nature protection areas • Impacts due to barrier effects • Impacts on wild habitats
Human beings	Health Landscape and landscape household Landscape scenery Utilization and exploitation Material assets Cultural Heritage	• Land consumption • Number/area of regions threatened from natural hazards • Status of hazard zone planning • Increase of traffic • Increase of waste • Use of renewable raw materials • Use of fossil raw materials • Increase of energy consumption

		• Impacts on cultural heritage • Volume of vehicular traffic • Quality of infrastructure for environmental friendly mobility
Interactions and correlations		• Accumulation of impacts • Coaction of impacts

Table 6: Environmental Issues and Indicators.

4 CURRENT SITUATION AND TRENDS WITHOUT PROGRAMME IMPLEMENTATION

4.1 Status Quo and Trend without Implementing the Programme – Austria

The main sources for assessing the current situation and the trend without implementing the programme is the 10th Environmental Control Report, Umweltbundesamt 2013. This report is issued regularly, so it is guaranteed the trend is able to be monitored. Furthermore other reports are taken into account, e.g. the Report on Water Quality (BMLFUW and Umweltbundesamt, 2012). Further sources: Statistik Austria, Bundesamt für Eich- und Vermessungswesen, BMLFUW.

4.1.1 Increase of land consumption, sealing, and visual impacts on landscape

4.1.1.1 Status

In Austria more than 20 ha of agricultural and silvicultural land are built up every day for settlements, infrastructure, energy production, disposal or economic reasons.

The construction and transport area has between 2009 and 2012 increased by nearly 10% (BEV 2009, 2012). During the same period, however, the population increased by only 1.1% and the number of households increased by 2.4% (Statistics Austria 2012a).

The total daily rate of sealing (construction and traffic areas, sports facilities, infrastructure areas) was in the period 2009-2012 at 22.4 ha / day and remains compared to the previous period (2001-2009) at a very high level. The decline in the growth of construction and traffic areas was due to the large increase of other infrastructure areas (supply and disposal areas, storage areas, etc.) in the amount of + 12.4 ha / day. Already 17% of the permanent settlement area is taken by these uses.

This is accompanied by the progressive soil sealing, i.e., the soil cover by impermeable layers (asphalt). On average the last three years at least **4.3 ha per day** were sealed (BEV 2009, 2012).

nur Baufläche

	erfasste Baufläche [km²]				Zunahme 2002-2012		Zunahme pro Tag [ha/d]	
Bundesland	**2002**	**2010**	**2011**	**2012**	***absolut [km²]***	***relativ [in % von 2001]***	**Trend 2002-2012**	**aktuelles Jahr 2011-2012**
Burgenland	**124**	**164**	**165**	**166**	***41,9***	***34%***	**1,1**	**0,2**
Kärnten	182	203	205	208	*25,8*	*14%*	0,7	0,5
Niederösterreich	**574**	**679**	**682**	**686**	***112,2***	***20%***	**3,1**	**0,9**
Oberösterreich	392	447	455	461	*68,5*	*17%*	1,9	2,2
Salzburg	119	127	128	128	*9*	*8%*	0,2	0,2
Steiermark	**367**	**428**	**431**	**436**	***69,7***	***19%***	**1,9**	**0,8**
Tirol	149	170	170	170	*21,1*	*14%*	0,6	0,1
Vorarlberg	76	79	82	86	*10,3*	*14%*	0,3	0,8
Wien	**137**	**138**	**137**	**135**	***-2,6***	***-2%***	**-0,1**	**-0,1**
Österreich	2,119	2,434	2,455	2,475	*356*	*17%*	9,8	5,6

Bau- und Verkehrsfläche

	Bau- und Verkehrsfläche [km²]				Zunahme 2002-2012		Zunahme pro Tag [ha/d]	
Bundesland	**2002**	**2010**	**2011**	**2012**	***absolut [km²]***	***Relativ [in % von 2001]***	**Trend 2002-2012**	**aktuelles Jahr 2011-2012**
Burgenland	**269**	**315**	**317**	**317**	***48,5***	***18%***	**1,3**	**0,2**
Kärnten	368	397	399	402	*34,1*	*9%*	0,9	0,9
Niederösterreich	**1,172**	**1,304**	**1,309**	**1,311**	***139,1***	***12%***	**3,8**	**0,3**
Oberösterreich	726	797	806	814	*87,8*	*12%*	2,4	2,1
Salzburg	218	229	230	231	*13,3*	*6%*	0,4	0,2
Steiermark	**711**	**792**	**794**	**791**	***80,2***	***11%***	**2,2**	**-0,8**
Tirol	272	299	302	304	*32,5*	*12%*	0,9	0,7
Vorarlberg	117	122	126	132	*15*	*13%*	0,4	1,6
Wien	**191**	**194**	**194**	**191**	***-0,1***	***0%***	**0**	**-0,6**
Österreich	4,044	4,448	4,478	4,494	*450*	*11%*	12,3	4,5

Table 7: Land consumption 2002-2012 in Austria. Source: Statistik Austria, 2013

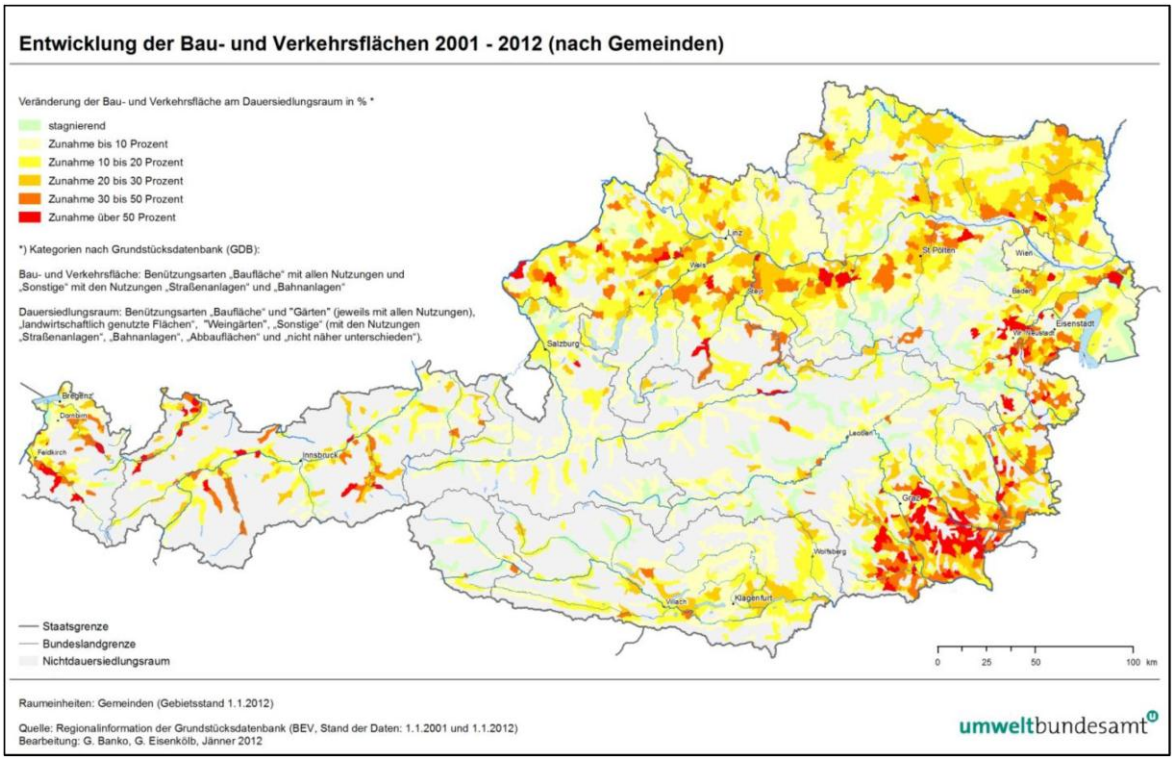


Figure 4: Spatial development of construction and traffic areas. Source: Umweltbundesamt, 2013.

4.1.1.2 Trend

-	As it can be seen from the figures the sealing process progresses rapidly in the programme area. Although the dramatic trend of land use has slowed somewhat in recent years (due to the economic crisis), it cannot be assumed that there is a trend reversal. The influence on the landscape remains at a high level. The conflict between the production of renewable energy and landscape (wind power plants, monocultures for "organic" heating plants) remains.

4.1.2 Impact on soil quality

4.1.2.1 Status

The Austrian sustainability strategy aims to secure the functionality and availability of soils in qualitative and quantitative terms and on a permanent basis.

An evaluation of the soil's functions has up to now taken place only in a few cases. As changes in land use mostly lead to the development of larger settlement areas or agglomerations and result in soil carbon losses, about 400 kt CO2 are released every year. Studies have shown that the concentrations of organic pollutants are elevated in soils along the northern and south-eastern edges of the Alps.

An area wide investigation of the qualitative status of soil does not exist. Only project orientated investigations as for environmental impact assessments are put into practice.

In view of the diverging claims on soil utilisation, a standard evaluation of the soil's functions has to be carried out to ensure a sustainable use of soils. To ensure the conservation of soils as a natural resource and to safeguard the soil's capacity of carbon sequestration, regulatory measures have to be included in spatial planning. For an evaluation of the current pollutant concentrations in soils national soil monitoring is needed, as are national evaluation standards.

4.1.2.2 Trends

0	An evaluation of the soil's functions has up to now taken place only in a few cases. As changes in land use mostly lead to the development of larger settlement areas or agglomerations and result in soil carbon losses, about 400 kt CO2 are released every year. Studies have shown that the concentrations of organic pollutants are elevated in soils along the northern and south-eastern edges of the Alps. With the exception of forest soils nationwide statements about the change of heavy metal pollution of soils are currently not possible, as repetitions of the first elevations mostly missing (UMWELTBUNDESAMT 2010b). For forest soils within the framework of an EU project (BioSoil) a monitoring was performed on approximately 30% of the sites in the years 2006/2007. Significant decreases show up for lead and mercury (MUTSCH & Leitgeb 2009). The slightly decreasing of heavy metal pollution and the on-going increase of sealing and more intensive land use lead to a zero-development.

4.1.3 Impact on water quality

4.1.3.1 Status

The water quality and it´s protection refers to the "Nationaler Gewässerbewirtschaftungsplan" (BMLFUW 2010) that is based on the Water Framework Directive (WRRL; RL 2000/60/EG) and the "Österreichisches Wasserrechtsgesetz 1959; BGBI. Nr. 215/1959). The treatment of waste water is regulated by the Water Framework Directive, the Nitrates Directive and the Urban Waste Water Treatment Directive.

In Austria, natural surface water bodies without modified or artificial waters account for 88% of the network. Sixteen per cent of these have a high ecological status, 23% have a good one, and 51% have a moderate, 8% a poor and 2% a bad ecological status. With 100 per cent of Austrian drinking water coming from ground- and spring water, the quality of drinking water is among the very best in the world. In the intensively agricultural used areas in the North and East of Austria like the Marchfeld region or the Wiener Umland there are some deficits in the saprobiological

waterquality and nutrient loads in the running waters. Failure to meet the target due to general pollutant loads – organic load, nutrients – occurred in only 19% of water bodies.

Most of the water monitoring stations of running waters – 83% for annual mean and 60% for maximum value – show nitrate concentrations of < 10 mg NO3/l for the reporting period 2003-2007, the last reporting period in accordance with the EU Nitrates Directive 91/676/EEC. If one considers the development of nitrate concentrations in running waters over many years, on the whole it can be assumed that the situation is stable.

The ecosystems of the Danube River Basin are highly valuable in environmental, economic, historical and social terms, but they are subject to increasing pressure and serious pollution from agriculture, industry and cities. In addition to the Danube River, surface water network comprises March and Leitha.

In Austria, extensive measures were carried out for water pollution control in recent decades. In the year 2007 an action plan for the Raab River has been implemented between Hungary and Austria, which is successfully finished.

According to the Water Framework Directive almost two thirds of Austrian rivers did not reach the so called “good ecological status”. Therefor incentive schemes were carried out to increase the number of projects concerning the ecological improvement of water bodies of passage of fish and other aquatic organisms. Until the end of 2011 110 projects were carried out.

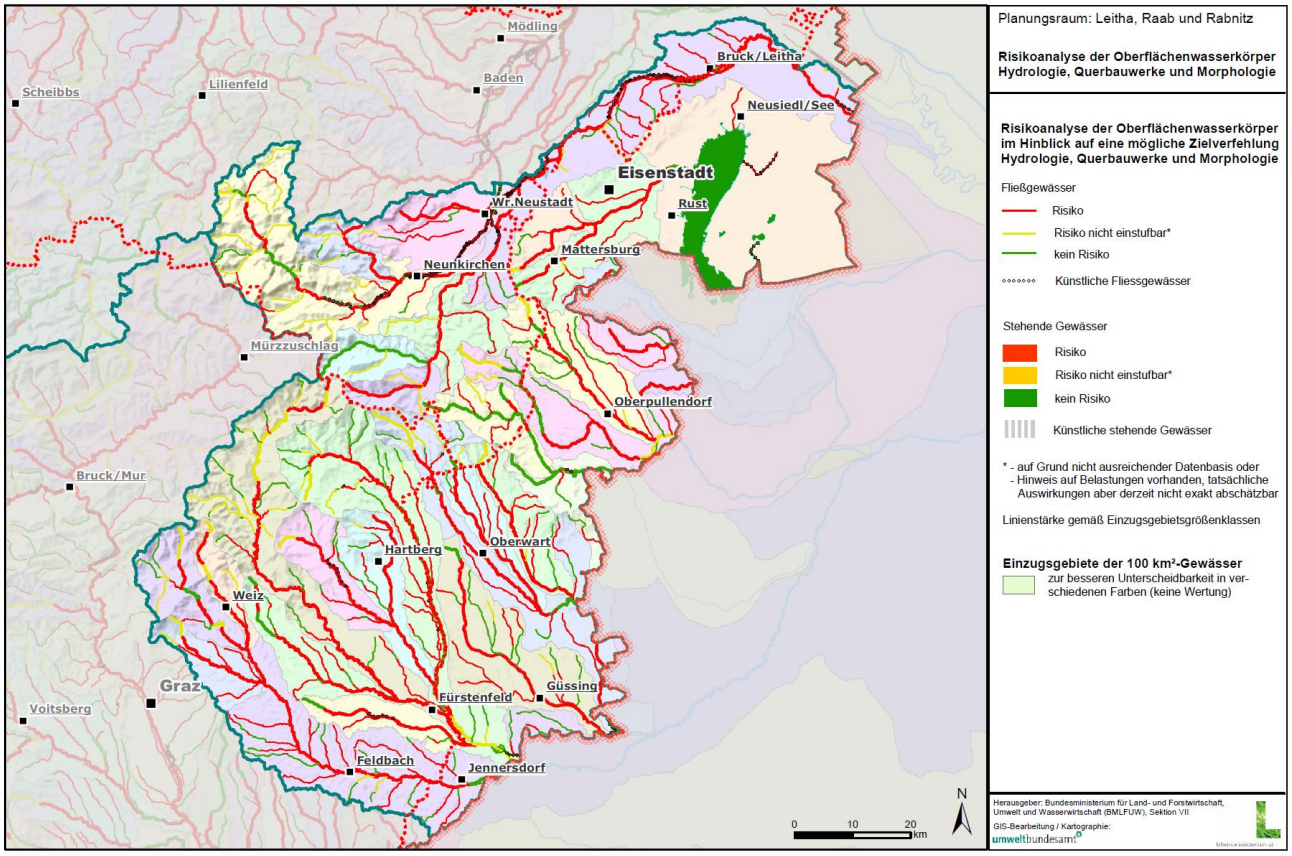


Figure 5: Risk analysis of the surface water body hydrology, transverse structures and morphology. Source BMLFUW, 2013.

Although the chemical quality of ground and surface waters is improving, however, action is needed in the field of the hydro-morphological condition of the water bodies, as clearly shown in the figure above.

4.1.3.2 Trend

0 +	The successes achieved in the prevention of water pollution are due to waste water treatment. For running waters a need for action was identified, in particular as far as the structure of water bodies and the hydrology are concerned. Remediation priorities up to 2015 include measures for the removal of barriers to fish migration and to improve the structures of water bodies, e.g. by restoring them to their natural state. An expansion of hydroelectric power generation is not entirely compatible with the ecological targets and should take into account the requirements of the Water Framework Directive. The trend without implementing the programme can be rated as slightly positive, due to actions already implemented. Action is needed, especially in the improvement of hydro-morphological condition.

4.1.4 Impact on hydrology and groundwater

4.1.4.1 Status

Nitrate and pesticide inputs from diffuse sources continue to cause regional problems with groundwater quality, especially the groundwater bodies in the eastern regions of Austria. See map.

The status has not improved in the recent years. Six groundwater bodies are action fields, where severe impacts on the quality of the groundwater bodies is noted, six areas are observation areas with party negative trends. These groundwater bodies are very vulnerable, because of intensive agricultural areas and water permeable soils (gravel), especially combined with poor precipitation (=poor dilution). See also: Wassergüte Jahresbericht 2012, BMLFUW and Umweltbundesamt, 2013

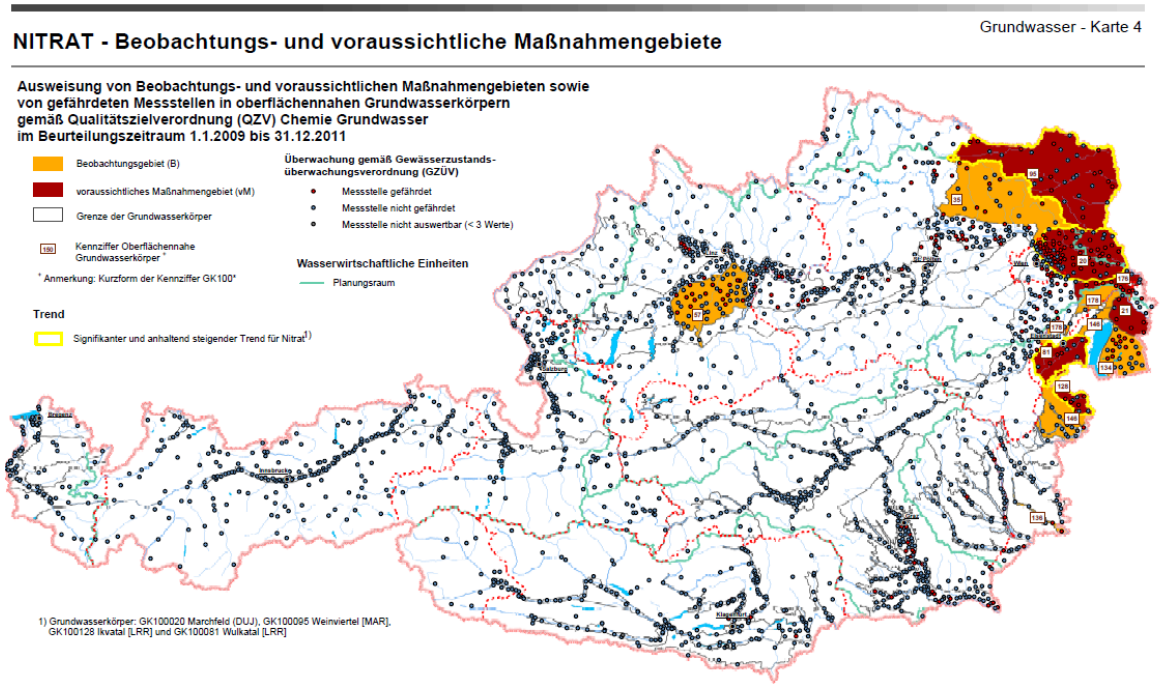


Figure 6: Nitrate pollution of groundwater bodies in Austria. Source: BMUWLF, 2012

Tabelle 2: Ergebnisse der Ausweisung von Beobachtungs- und voraussichtlichen Maßnahmengebieten 2009–2011 nach den Auswertekriterien der QZV Chemie GW (§ 10).

GWK	GWK-Name	Fläche (km²)	Jahresbericht (2010) 2007–2009	Jahresbericht (2011) 2008–2010	Jahresbericht (2012) 2009–2011
NITRAT					
GK100020	Marchfeld [DUJ]	942	vM (45/74)	vM (47/73; T)	vM (47/72; T)
GK100021	Parndorfer Platte [LRR]	254	vM (3/6)	vM (3/6)	vM (5/6)
GK100035	Weinviertel [DUJ]	1.347	B (6/16)	B (7/16)	B (7/17)
GK100057	Traun-Enns-Platte [DUJ]	810	B (15/50)	B (17/50)	B (17/50)
GK100081	Wulkatal [LRR]	386	B (3/9)	vM (3/9; T)	vM (3/9; T)
GK100095	Weinviertel [MAR]	2.008	B (10/32)	vM (13/32; T)	vM (13/32, T)
GK100098	Leibnitzer Feld [MUR]	103	B (10/27)		
GK100102	Unteres Murtal [MUR]	193	B (8/25)		
GK100128	Ikvatal [LRR]	165	B (4/9)	B (4/9)	vM (5/9; T)
GK100134	Seewinkel [LRR]	443	B (9/24)	B (9/24)	B (11/24)
GK100136	Stremtal [LRR]	50	B (2/5)	B (2/5)	B (2/5)
GK100146	Hügelland Rabnitz [LRR]	498	B (1/3)	B (1/3)	B (1/3)
GK100176	Südl. Wiener Becken-Ostrand [DUJ]	209	vM (9/13)	vM (9/13)	vM (9/13)
GK100178	Südl. Wiener Becken-Ostrand [LRR]	276	B (2/6)	B (2/6)	B (2/6)
Summe (km²)			7.684	7.388	7.388
Summe (B/vM)			(11/3)	(7/5)	(6/6)

Table 8: Affected water bodies in Austria. Source: Umweltbundesamt, 2013.

Only 2 out of 14 endangered groundwater bodies are not situated in the programme are. How to read the table: In the Seewinkel groundwater body 11 out of 24 monitoring stations did not reach the quality level of the target ordinances of the Water Act "Chemie GW § 10".

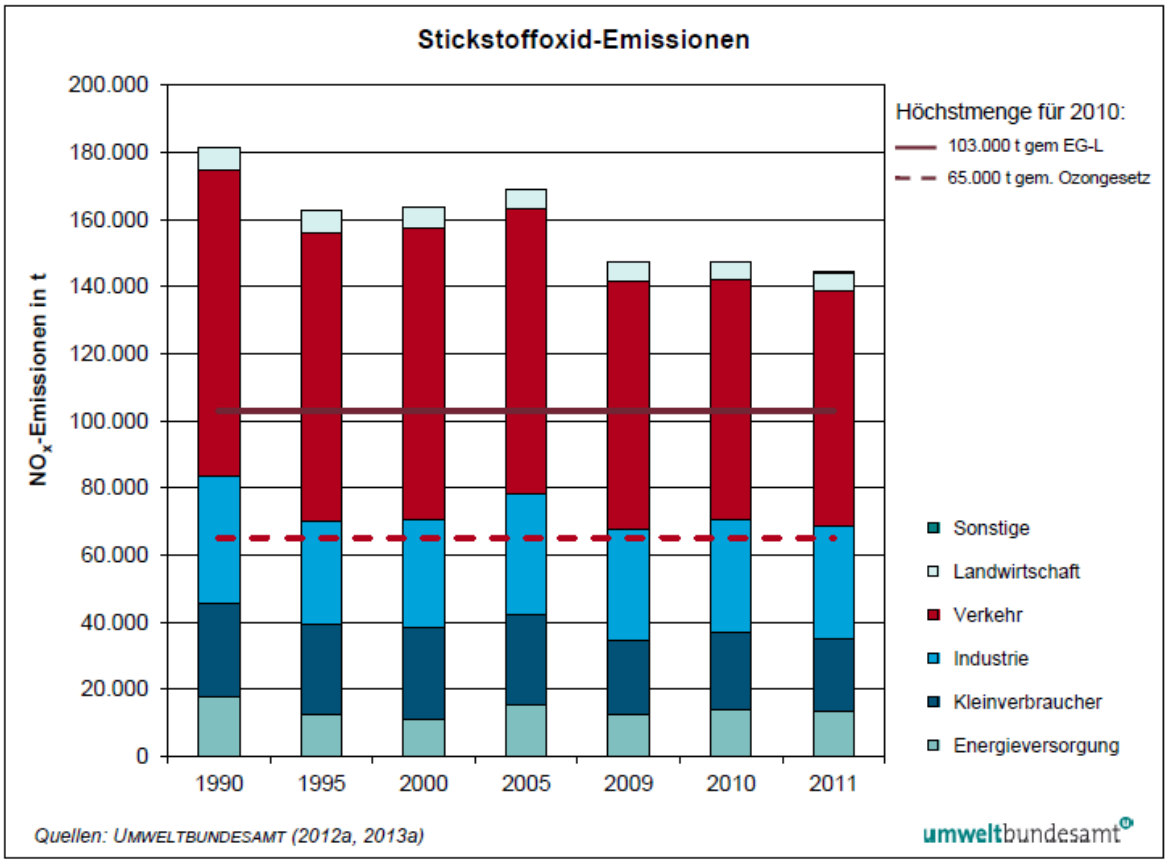


Figure 7: NO_X Emissions in Austria. Source: Umweltbundesamt, 2013.

Although there is a general downward trend, the amount of emissions (here e.g. the NO_2 emissions) is above the EG-guidelines.

4.1.4.2 Trend

0	Measures under the EU Regulation on support for rural development (rural development 2014-2020) should increasingly be designed in such a way that they comply with the requirements of (drinking) water protection and the prevention of water pollution so that they can help, along with the compulsory 'nitrate action programme' and through voluntary participation in the so-called ÖPUL programme, maintain or achieve the good status of groundwater bodies. Although many efforts are made to improve the quality of the water bodies the target values will not be reached. Even though water supply in Austria is guaranteed in some regions of Styria there is a trend towards a sinking groundwater table especially in dry years.

	So, some positive trends and the all in all unsatisfying situation causes a “zero-rating”.

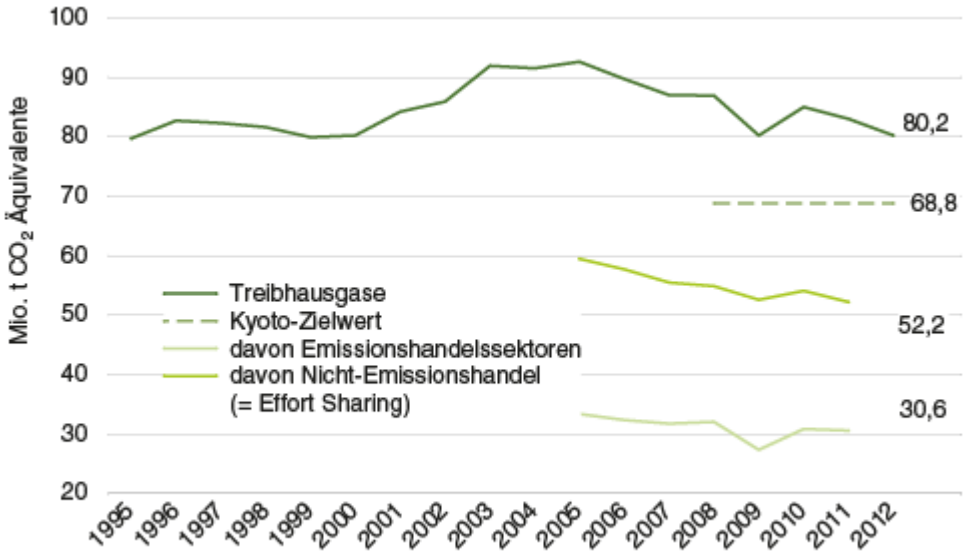
4.1.5 Airborne emissions, GHG-emissions, Impact on climate

4.1.5.1 Status

In 2011, in Austria 82.8 million tonnes of CO2 equivalent emitted and thus by about 6.0% more than in 1990. The greenhouse gas emissions were 14.1 million tonnes of CO2 equivalent over the annual average of around 68.8 million tonnes of CO2 equivalent for the 2008-2012 Kyoto target set in Austria in 2011. With the exception of 2010, the GHG emissions have decreased steadily since 2005. The increase in 2010 is due to the recovery of the economy after the 2009 crisis, the decline from 2010 to 2011 on the decreasing consumption of fossil fuels, partly due to the relatively mild winter of 2011 (UMWELTBUNDESAMT 2013A).

Important successes have been achieved in air quality management, but there is still much to be done. Particulate matter and nitrogen oxides put much more strain on the health of the Austrian population than is allowed under European Union regulations. Depending on where one lives, particulate matter alone can reduce one’s average life expectancy by several months.

For the implementation of the Kyoto Protocol it was necessary to achieve a 13% reduction of the national emission levels of 1990 in the period 2008-2012. A much larger part than originally planned of this reduction was achieved through the use of flexible instruments (i.e. climate change mitigation efforts abroad funded by Austria). But Austria failed to reach the targets of the “Klimastrategie 2007” (BMLFUW 2007)



Q: UMWELTBUNDESAMT. Erstellt am 17.02.2014.

Table 9: Greehouse gas emissions in Austria. Source: Statistik Austria, Umweltbundesamt, 2014.

The main reasons for the deviation are partly inadequate implementation of the measures and the high proportion of fuel exports in vehicle tanks (2011: 5.9 million tonnes of CO2 equivalent). The sectorial objectives of the climate strategy are not legally binding, for the implementation of the measures are often several institutions jointly responsible, also the Austrian provinces have not endorsed the climate strategy in 2007 politically. Even after the beginning of the Kyoto commitment period in 2008 only a third of the measures was fully implemented in relation to the amount of measures planned, two-thirds only partially or not at all (UMWELTBUNDESAMT 2009).

The measures implemented up to now have not been sufficient to guarantee that compliance with the limit values in Austria can be achieved within the pre-scribed period or in the future. In 2010 nitrogen oxide levels were about 40 % above the admissible levels specified in the Austrian Emission Ceilings Act - Air. The admissible levels of the European Air Quality Directive for particulate matter were exceeded in seven of the nine Austrian federal provinces in 2011. Several guidelines were implemented to achieve the 20% reduction of greenhouse gas emissions[2], (Umwelbundesamt, 2013)

4.1.5.2 Trends

To achieve the 2020 targets, the implementation of further energy efficiency measures and a promotion of the use of renewable energy sources will be absolutely necessary.

To limit global warming to 2 °C, a transformation into a low-carbon, climate friendlier economy will be necessary. To achieve this, increased efforts are needed and legally binding climate and energy policy targets have to be set in the medium and in the long term. On the whole, Europe has to accept its central role in paving the way for a global climate agreement.

Current scenarios that take into account both the measures of the Austrian Climate Strategy and the energy strategy and the measures proposed for climate protection law, show respect to future goal attainment the need of further action.

The development of the GHG Emission shows the scenario "with existing measures" - i.e. to date March 2012 measures implemented - by 2020 an increase to 81.6 million tonnes of CO2 equivalent (4.4% compared to 1990), by 2030 an increase to 84.0 million tonnes of CO2 equivalent (+ 7.5% compared to 1990). Those emissions that are not attributable to emissions trading and thus belong to the Effort Sharing pane, point in this scenario from 2005 to 2020, a decrease of 10.1%. This means that the Austrian Effort-sharing target of - 16% compared to 2005 without further measures will be missed (UMWELTBUNDESAMT 2013C).

[2] Emissionshandelsrichtlinie (RL 2009/29/EG); Effort-Sharing (Entscheidung Nr. 406/2009/EG); Richtlinie erneuerbare Energien (RL 2009/28/EG); Richtlinie über die Abscheidung und geologische Speicherung von Kohlendioxid (Carbon Capture and Storage) (RL 2009/31/EG); Energiestrategie Österreich (LEBENSMINISTERIUM & BMWFJ 2010); Klimaschutzgesetz (KSG; BGBl. I Nr. 106/2011)

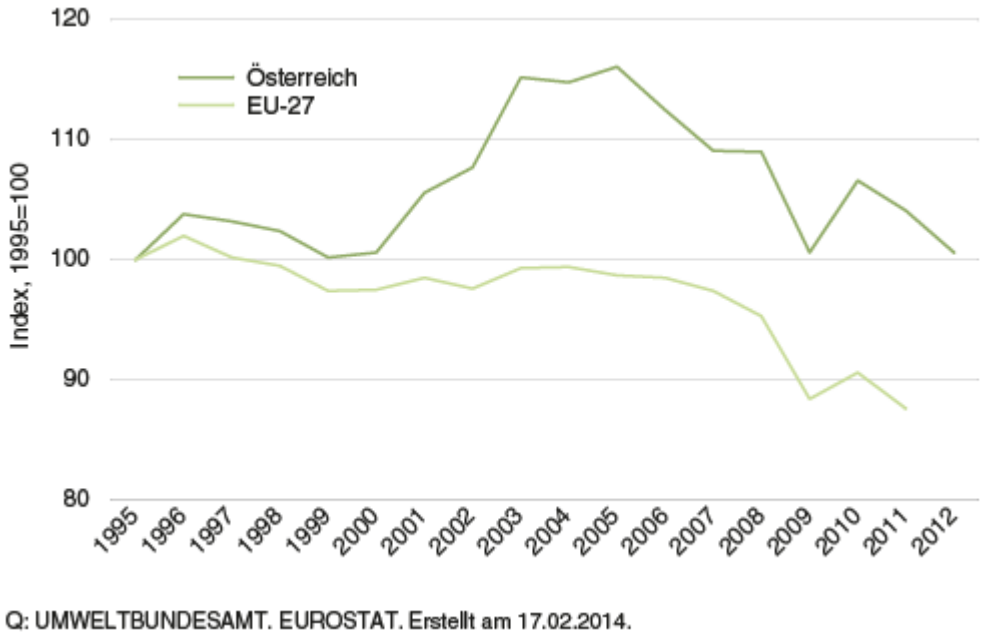


Figure 8: Greenhouse gas emissions in Austria and in the EU. Source: Statistik Austria, 2014.

In the scenario "with additional measures" - i.e. planned measures whose implementation is considered probable and which are effective emission by 2020 - the required reduction is achieved in the Effort Sharing area, however. The scenario projected for the year 2020 emissions of 77.3 million tonnes of CO2 equivalent (2030: 77.8 million tonnes of CO2 equivalent). Also, the goal of the Energy Strategy Austria is in this scenario is reached (UMWELTBUNDESAMT 2013C).

0 -	In summary, it cannot be clearly understood from a positive trend. In an additional scenario "with additional measures" there is even an improvement in the situation. However, this seems optimistic. Realistically, a slight negative trend can be assumed, depending on the development of the economy and the climatic situation.

4.1.6 Impact on Biodiversity, red-list-species, wild habitats and barrier effects

4.1.6.1 Situation

The development of a new biodiversity strategy that complies with EU requirements and the subsequent implementation of this strategy form the basis for securing the conservation and sustainable use of biodiversity in Austria. In particular, the requirements for the implementation of EU nature conservation legislation should be complied with consistently. For the new programming period biodiversity programmes should be included increasingly in the funding programmes.

As already mentioned in the SWOT-analysis of the programme area several European and International standards build up the legal framework related to protect the environment:

- EU's Biodiversity Strategy (2011)
- Europe 2020 Strategy (2010)
- Strategy for the Danube Region
- EU Water Framework Directive (2000)
- Austrian Strategy for Sustainable Development
- See Regional Analysis and Chap.

In Austria there are about 3,000 native ferns and flowering plants. Of these, 40% were already about 15 years ago at risk (BMUJF 1999). Current Austria-wide Red Lists of endangered plants are not available. The number of animal species in Austria is estimated at 45,000 (GEISER 1998), of this total, 98.6% to invertebrates. Current Red lists of endangered animals in Austria are for 19 groups of animals before (BMLFUW 2005b, 2007, 2009) as well as for old breeds of domestic animals (BMLFUW 2010b).

The five most vulnerable vertebrate species are Ground Squirrels, Great Bustard, Greater Horseshoe Bat, Orsini's Viper and Corncrake (ANL 2008). A prioritization of other groups of animals and plants and habitats is planned. In the program area, numerous habitats for these species are present.

An actualized list of all red list species is currently not available. About the wildlife (animals) there is at least a detailed list, which gives an impression of the state.

Gefährdungsgrad	*BG*	*NÖ*	*ST*	*WI*	*Gesamt*
Vom Aussterben bedroht	443	163	401	165	1172
Stark gefährdet	956	175	959	279	2369
Gefährdet	1391	224	1244	382	3241
Gefährdungsgrad unbekannt		109			109
Potenziell gefährdet	214	80	198	27	519
Potenziell gefährdet (Vorstufe)	73	66	187	4	330
Gänzlich geschützte Tiere	55	27	42	43	167
Ausgestorben, verschollen	203	123	356	266	948

Table 10: Degree of endangering of species in Burgenland, Lower Austria, Styria and Vienna. Source: Umweltbundesamt, written message, 2014.

In recent years, a number of conservation measures have been carried out, especially on the Danube, March, Mur and Lafnitz.

For Ground Squirrel and Great Bustard conservation projects were carried out both in Burgenland and Lower Austria. For the Great Bustard was achieved through habitat improvement measures already a significant population increase. Other species, whose populations or stocks in recent years could be improved locally in Austria, include yellow-bellied toad and forest steppe sagebrush. In recent years, the wildcat especially south of the Danube and in the Thaya Valley National Park was spotted.

In all provinces the protection of birds, bats and habitats is important.

In the last decade, measures to combat invasive alien plants have been carried out, for example, in the National Park Donau-Auen (balsam, acacia) as well as in the Vienna Woods (Giant Hogweed, Knotweed, Balsam).

There are numerous initiatives and programs (ÖPUL, LIFE) to get biodiversity and promote. Unfavourable factors on biodiversity represent in every case the use of land for construction and traffic areas and the associated fragmentation of the landscape.

To prevent the establishment of additional non-native species measures are to develop and to implement. The fight against once established, non-native invasive species (invasive species) is hardly possible or only with high resource use. In some protected areas, such measures are already being carried out.

In order to improve the stock situation of the FF-Habitats and the birds of the cultural landscape further measures to species and habitat protection are to be integrated into the new programs. The production of biomass must be compatible with nature.

As for the fragmentation of habitats, so the programme area is already at a very unfavourable level. Each transport-related construction project, regardless of size, can have an impact on the biotope network. In the execution of such measures is essential to pay attention to the environmental impact.

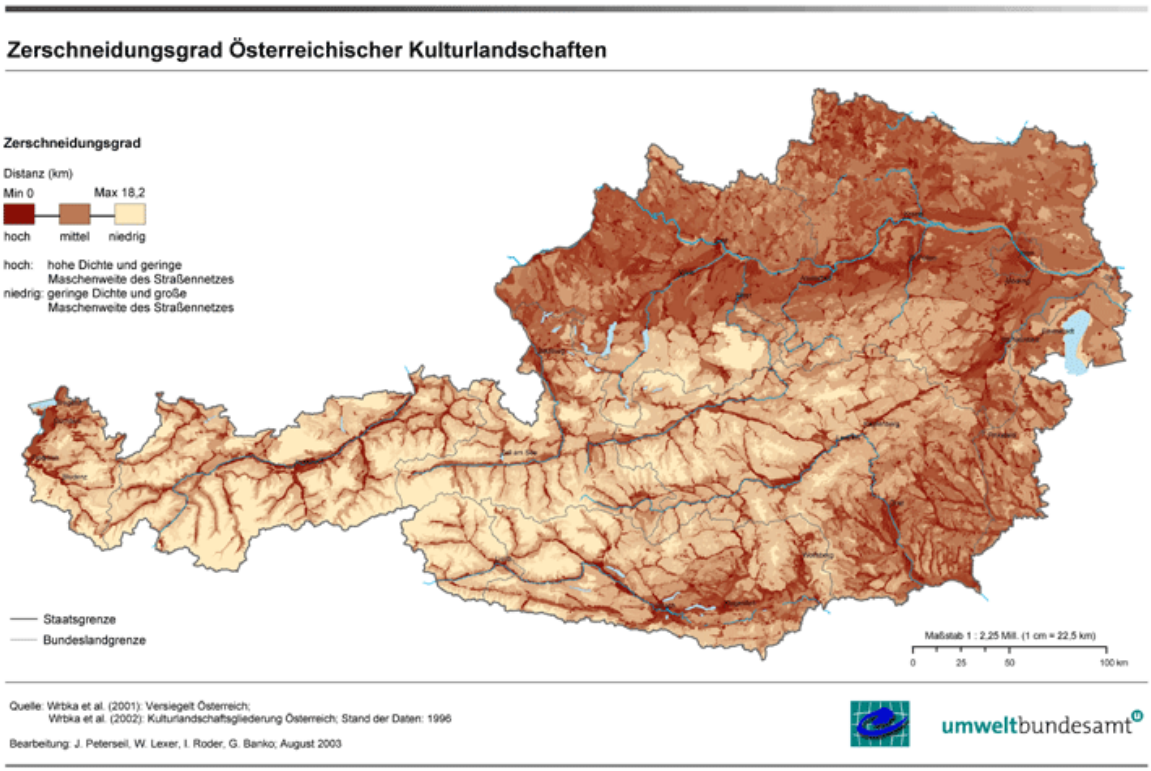


Figure 9: Degree of fragmentation of Austrian cultural landscapes. Umweltbundesamt,2003.

4.1.6.2 Trend

-	Despite the large number of measures, many species and habitats are in a precarious situation, which will be exacerbated even further by climate change.

4.1.7 Impact in forest condition

4.1.7.1 Status

The effects and benefits of forest ecosystems are mainly based on their biodiversity. In order to meet the challenges of climate change, biodiversity is to be preserved.

Simulations of forest development show that the composition of tree species in Austria will change significantly due to climate change. Spruce and other conifer stocks will decrease in low and intermediate altitudes , while deciduous species spread , especially beech and oak (UM-WELTBUNDESAMT 2001 , Lexer et al. , 2006 NIEDERMAIR et al. , 2007 STMELF 2007 BMLFUW 2008b , Lexer 2008). Significant adaptation measures are to strengthen the adaptive capacity of forest ecosystems by promoting the natural diversity of tree species, natural regeneration and improvement of the forest structure. Since silvicultural measures are only effective in the long term, the negative effects of climate change should be minimized at an early stage but the rapid implementation of appropriate programs and strategies is required (BMLFUW 2009c). As the importance of the dangers of climate change on forest ecosystems by many with the forest management persons involved is not yet sufficiently recognized , particular attention should be paid to education , awareness raising and knowledge transfer.

4.1.7.2 Trend

0	In the Austrian part of the program area, the forest increases consistently. Wide-area considered clearings can be found in areas with low forest cover - in the valley and basins and in flat and hilly country. Here the urban centres and agriculture competes for the limited space. This concerns for example the Vienna Basin, the Northern Burgenland and Southern Styria. The main cause is the building pressure through settlement expansion, transport and infrastructure, to a lesser extent the intensification of agriculture. The quality, species richness and naturalness of forests changed to a small extent, with positive and negative effects are balanced. Especially in the study area are floodplain forests of special importance (Leitha, Danube, Raba). These forests need to be protected and developed.

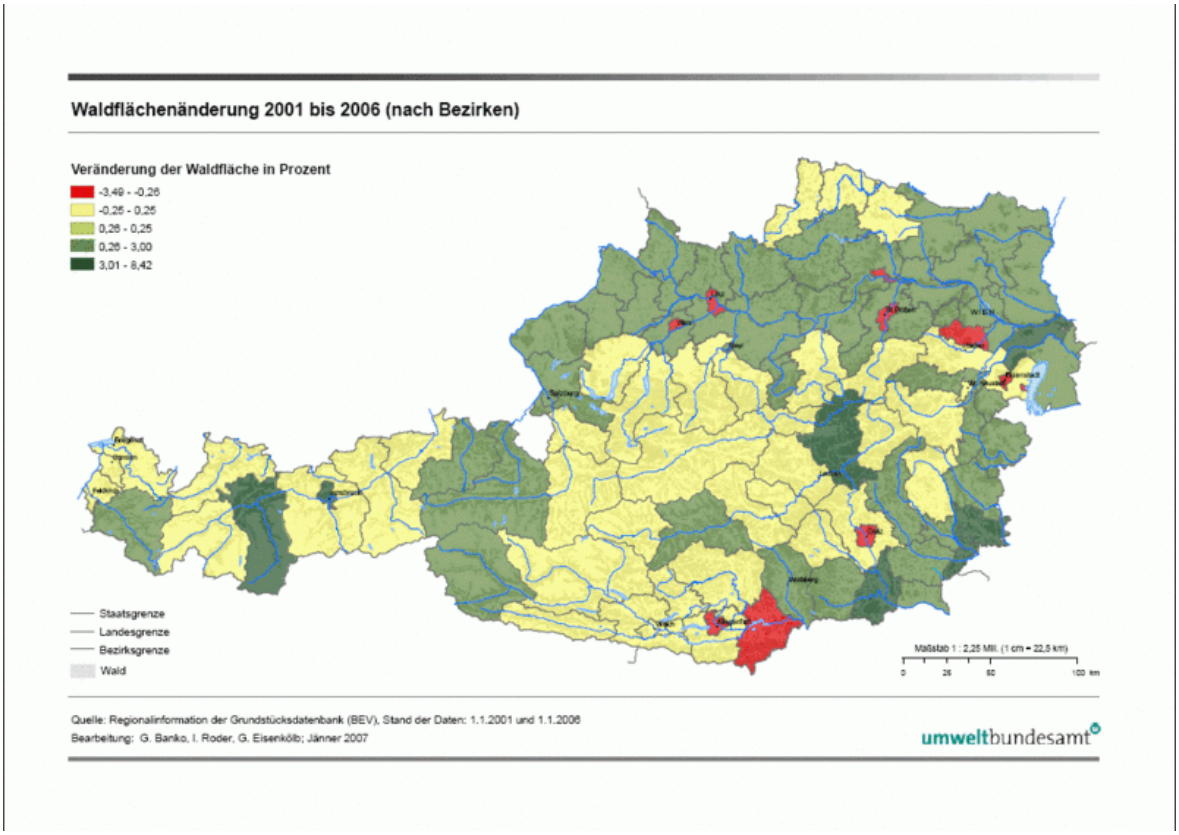


Figure 10: Forest area change in Austria 2001 to 2006. Source: Umweltbundesamt, 2007.

4.1.8 Condition and development of nature protection areas

4.1.8.1 Situation

Overall, Austria has more than 35,000 km² with regard to biodiversity particularly valuable cultural landscapes. Of these landscapes are 8,400 km² protected through national parks, nature reserves or Natura 2000 areas (Biodiversity and Conservation). Nearly 15,000 km² particularly valuable agricultural environment in the agricultural area, but only 2,500 km² of these areas can be found in one of the three categories of protected areas mentioned. Derived from the EU project NATREG in Styria, where more than 900 km² were defined as greenbelt proposals (Wieser et al. 2011), would be allocated to Austria, a share of about 18 % of the permanent settlement area (5,600 km²) to be held free for green infrastructure permanently from a building .

About 27 % of the Austrian areas are protected sites: 16 % are Natura 2000 sites, National parks or strong protected areas. 11% are less protected areas like nature preserves or protected landscapes. Because of its geographic situation and its cultural landscape which has grown over centuries, Lower Austria has a large variety of habitats and species worthy of protection. Following the Natura 2000 procedure, the competent authorities in Lower Austria selected 20 Natura 2000 sites under the Habitats Directive and 16 sites under the Birds Directive. Together these areas account for approx. 23% of Lower Austria's territory and were declared by ordinance to be "European Protection Areas". In Vienna there are 4 and in Burgenland 16 Natura 2000 sites. With additional

6 nature preserve areas, 8 protected landscapes and one national park the situation in Burgenland is very unique.

Figure 11: Natura 2000 areas in the programme area.

Anzahl	Bgld			Noe			Stmk			Wien			Gesamt		
Kat	Anzahl	Fläche (km²)	in %	Anzahl	Fläche (km²)	in %	Anzahl	Fläche (km²)	in %	Anzahl	Fläche (km²)	in %	Anzahl	Fläche (km²)	in %
Europa-schutzge-biete	13	1.026,8	25,9%	36	4.417,1	23,0%	41	2.765,9	16,9%	4	55,0	13,3%	191	8.264,8	20,7%
Landschafts schafts-schutzge-biete	8	685,7	17,3%	29	4.167,9	21,7%	38	5.436,9	33,1%	10	73,3	17,7%	247	10.363,8	25,9%
Naturparks	6	539,4	13,6%	23	554,8	2,9%	7	1.859,7	11,3%		-	0,0%	50	2.954,0	7,4%
Natur-schutzge-biete	25	5,2	0,1%	68	133,7	0,7%	130	1.193,8	7,3%	1	22,6	5,4%	454	1.355,3	3,4%
National-parks	1	90,6	2,3%	2	84,1	0,4%	1	110,2	0,7%	1	22,6	5,4%	9	307,5	0,8%
Sonstige Schutzge-biete*	6	0,6	0,0%	0	-	0,0%	0	-	0,0%	6	0,2	0,1%	42	0,8	0,0%
Natur-Landschafts schafts-schutzge-biete	4	506,3	12,8%	0	-	0,0%	0	-	0,0%	0	-	0,0%	4	506,3	1,3%
Geschützte Land-schaftsteile	1	0,2	0,0%	0	-	0,0%	167	13,8	0,1%	3	1,5	0,4%	337	15,5	0,0%
Biosphä-renpark		-	0,0%	1	957,0	5,0%		-	0,0%	1	99,0	23,9%	4	1.056,0	2,6%
Ramsar	3	55,1	1,4%		-	0,0%	4	15,4	0,1%	1	9,2	2,2%	12	79,7	0,2%

Table 11: Protected areas in Burgenland, Lower Austria, Styria and Vienna. Source, Umweltbundesamt, 2014.

*(außer Naturdenkmäler und geschützte Naturgebilde);

Please note: the figures must not be summed because the protected area categories overlap in terms of their spatial extension!

In Burgenland and in the three neighbouring counties in Hungary, many protected areas have been created in recent years. In Interreg successor European Territorial Cooperation (ETC AT- HU) was therefore established by the consortium nature parks on regional Burgenland GmbH , the project entitled " PaNaNet " to life, to connect these protected areas together to develop the natural tourist offer of the region together and to take advantage of synergies in public relations and marketing through increased cooperation. The RMB acts as the lead partner, which holds the overall coordination of the project.

The target areas of the project are four national parks (National Park Lake Neusiedl -Seewinkel , Fertő Hansag , Örség and Balaton Uplands National Park in Hungary), all six nature parks in Burgenland (Lake Neusiedl - Leitha Mountains, Rosalia Kogelberg , Landseer Berge , Geschriebenstein, Weinidylle and Raab) and 4 nature reserves in West Hungary (Sopron, Irottkő , Örség , Kerka) . The overall objective of PaNaNet project is to increase the acceptance of protected areas and awareness among the population about the importance of protected areas for quality of life and economy. By creating lasting networks of the Pannonian protected areas, they should be able to establish a „nature experience" as a distinctive offer in the area.

The loss of biodiversity within the EU could not be halted sufficiently in order to reach the goals established in 2010 (2010 goal). In Austria the preservation of the biodiversity is not secured satisfactory although various conservation and cultivation measures have been taken. This applies for the program area (PA) as well.

4.1.8.2 Trend

+	As mentioned in the OP the high ecological awareness in Austria and the increasing interest in Hungary will continue to play an important role for cross-border cooperation in the fields of **environment protection and renewable energy**. Know-how-transfer, exchange of good practices and institutional cooperation will be facilitated through existing networks in those topics. While Austria has more experience in the fields of environmental protection and renewable energy, Hungary has enormous agricultural potential. Both countries have experience in common nature management.

4.1.9 Status of hazard zone planning and impact on Number/area of regions threatened from natural hazards

4.1.9.1 Situation

In the Austrian Spatial Development Concept ÖREK 2011 (ÖROK 2011) is prompted to save space and to implement a land management. In order to control hazards and to reduce the potential damage the ÖREK recommends 2011, the free attitude of flood retention and flood runoff areas, and expanded the scope and legal recognition of the danger zone plans. Open and green spaces that provide high-quality ecosystem services are to be secured and kept free of spatial planning by creating separate use categories.

The instrument of the priority areas in spatial planning (e.g. regional planning, local development plan, land use plan) offers the possibility to reserve land for a particular use, such as for agricultural use, for flood protection, green infrastructure (network of diverse open space and other environmental structures, such as riparian forests, wetlands). Protection against natural hazards is taken into account in the spatial planning. In individual counties, there is a land dedication ban within the HQ100 flood plains (Styria, Lower Austria).

In a few counties spatial planning laws will be made clear in the dedication provisions on content of hazard zone maps reference (e.g. Steiermärkisches ROG, Tyrolean Regional Planning Act TROG ; LLG Nr.27/2006) . The legal consequences in terms of dedication prohibitions and restrictions in danger zones are often not clearly defined in planning legislation and are subject to considerable discretion in zoning practice (HABERSACK et al. , 2009 ÖROK 2005a , b).

The potentially vulnerable floodplains of HQ200 (200-year flood) in Austria include 3,955 km2 (HORA, Umweltbundesamt). Within these areas are more than 250,000 buildings, just fewer than 9% of the total building stock (Umweltbundesamt, 2012). Nearly 60% of these buildings are located within the zone of HQ30 (30-year flood).

Almost 900 km² of Austria are under imminent threat of torrents and avalanches (torrents account for 80% of the affected areas, on exposure to avalanches 20%). More than a third of this land is within the red zone (WLV 2012). Within the endangered by torrents and avalanches red zone are 70,000 buildings in the yellow zone are 160,000 buildings.

Priority areas for flood protection and other natural hazard events are set in the regional spatial order and must be kept free in the local spatial planning of buildings. This requires in particular the increased legal coupling of hazard zone planning and zoning by the legal consequences of the contents of hazard zone maps for dedication decisions in the planning legislation (BMLFUW 2012b , ÖROK 2011). Regard to the natural hazards the involvement of regional planning is necessary because in the 2011 amendment to the water Act (Federal Law Gazette I No. 14/ 2011) the creation of danger zone planning is required for areas with potential significant flood risk , unless there is adequate flood protection exists and there are no equivalent plans are available.

4.1.9.2 Trend

+	Due to climate change there is an increased space requirement for active and passive flood and natural protection. When creating danger zone plans and designation of flood areas climate change but is *not* yet considered (BMVIT & BMLFUW 2009). Proposed actions and recommendations for a space-based natural hazard management (BMLFUW 2004 BMVIT & BMLFUW 2009 ÖROK 2004) are to be implemented. However, natural hazard planning is already on a high level. There are already foreseen some measures to improve the situation.

4.1.10 Impact of waste volume

4.1.10.1 Situation

The Austrian resource consumption of 114 million tonnes in 1960 to 181 million tonnes in 2010 has risen. This corresponds in 2010 a resource consumption of 22 tons per person per year or 59

kg per person and day. Overall, the Austrian resource consumption in the last 50 years has increased by a factor of 1.6. At the same time, however, the resource efficiency could be improved about 160%. This was in 2010 with a ton of primary raw materials 2.6 times the economic performance achieved in 1960.

One indicator related to resource efficiency presents the total amount of waste generated and the following recycling or treatment technologies.

In the nine years from 1999 to 2008, total waste arising increased from 48.6 million tonnes to 56.3 million tonnes (16%) in Austria. Almost two thirds of the total waste generation in Austria refers from construction activities: excavation material (43,4 %), construction waste (12,7 %) and wood waste (8,3 %).

The most important drivers for waste generation are economic and social drivers. In Figure 8 the growth of total waste generation and of household waste arising in the period 1999 to 2008 compared to real GDP and population growth. Household waste growth seems to be stronger coupled to economic growth rather than total waste growth is. Household waste generation increases much faster than the population. It can be concluded that the main driving force for household waste arising is the affluence and consumption attitude of the population. Also changing lifestyles, such as the trend towards single households, can be identified as important social drivers for household waste generation.

While the total amount of household waste is constantly rising, the amount of landfilled waste has been decreasing by 90 % due to increased separate collection and material and thermal recovery of the waste streams. The separate collection, recycling and treatment of organic, paper and plastic waste together with the ban of landfilling reactive waste lead to a major decrease in waste management related greenhouse gas emissions in the reference time period (see also Figure 8).

The selected collection of hazardous waste, waste of electrical and electronic equipment (WEEE), organic waste and recyclables has risen around 24 % in the years from 2005 to 2010.

The main drivers for the selection of waste treatment paths were policy drivers such as the ordinances on packaging waste and on biodegradable waste in combination with extensive information and a public awareness programme. Since 2004, the landfill ordinance requires the pretreatment of reactive waste prior to landfilling. Therefore, household waste is incinerated or pretreated in a mechanical biological treatment plant in order to reduce its total organic content. Because of the pre-treatment, emissions of greenhouse gases were reduced considerably (see also Figure 8).

Since the early 1990s the Vienna government has financed or co-financed several hundred studies and pilot projects on waste prevention and is considered as a leading model region for waste prevention and resource recovery in the urban area.

Despite increasing resource efficiency and waste prevention measures on production and household sector there are potentials for improvement, especially in construction waste recycling, prevention of food waste, digestion of biogenous wastes and in the recovery of phosphorous and rare metals from a variety of waste streams.

In order to further increase resource efficiency and achieve the decoupling of material use from economic performance, resource saving measures need to be continued and improved. As regards recycling, it is important to see to the efficient removal of pollutants, so as to ensure that pollutants are removed from the material cycle.

In order to further promote the prevention and recovery of waste, the Federal Ministry of Agriculture, Forestry, Environment and Water Management introduced a waste prevention and recycling strategy in 2006. The implementation projects include:

- the introduction of a building certification and building material documentation scheme (building pass);
- the improvement of a quality assurance scheme for recycled building materials;
- green public purchasing regulations;
- standards for the use of waste as industrial fuel limiting pollutant inputs;
- market penetration of ecoservices;
- Identification of the original products causing the pollutants in household waste.

4.1.10.2 Trend

0	In comparison to the studies of the last Federal Waste Management Plan 2006, the volume of waste identified for the year 2009 has declined by about 500.000 t and amounts to approximately 53.54 million tons, of which approximately 23.47 million tonnes accounting for excavated materials. The waste from households and similar establishments, however, **continued to rise** - to around 3.9 million tonnes in 2009. The reasons for the increase in the volume are in the increase in the resident population, the increase of households (single households), and the increased consumption of ready meals and in the increased use of disposable packaging. Around 2.2 million tonnes of waste from households and similar establishments could be recorded on separate waste collections. These are around 430,000 tons more than in 2004 (BMLFUW 2011). Lower Austria, Burgenland and Vienna develop provincial Waste Management Plans on a regular basis. The total waste generation in the programme area raised in the last decade. The generated waste per capita lies 31 % below the Austrian average in Burgenland, where

	in e.g. Lower Austria and Vienna it lies above (12 and 14 %). While the total amount of household waste is constantly rising, the amount of landfilled waste has been decreasing by 90 % due to increased separate collection and material and thermal recovery of the waste streams. The separate collection, recycling and treatment of organic, paper and plastic waste together with the ban of landfilling reactive waste lead to a major decrease in waste management related greenhouse gas emissions in the reference time period (see also Figure). In Austria for several years a number of individual projects will be implemented in different areas (for example, disclosure of food to social service agencies, information for consumers about shopping and efficient food consumption). However, further efforts are necessary to achieve a sustainable reduction of food waste (BIO INTELLIGENCE SERVICE et al. , 2011).

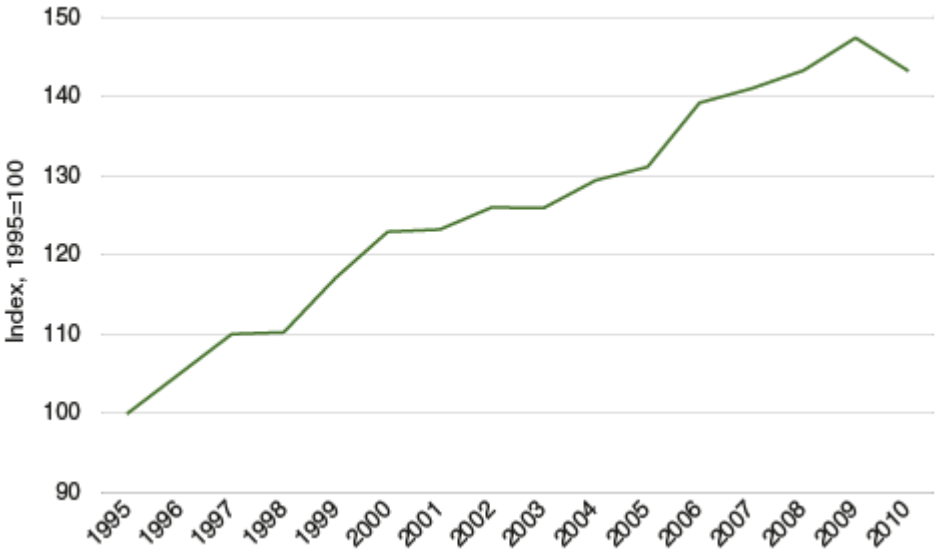


Figure 12: Houshold waste in Austria from 1995 to 2011. Source: Umweltbundesamt, Statistik Austria, 2014.

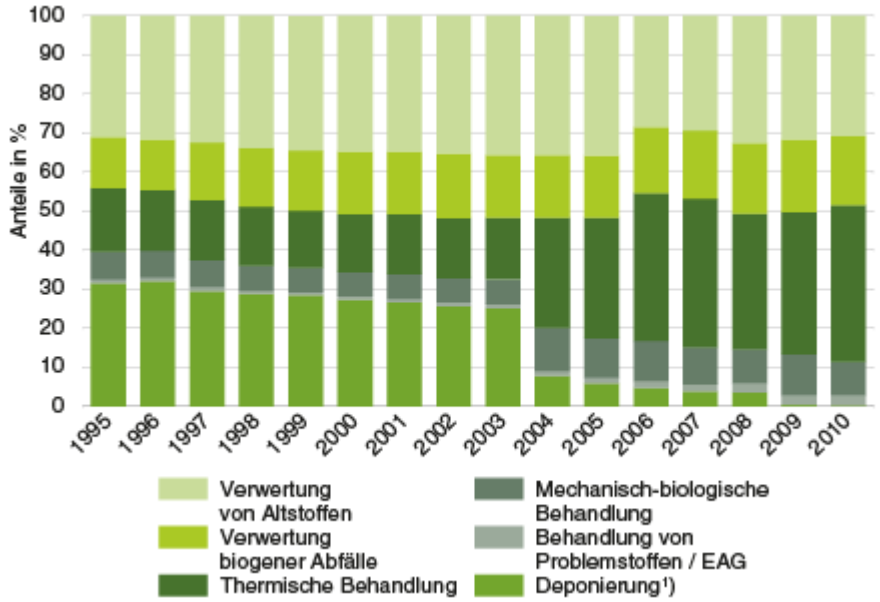


Figure 13: Disposal of household waste. Source: Umweltbundesamt, Statistik Austria, 2014.

4.1.11 Use of renewable and fossile raw materials

4.1.11.1 Situation

The status of resource consumption, waste development and recovery and the use of renewable

The Austrian DMC (domestic material consumption) increased from 114 million tons to 197 million tons from 1960 to 2008. In 2008, 24 tons per capita has been consumed in comparison to 16 t average within the European Union (EU-27). Non-metal minerals like sand or gravel (62 %), followed by biomass (22 %), fossil fuels (12 %) and metals (4 %) had the largest share on the materials consumed. At the same time, however, the resource efficiency could be improved about 160%. This was in 2010 with a ton of primary raw materials 2.6 times economic performance can be achieved as in 1960.

Total material imports increased six times to 88 million tonnes. The increased material consumption caused by production and private consumption presents one key driver for the increased waste generation. The development and use of complex products lead to a heavy dependency on fossil fuels and scarce resources such as rare earths.

Resource consumption in Austria raised about factor 1,7 in the last 50 years, where resource efficiency improved about factor 2,5 and performs better than the European resource efficiency average. This has been possible with a higher raise in GDP (+325 %) than in resource efficiency (+73 %). However, the remaining demand on natural resources raises the question, how economy not depending on raising resource consumption could look like.

Ambitious aim of the Resource Efficiency Action Plan is the completely decoupling of the economic development from resource consumption and its resulting environmental impacts. As a re-

quirement, resource efficiency in Austria need to be raised upon 50 % by the year 2020 for the decrease of the total resource input.

4.1.11.2 Trend

-	From 2007 to 2010, the use of materials in Austria has decreased, but at the same time the economy stagnated. In continuation of the existing long-term trends in domestic material consumption from 2008 to 2020 will increase by 8%, although the resource efficiency increases to 15% (BMLFUW & BMWFJ 2011). The in Federal Waste Management Plan (BMLFUW 2011) conducted assessment of future development comes to the conclusion that by 2016 it is expected to increase the amount of waste. By participating in separate collection value -rich fractions, although a significant portion of the waste can be recycled, yet resource management, waste prevention and recycling are to continue to accelerate. There is great potential for the prevention of waste in the construction industry involve the techniques of prolonging life building. The recycling of construction waste can be increased by the use of quality-assured recycled building materials with low pollutant content further. The prevention of food waste contributes significantly to the conservation of resources, since foods are extremely resource - and energy-intensive to produce and distribute. The treatment of food waste is energy - and cost-intensive. The potential for prevention of food waste is considerable. Nevertheless it must be assumed that the consumption of natural resources increases, once the economy recovers. This will concern land use, as well as food and inorganic resources (oil, gas, earth).

4.1.12 Use of renewable energy and its rate within the energy mix

4.1.12.1 Situation

The climate and energy package of the European Union as well as the Austrian energy strategy and the Climate Act 2011 specify that the share of renewable energy sources should be raised to 34% of gross final energy consumption in 2020, that final energy consumption should be stabilised at the level of 2005 (1,100 PJ) and that greenhouse gas emissions in the non-emission trading sector should be reduced by 16% below 2005 levels.

The share of renewable energy sources in 2011 was a total of 31.0%, which is still well below the target of 34%. Therefore, the application of renewable energy sources (currently 357.5 PJ) must be increased by 2020 even with constant energy consumption. At the same time we should pay greater attention to the conservation of the natural habitat and biodiversity.

The last few years have seen an increase in both the relative and the absolute contribution of renewable energy sources to national consumption.

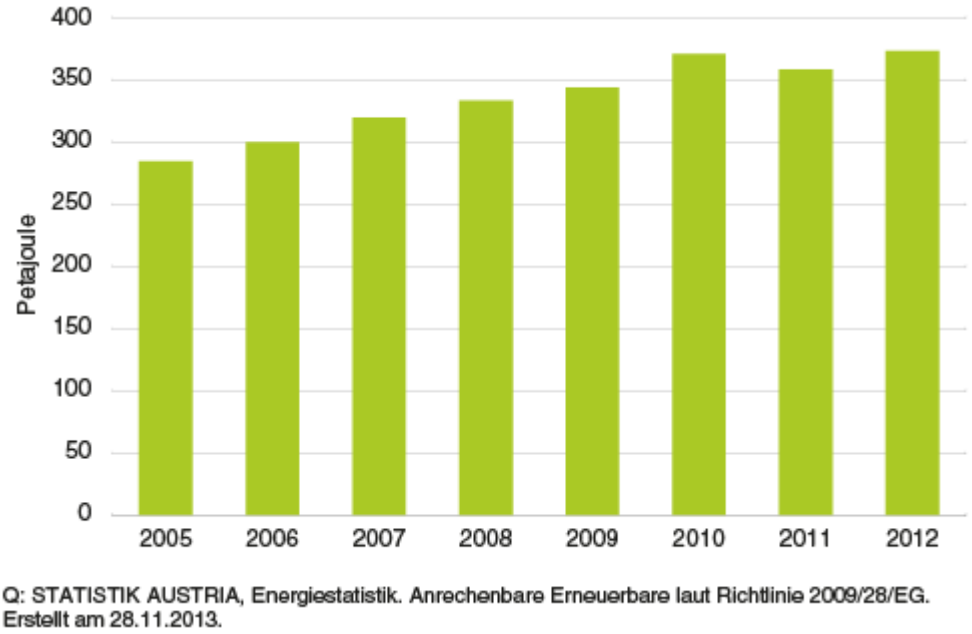


Figure 14: Absolute development of the production of renewable energy. Source: Statistik Austria, 2014.

To decouple economic growth from energy consumption, it is absolutely necessary to avoid (or reduce) losses and to increase efficiency by adopting a set of suitable measures. The steps which are necessary to achieve include legal measures, an increase in the price of fossil energy sources, the promotion of renewable energy sources and targeted support for energy efficiency measures.

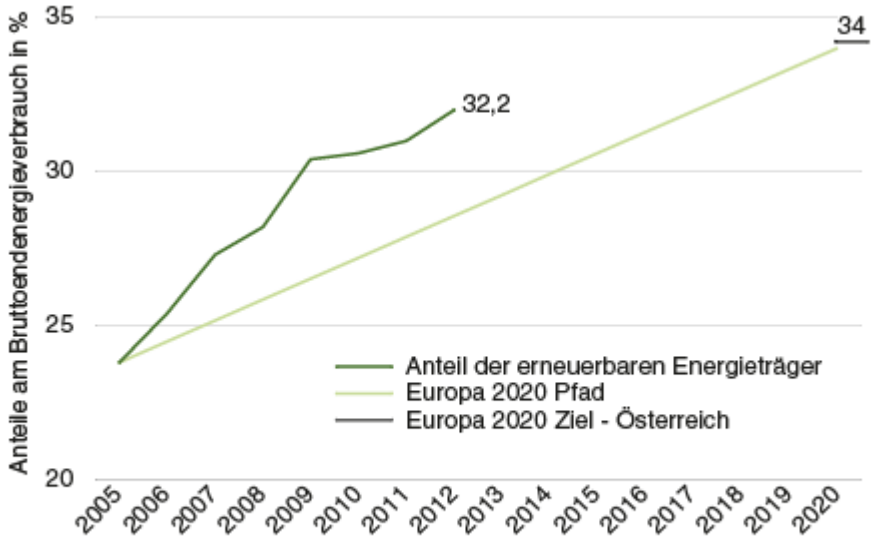
The new Energy Efficiency Directive (Directive 2012/27/EG) was set 2012 in force on 4th December. The Directive contains indicative targets for Member States, which may be related to the consumption of primary energy, final energy consumption or final energy savings or energy intensity. The Directive also introduces the obligation to save 1.5% of the energy sold to end-customers each year 2014-2020. The Energy Efficiency Directive is to 5 June 2014 transposed by Member States into national law. A draft law on national implementation was given to review at the end of 2012.

Renewable Energy has become a main focus of Austrian climate policy within the last years. If measured on the entire end use consumption, Austria (in 2011) provided for nearly 30% of its total energy needs with renewable energy sources. It ranks high in renewable energy production mainly due to its high share in hydropower, wind power and biomass and was among the four EU countries with the highest share of energy from renewable sources in gross final energy consumption. By sector, this means 65% renewable electricity (mainly out of water and wind power), 46% renewable heat (mainly from biomass and some heat pumps, solar thermal and geothermal units), but only 7% of renewable fuels at the transport sector.

Burgenland in the electricity sector is **energy self-sufficient within 2013**; it is the aim of the federal state to get a 55% share of total energy by renewables by 2020 and total autonomy by 2050. Lower Austria shall become energy self-sufficient in the sector of electricity by 2015 and a 50% share of renewables regarding total energy by 2020 (MECCA, 2013).

4.1.12.2 Trend

+



Q: STATISTIK AUSTRIA, Energiestatistik. Anrechenbare Emeuerbare laut Richtlinie 2009/28/EG. Erstellt am 28.11.2013.

If the major part of the proposed package of measures is implemented, the above-mentioned targets (1,100 PJ; 34% renewable energy as well as -16% GHG emissions) can be achieved or surpassed.

Figure 15: Share of renewable energy on gross final energy consumption.

4.1.13 Status of energy consumption

4.1.13.1 Situation

The gross inland consumption has increased in Austria since 1990 by 36% and amounted 1,427 PJ in 2011 (Statistics Austria 2012a). 72% of the gross inland consumption was applied by fossil fuels in 2011, 26% by renewable and 2% by electricity imports. Between 2005 and 2011 the gross domestic consumption has decreased by 2%. For fossil fuels, a reduction of 7% was recorded. The use of renewable energy sources has increased by 28% over this period (Statistics Austria 2012a).

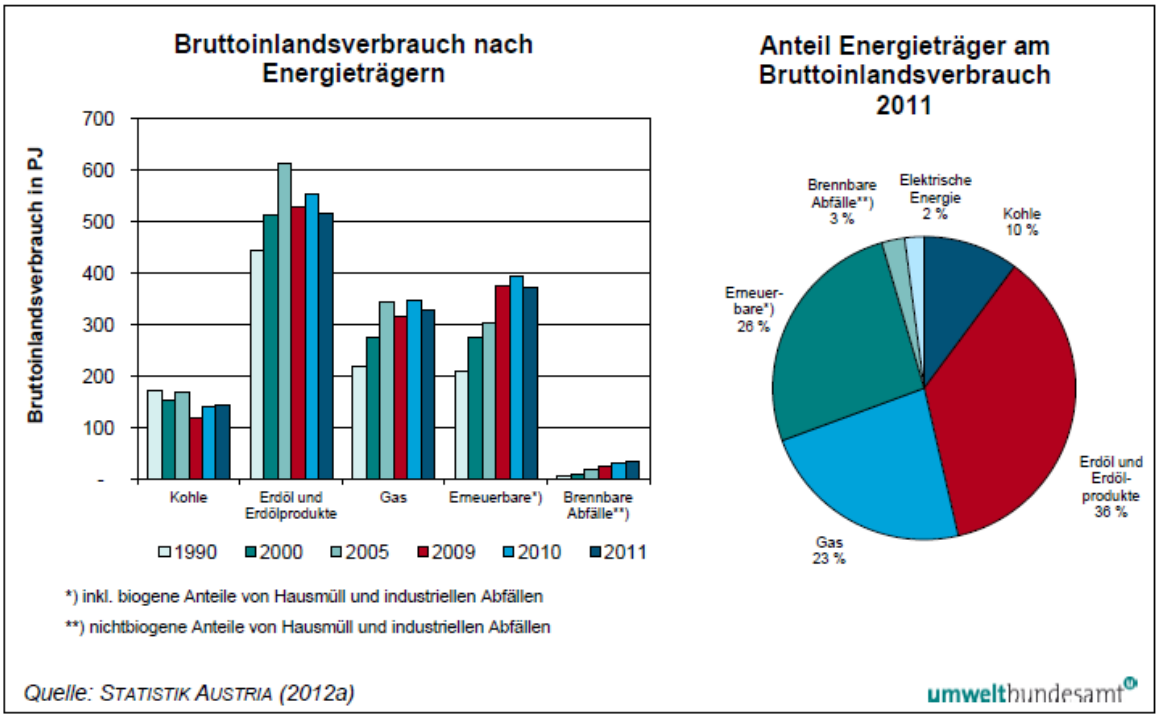


Figure 16: Energy consumption in Austria 1990-2011. Source: Statistik Austria

Between 2005 and 2011, final energy consumption decreased by 2.6%. Reductions occurred in the sectors of households (- 7.4%), transport (- 5.4%) and agriculture (- 0.9%), growth in industry (1.7%) and services (5.7%; STATISTIK AUSTRIA 2012a).

The transport sector had in 2011 with 33% the largest share of final energy consumption. This comes to 91% from fossil products, 6% from renewable and 3% from electricity. The 29% of the industry come to 50% from fossil products to 31% from electricity, 16% from renewable and 3% from heat. The 24% of households to 39% originate from fossil products, 27% from renewable sources to 23% of electricity and 10% of heat. The 12% of business services originate from 35% electricity, 33% from fossil products, 27% from thermal and 5% from renewables. In the agricultural sector accounted for 2%.

The final energy consumption of electrical energy increased between 1990 and 2005 by 36% from 152 to 208 PJ. From 2005 to 2011, there was a further increase to 218 PJ. Between 1990 and 2011 there was the strongest growth in the manufacturing sector (49%) and households (46%) (STATISTIK AUSTIRA 2012a). In 2011, of the final energy consumption was covered by 38.2% of oil products, 20.0% of electrical energy, 17.0% with gas and 14.6% by renewable energy sources.

To decouple economic growth from energy consumption, it is absolutely necessary to avoid (or reduce) losses and to increase efficiency by adopting a set of suitable measures. The steps which are necessary to achieve this include legal measures, an increase in the price of fossil energy sources, the promotion of renewable energy sources and targeted support for energy efficiency measures.

To Austria, the use of nuclear energy is neither a sustainable form of energy supply nor a workable option for the fight against climate change and for this reason a long-term vision (energy autarky) in addition to the above-mentioned objectives and measures for 2020 are needed.

Austria sets a strong political and economic focus on cutting down energy consumption and increase energy efficiency in the sectors industry, mobility and housing. The rising need for energy and heavy dependency on energy imports.

An expansion of hydroelectric power generation is not entirely compatible with the ecological targets and should take into account the requirements of the Water Framework Directive.

4.1.13.2 Trend

Primary energy consumption is steadily increasing. Only achievable if proposed measures are implemented and evaluated on a broad and consequent basis.

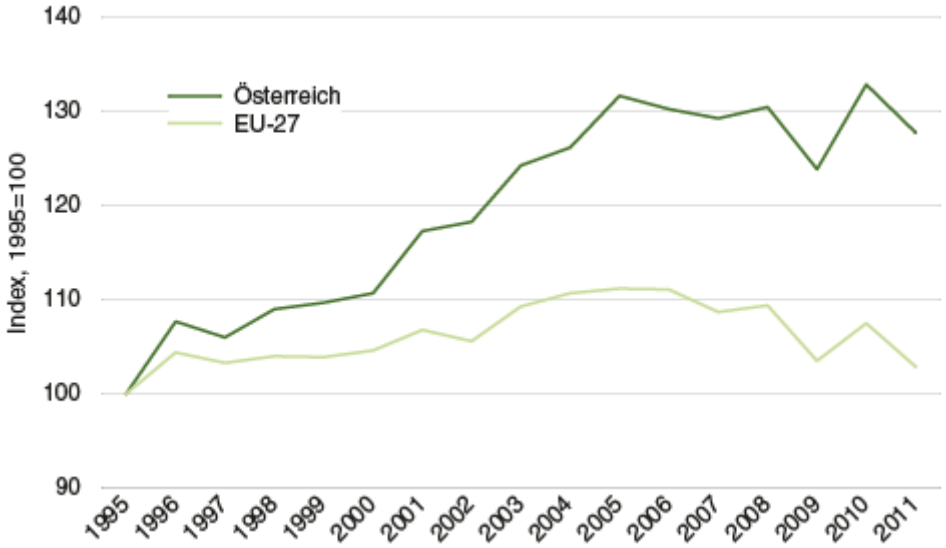


Figure 17: Energy consumption in Austria compared with the EC, 1995-2011. Source: Statistik Austria, Eurostat, 2013.

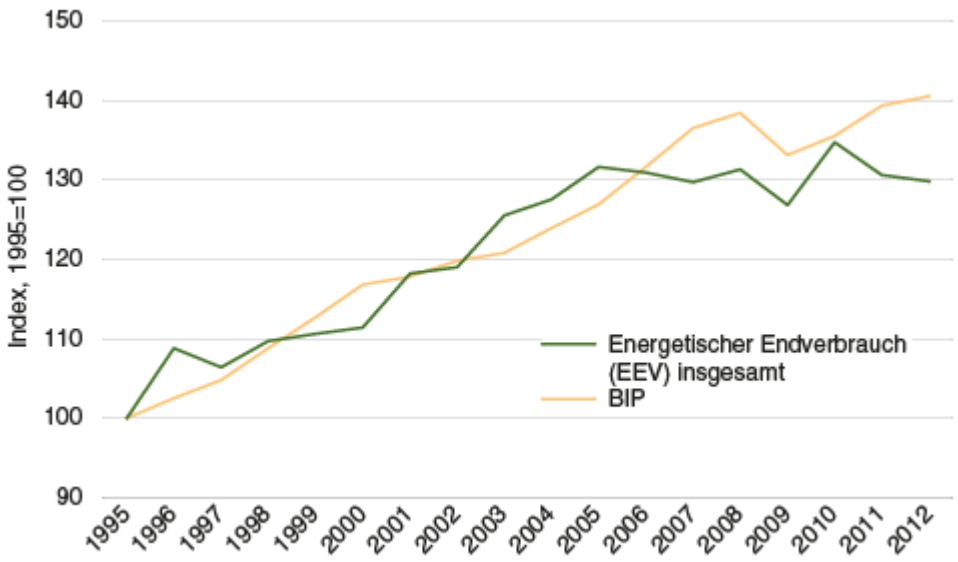


Figure 18: Energy consumption in Austria compared with the BIP. Source: Statistik Austria, 2013.

0 -	The figures show the dependence of the energy consumption and the economic situation is clearly visible. The general trend of rapidly rising energy consumption seems to have halted since 2005.Final energy consumption in 2011 was 11 PJ below target for the year 2020, before a new record was in 2010 with 1,134 PJ reached. The decrease from 2010 to 2011 is primarily due to lower energy consumption for households and services due to a warmer winter. For a secure compliance 1,100 PJ target, it is necessary to reduce the power consumption continuously. In order to prevent the occurrence of rebound effects on efficiency measures, energy prices and their share of tax is an essential tool. However a slight increase of energy consumption is to be expected, although the efficiency of energy consumption rises.

4.1.14 Impacts on cultural heritage

4.1.14.1 Situation

Cultural heritage is defined as a complex of tangible and intangible cultural heritage, such as architecture (churches, castles, monasteries, etc.), as well as folk culture, traditions and landscape obtained over a long period. Areas with the greatest potential and attractiveness for tourism sites are inscribed in the UNESCO World Heritage Sites.

The diversity of cultural heritage is unique in the border region. It consists of tangible sites such as the UNESCO World Heritage Sites - Palace and Gardens of Schönbrunn, Historic Centre of Vienna, Lake Neusiedl Cultural heritage and Landscape, Pannonhalma monastery, Fertő and Eisenstadt castle, the National Park Neusiedlersee/Fertő etc. But there are also examples of shared heritage such as viticulture or intangible traditions such as the pannonian culture, crafts and music or the Croatian minority with its strongholds at both sides of the border.

The region's natural and cultural heritage is on the one hand the basis for a high quality of living conditions and on the other hand basis for economic and social development not least in the rural parts of the area. Protection, quality saving and further development are the main issues for a common cross border strategy. Using the experiences with green technologies the region can contribute to the national and European goals improving environmental protection.

The result sought is a common understanding and a better coordination of measures in the field of sustainable tourism. Moreover, this specific objective aims to enhance sustainability of measures in the field of preservation, reconstruction, development and utilization of cultural/natural heritage with tangible/intangible character (MECCA, 2013).

4.1.14.2 Trend

0	The development of the cultural heritage is well advanced on the Austrian side. Apart from the hot spots of the culture (Vienna, Carnuntum, Seefestspiele, Rust, Graz, etc.), there are other initiatives such as "Dorfereneuerung" which lead to a positive development. Driving force is tourism. Many communities are trying to present themselves well and that includes the preservation of the cultural heritage. This positive trend will continue in the same degree, which is why, despite the assumed positive aspects for the zero option, no change of the trend is assumed.

4.1.15 Status of mobility and its impact on environment

4.1.15.1 Situation

To achieve the environmental targets, it is necessary to create an appropriate setting for a trend reversal so that it will become possible to pave the way towards a sustainable transport system with reduced emissions. The structural reforms needed to achieve this have to be designed in such a way that they are compatible economically while also taking social implications into account. Fiscal measures are effective in the short term and can be implemented quickly, supporting low-emission propulsion and fuel technologies and public transport.

To achieve a sustainable reduction of traffic volumes in the long term, binding environmental policy targets have to be integrated into transport and spatial planning, and infrastructure development as well as cost structures in transport have to be designed in such a way that the targets can be achieved (UMWELTBUNDESAMT, 2013).

In recent years, there has been an increase in range of cross-border public transport services, although only in some parts of the region. The frequency of connections and running times indicate positive values among major towns and between some smaller municipalities in Burgenland and Bratislava. It is necessary to note that the accessibility of the large cities by public transport is

competitive to individual transport when comparing travel times. In Austria an implementation plan on fostering electro-mobility has been developed. By 2020, the target of 250.000 electric vehicles should be reached. Electro-mobility along with higher energy efficiency and intensified use of renewable energy sources should contribute towards environmental and climate protection. The master plan on cycling (Masterplan Radfahren, BMLFUW 2011) describes supporting measures for bicycle traffic in Austria and cycling should reach a total share of 10 % of traffic in Austria.

The situation of mobility and accessibility has already been described in the Regional Analysis and the SWOT analysis.

Of all sectors, the transport sector has seen the strongest increase in green-house gas emissions since 1990, although a reversal in the overall trend has been observed since 2005. This reversal has been brought about by the use of biofuels, an increase in the efficiency of single vehicles and higher energy prices and the economic crises. As regards air pollution, particle and nitrogen oxide emissions continue to cause problems, with transport being by far the largest contributor of nitrogen oxide emissions.

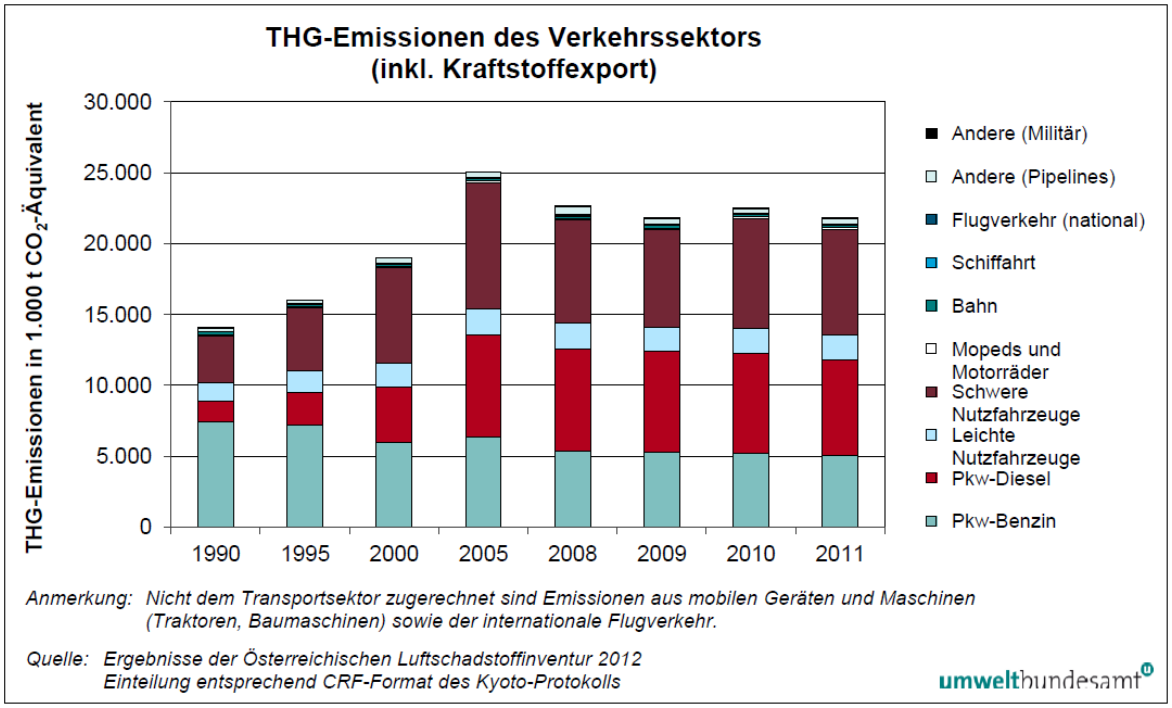


Figure 19: GHG-Emissions caused by transit, 1990-2011. Source: Umweltbundesamt, 2013

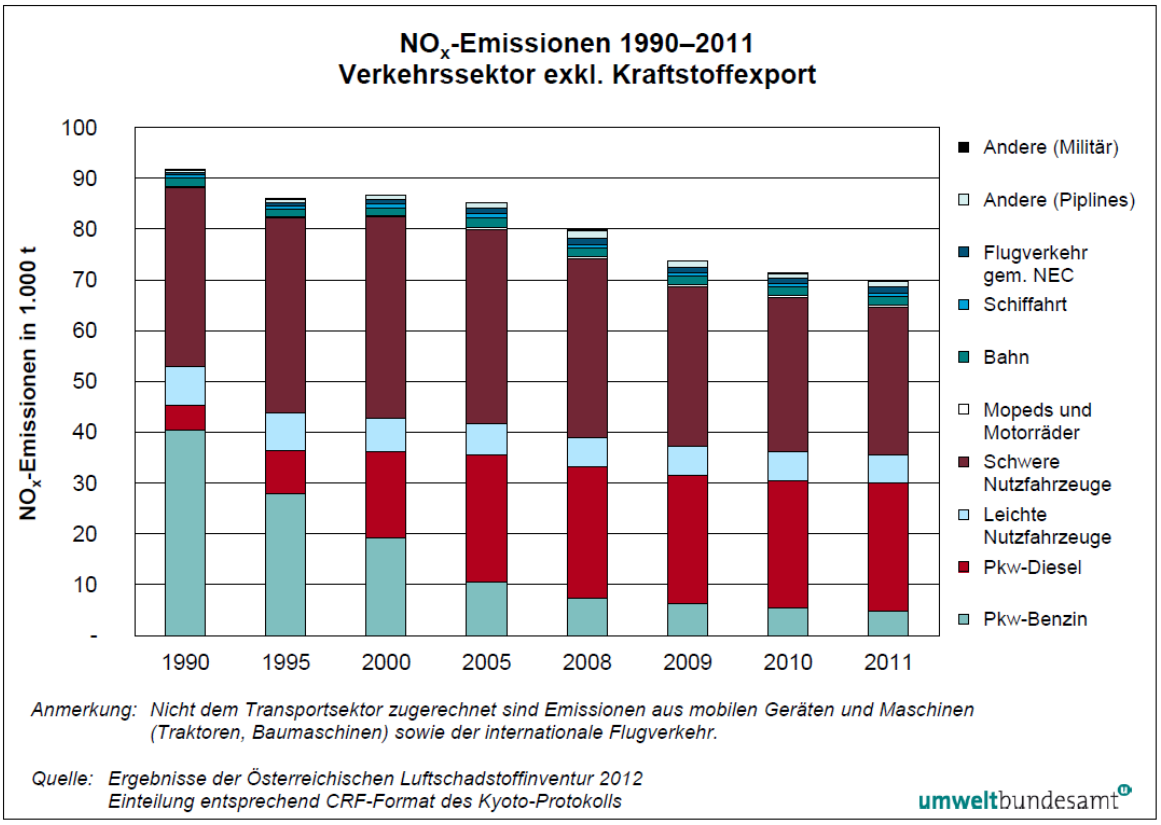


Figure 20: NO_X Emissions caused by transit, 1990-2011. Source: Umweltbundesamt, 2013.

4.1.15.2 Trend

-	Although the environmental impacts generated by the traffic, in almost all statistics are declining, the absolute load is still very high. Due to the positive news is also the danger of getting used to this high level of stress. It is unlikely, and certainly not in the event of an economic upswing to reduce this high level.

4.1.16 Quality of infrastructure for environmental friendly mobility

4.1.16.1 Situation

In the last years several improvements to the rail system upgraded routes of regional and interregional importance. To improve the accessibility of Eisenstadt by rail, the line Neusiedl- Wulkaprodersdorf completed an electrification project in 2009. To improve the north-south-axis, electrification and modernization of the railway line between Sopron, Szombathely and Szentgotthárd has been finished, bringing the mid-part of Western Transdanubia closer to the agglomeration of Wien.

Around the Neusiedler See/Fertő tó and in other protected or sensitive areas, the concept of integrated transport rail-bus-bike facilitates accessibility to the region via sustainable transport.

EuRegio trains and tickets have become a great success in the last years, connecting several towns across the borders. While in Austria several regional railways were closed in the last years, leaving especially large parts of the Mittelburgenland and Südburgenland with no rail link, Hungary still has a dense railway network. Most of the lines in Western Transdanubia are now operated by GYSEV and were upgraded in the last years.

In Austria a bus network of variable quality and micro systems (e.g. municipal busses) supplement the rail network. In Hungary nearly every community is accessible by public buses. Beside the main links, public transport is still not able to compete with individual transit when it comes to travel times.

Several actions are planned to improve the connectivity by public transport (MECCA, 2013).

The establishment of a bicycle network and building cross-border connection points increases the tourist attractiveness of the region. The inter-regional cycling network has been improved over the last decade. The network on the Hungarian side still needs to be improved and important Cross- border links between the two sides of the border are also missing. Further efforts have to be dedicated to organise common services and marketing of this network (MECCA, 2013).

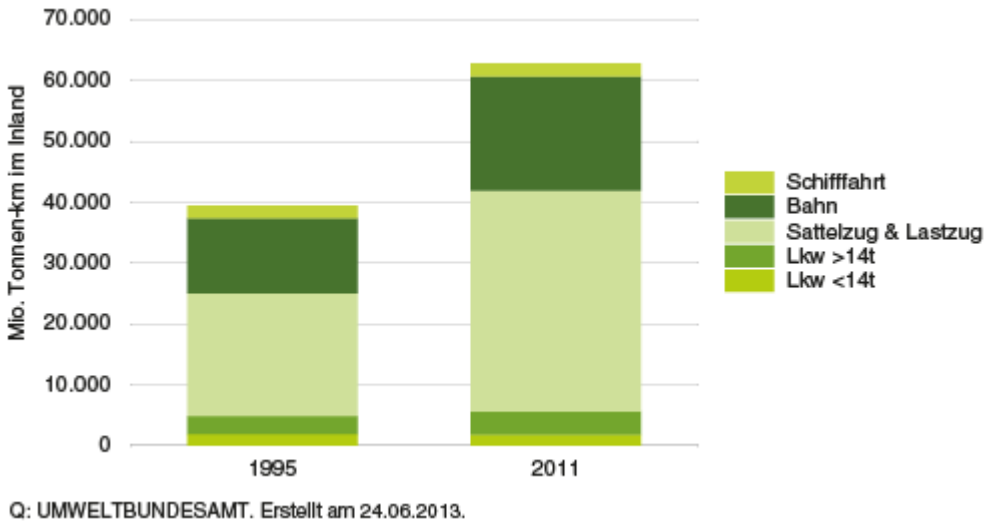


Figure 21: Modal split for freight transport systems 1995 and 2011. Source: Statistik Austria, 2014.

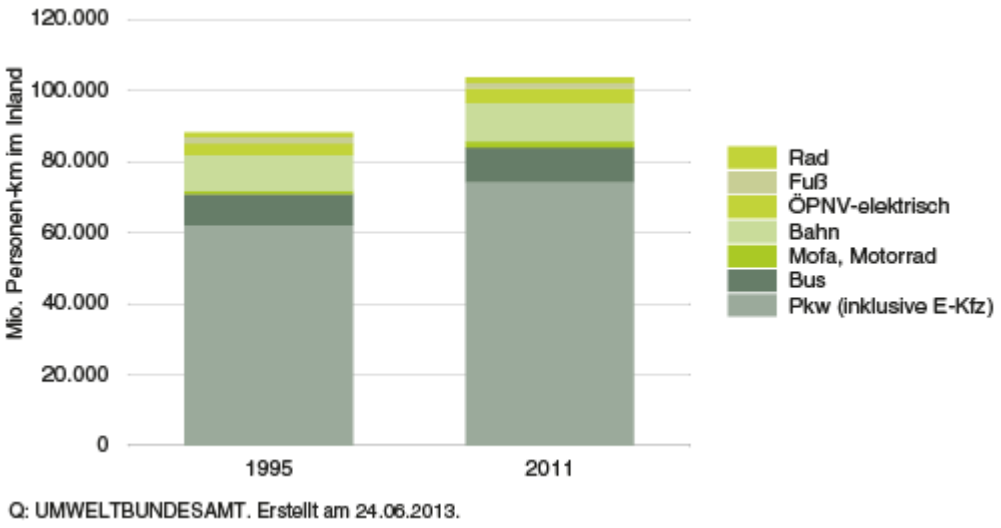


Figure 22: Modal split for passenger transport, 1995 and 2011. Source: Statistik Austria, 2013.

4.1.16.2 Trend

+	Mobility management on all levels (region, communities, and companies) has become a focus of transport policy in Austria within the last years. The Mobilitätszentrale Burgenland was one of the pioneers in Austria in that field, dealing with multimodal transport issues. Lighthouse projects like GREMO Pannonia were essential to foster sustainable transportation across the borders. One of the achievements of this project was the founding of the first mobility centre in Hungary, located in Sopron. However, as can be seen in the figure above, since 1995, the passenger car was the only category that has increased significantly. Therefore, many efforts should be made to develop the modal split further in the future.

4.2 Status Quo and Trend without Implementing the Programme – Hungary

4.2.1 Increase of land consumption, sealing

4.2.1.1 Status

In Hungary there is no up-to-date recording of sealing, we only can discursively forecast the rate of sealing from the quantity and rate of non-agricultural land. The difference cannot be large as the reason for the change of status is usually the will to use the land for - at least partly - constructional reasons. Thus the land, even if not 100 % sealed, will lose its ecological features and functions.

The rate of non-agricultural land in the West-Pannonian region is 20,72 %, almost the national average. However, the rate differs greatly among the 3 counties: the lowest rate we see in Vas county with 13,8 %, while in Zala the rate is 25,49 %.

In the previous decades quantity of non-agricultural lands constantly grew, though at a slowing speed. In 2012 the growth was the lowest in the past decade, only 1301 ha in the country.

4.2.1.2 Trend

--	According to the previously described status quo, the trend from environmental aspect is basically negative, though showing a slowdown. However, the planned and presently implemented road constructions, industrial developments forecast a speeding trend in the following years. An eventual economic boom will definitely contribute to a speed-up.

4.2.2 Impact on soil quality

4.2.2.1 Status

Predominant type of soil in the West-Transdanubian Region is brown earth, with larger areas of river terrace soil in the Hanság. In small areas we find grassland, meadow and skeletal soils as well as chernozems. Agrochemical and heavy metal loading of the soil is high in Vas County and in Győr-Mosom-Sopron around Mosonmagyaróvár, other areas show medium rates. Soil erosion rarely occurs in Vas and Győr-Moson-Sopron counties, but means a great problem in Zala, where in some places 70 % of tilth is devastated by erosion. 50 % of the region's area is involved in agricultural use, with a higher rate in the north, having better soil qualities.

Figure 23 shows organic matter stock of soil in West-Pannonia. The darker the colour is the more organic matter the soil contains.

Figure 23: Organic matter stock of soil in West-Pannonia.

Organic farming is very sparsely spread in the region ad in Hungary, though it may contribute greatly to conserving, moreover improving soil quality. Only 2,4 % of agricultural land is used for organic or ecofarming, the tendency showing waves of increases and decreases in time. Comparing to neighbour countries and the EU, Hungary and the West-Pannonian region is lagging way behind the 5,5 % EU average, and especially Austria's 18,4 %.

There is no indication of harsh negative processes concerning soil quality – however, there are factors that constantly worsen soil quality. Agriculture, especially use of fertilizers may cause acidification of soil and nitrification of ground water. Deficiencies of waste water management - 22,32 % of the region's households are not connected to the sewage system and often desiccate waste water in soil -, old in-ground fossile fuel containers, some of the old waste disposal sites, reckless industrial activities also continuously deteriorate soil quality.

Nitrification is a threat for both soil and ground water quality, as large areas of West-Pannonia are nitrate sensitive, as Figure 24 depicts[3].

3

http://www.kolcsonosmegfeleltetes.hu/K%C3%B6lcs%C3%B6n%C3%B6sMegfeleltet%C3%A9s/T%C3%A9rk%C3%A9pek/T%C3%A9rk%C3%A9pek.aspx

Figure 24: Nitrate sensitive areas in West-Hungary

4.2.2.2 Trend

-	Agriculture (especially use of fertilizers), lack of waste water management, old in-ground fossile fuel containers, waste disposal sites, reckless industrial activities continuously deteriorate soil quality. Small proportion of bio farming cannot yet eliminate negative impacts coming from other sources.

4.2.3 Impact on water quality

4.2.3.1 Status

The region's most important surface watercourse is the Danube, arriving to Hungary from Austria with III. class water quality (acceptable, on a scale of I –V). Water quality, both qualitatively and quantitatively, is negatively influenced by the Gabcíkovo hydroelectric power plant and the Cúnovo dam. These have a negative impact on Hungary's largest drinking water reserve under the Szigetköz, threatening he drinking water supply of millions of habitants. The situation needs a solution based on international agreements.

Further rivers of the region are Raba and Mura, being the two least regulated, most natural rivers of Hungary – though it does not mean a very good water quality: Raba e. g. arrives from Austria with IV. rate, and reaches III. class only in Győr-Moson-Sopron. River Zala collects surface water from 50 % of the catchment basin of lake Balaton, and provides most of the lake's water. Howev-

er, water quality is of Zala is not satisfactory, due to high phosphoric concentration. (Most of it's side watercourses are also polluted.)

Smaller rivers of the region are Marcal, Répce, Ikva, Lapincs, Gyöngyös – all of middle quality. Very poor conditions we see at sections of rivers Ikva, Rohonci, Sorok-Perint, and the Principális-channel.

Figure 25 shows the quality of surface watercourses of the region, red colour referring to very poor quality.

Figure 25: Quality of surface watercourses of the West-Pannonian region

Hungary's two largest lakes, Balaton and Fertő belong to the region, though only with part of their whole area. Both lakes are considered to have high importance from environmental-ecological aspects, providing wild habitats, contributing to biodiversity. Besides, there are smaller lakes-ponds used for fishing-bathing and further touristic aims. These have smaller importance from ecological viewpoints.

A special source of surface water pollution occurs when thermal water used for agricultural aims is not squeezed back into the earth, as a change in the relevant legislation terminated this obligation. As a reason, these salty, high temperature waters are led into surface watercourses, often worsening its quality and increasing the temperature. Though the amount of not-squeezed–back thermal water is not high, but the result of the change in legislation will lead to an increase, thus producing an increasing negative impact on surface waters.

4.2.3.2 Trend

+	As a result of increase of sewerage rate, stricter regulation of nitrate emission on nitrate sensitive areas, emission-decreasing efforts in Austria, and water management developments for the sake of regeneration of surface watercourses, quality of surface water bodies and courses constantly improves. River Marcal slowly works up impacts of 2010 red mud pollution, so even at this highly critical point improvement can be reached. Leading thermal water into surface watercourses will not change the direction of these positive processes.

4.2.4 Impact on hydrology, groundwater

4.2.4.1 Status

The previously mentioned underground water reserve in Szigetköz (northern part of the region, along the Danube) has a high importance, being the largest in the Karpatian basin, and being able to provide enough drinking water of supreme quality for the whole country. However, the reserve is considered to be increasingly sensitive because of the high level of ground water and the narrow, pervious overburden.

The region is rich in thermal water. Throughout the region there are wells with thermal water of temperature often as high as 99^0 C, which is rich in minerals, having curative impact as well. As

there is no monitoring of the thermal water extraction, care must be taken. For this reason, for example at Hévíz no new extraction is permitted to secure the lake's water supply.

Cease of the obligation of squeezing back the thermal water used for agricultural goals might bring a negative impact concerning quantity and recovery of subsurface waters. On the other hand, the cease of squeezing back reduces the danger of contamination.

Ground water level is different in the region, from as high as 1 m in Szigetköz to 4 ms in Zala. Ground water is unfortunately widely polluted, mostly caused by lack of sewerage, as sewage is often led straight into the ground, or into old, unused wells, thus polluting ground highly. Though rate of households connected to the sewage system had been constantly raising (in the latest years from 73,79 % in 2007 to 77,68 % in 2011), it is still far from the optimal, and environmentally soothing 100 %. Animal farms, fertilizers used by agriculture and fuel deposits also often cause pollution.

As far as the population's drinking water supply is concerned, the main problem is arsenic content (As), boron (B), nitrite and nitrate. Based on the EU Water Framework Directive (Council Directive 98/83*/EC*), deadline for providing safe drinking water is June 2015. In the region there are altogether 40 settlements, where arsenic content of water is above limit, in some places along with ammonium, nitrate and manganese. Problem of arsenic is temporarily solved in some settlements, but the final solution of all related wells is yet to be found.

4.2.4.2 Trend

0	Load on subsurface water will expectedly decrease, thanks to ongoing waste water management programmes and strict environment protection legislation, having a positive impact. However, laws facilitating water withdrawal above 50 m and ceasing obligation of squeezing back thermal water used for agricultural goals counterbalance the impact, expectedly

4.2.5 Airborne emissions excl. GHG-emissions, Impact on climate

4.2.5.1 Status

According to results of measures, quality of air generally can be regarded as acceptable in the region. Naturally, there are large differences in air pollution: most polluted points of the region are cities near highways or roads with very strong traffic, traffic being the largest resource of pollution. Highways M1, M7 and roads 1, 85, 856, 86, 74, 76 create pollution and noise centres: Győr, Mosonmagyaróvár, Sopron suffer the most, other settlements slightly less, due to bypasses.

According to regular measurement, further sources of pollution drew back in the past ten years: restructuring of industry, use of new types of fuel lacking lead and sulfur-dioxide, using natural gas as energy source instead of coal led to a decrease of general air pollution.

This of course should not let us sit back: continuous increase of traffic, new industrial developments (let us take the worst case: implementing a waste incinerator) might always mean a threat to the present fair condition.

Measurement of air quality is taken by automatic stations and manually in Győr-Moson-Sopron and Vas Counties and manually 4 points in Zala.

As far as noise pollution is concerned, noise emmission can mostly be connected to industrial plants and transport. Number of complaints increased in the latest years, and appr. 30 % of complaints prove to be right. However, in the case of large industrial plants it is difficult to enforce the set measures when it means an outage for hundreds of workers, or setting up costly noise protection equipments.

Noise pollution caused by traffic has been efficiently decreased in the case of rail transport. In the past 15 years large rate of the region's rail lines had been electrified (Szombathely-Szentgotthárd, Bajánsenye-Zalaegerszeg-Ukk-Boba, Nezsider-Fertőszentmiklós, Várpalota-Szombathely), along with setting up noise deflection walls.

Road transport is another large noise sourse. Cities' noise pollution is efficiently decreased by building bypasses (Győr, Sopron, Szombathely, Zalaegerszeg, Nagykanizsa, Sárvár). In the case of Körmend and Csorna the bypass would be also a great relief for the city as well as on-going construction of M86 for settlements along road 86[4].

Figure 26 shows NO_2 pollution in the region's larger cities ($\mu g/m^3$), compared to the limit of yearly average.

[4] We must however pay attention to the fact that, though bypasses help decrease noise pollution, at the same time they bring about new barriers for wild species.

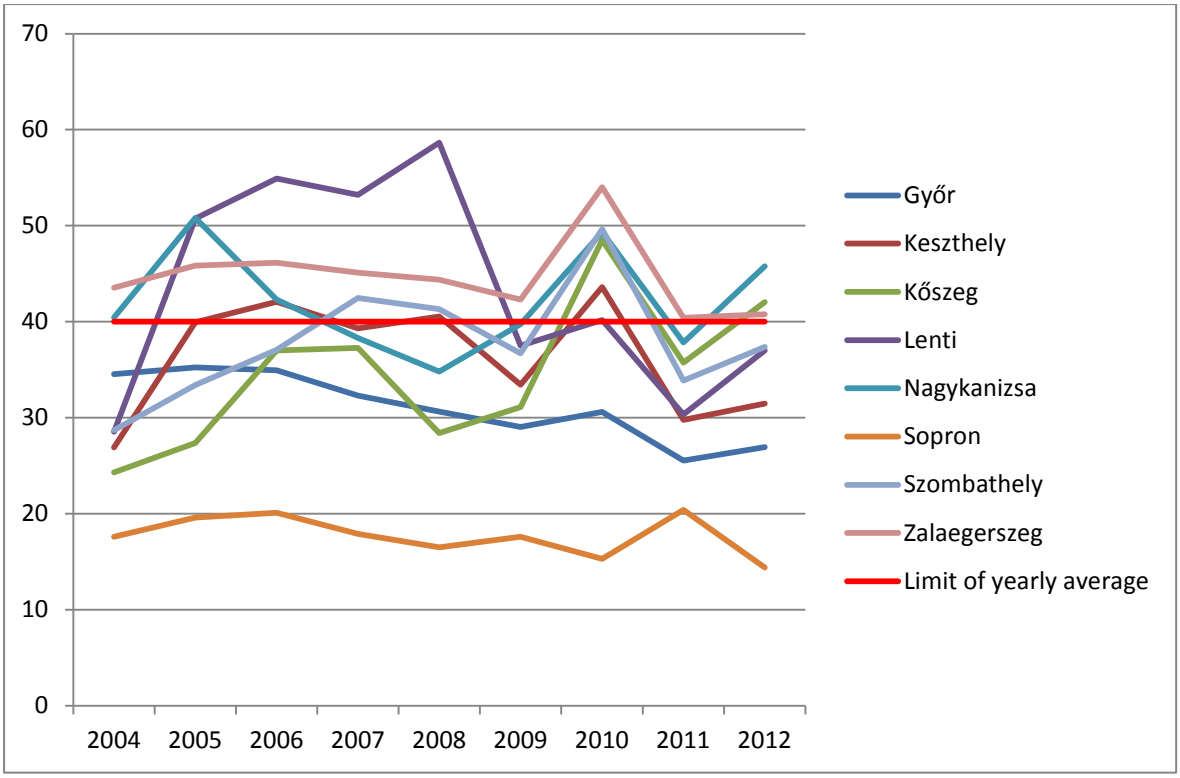


Figure 26: NO2 emission in larger cities of the West-Pannonian region

4.2.5.2 Trend

--	Quantity of particulate matter ($PM_{10\ and}$ $PM_{2,5}$) in cities will increase. The reasons are raising mobility with diesel engines; spreading of heating with firewood; in rural areas draughts and intensive agricultural activitiy couple with intensifying wind. Noise load near road and new industrial construction sites expectedly raises, in settlements with new bypasses probably reduces.

4.2.6 Impact on Biodiversity and red-list-species, wild habitats and barrier effects

4.2.6.1 Status

The region's status concerning biodiversity is fairly stable due to the relatively high rate of protected areas and conservation and protection activities of responsible organisations.

According to the IUCN[5] there are 1 critically endangered and 4 endangered species living in the West-Pannonian region. Further 1 critically endangered and 1 endangered migratory bird species appear regularly.

Rating	Scientific name	Hungarian name	Population trend

[5] See: www.iucnredlist.org/search

Critically endangered species	Numenius tenuirostris	Vékonycsőrű póling	decreasing
	Pyrus magyarica	Magyar vadkörte	stable
Endangered species	Alburnus sarmaticus	Állas küsz	unknown
	Falco cherrug	Kerecsensólyom	decreasing
	Hucho hucho	Dunai galóca	unknown
	Melanitta fusca	Füstös réce	decreasing
	Unio crassus	Tompa folyamkagyló	unknown

Table 12: Endangered and critically endangered species

24-26 further species of the region are rated as vulnerable; the population in each case is decreasing or unknown.

As far as biodiversity is concerned, we see diverse processes running paralelly. Biodiversity of bird populations on agricultural areas has been decreasing continuously since EU accession in 2004, because the EU subsidies resulted in more intensive farming. Number of Eurasian Skylarks (*Alauda arvensis*) e.g. has drastically decreased. The decrease is smaller where Organic-Agricultural farming is running[6].

Paralelly, population of woodland species has increased since 2004 as well as larger birds of prey. Number of Eastern Imperial Eagle (*Aquila heliaca*) for example increased from 16 pairs in 1974 to 140 pairs in 2012. Number of pairs of White-tailed Eagle (*Haliaeetus albicilla*) is already 250.

Generally looked upon wild habitats, all human activities may have impact on them. From this point of view, all human activities should be restricted to decrease possible impacts. Looking at the subject realistically, the following wild habitats are most vulnerable and have to receive special attention: forests, meadows, grass and reeds.

Wild habitats on legally protected areas have a fairly safe condition; responsible authorities in Hungary take care of mitigating possible impacts as far as possible. Wild habitats on non-protected areas are in a far more exposed position, not protected by the law, very often sacrificed for human well-being's reasons. The impacts are often very soft, subjective, non- or hardly quantifiable: light, smell, heat, air and noise pollution cause troublesome conditions.

A barrier, by definition is a tangible (e.g., road, wind facility) or an intangible (e.g., radiation or infrasound) disturbance that restricts the free movement, mingling, or interbreeding of indi-

[6] Magyar Madártani Egyesület, Mindennapi Madaraink Monitoringja http://www.mme.hu/mindennapi-madaraink-monitoringja-mmm

viduals or populations of a species. Thus, any constructed works of today's society creates a barrier for nature's species.

To eliminate all barriers, or not creating any more of them is of course not possible. To strive to decrease the number of them, and raise new ones only with great care and prudence is an ecological must.

There are definite pursuits for decreasing barriers in West-Pannonia:
- frog-tunnels had been created on the Hungarian side of the Fertő lake and in a number of places of Őrség;
- after a change in the regulation, new expressways and highways can be constructed only with frog-tunnels and animal overpasses where it is ecologically necessary, to minimise barrier effect for wild life;
- fish ladders were created on rivers Raba and Danube to mitigate barrier effect of transverse facilities.

4.2.6.2 Trend

-	In spite of the above mentioned efforts, processes of everyday life and today's economy constantly undermine them, worsening the conditions of wild life. Compensating activities may mostly only reduce the caused negative effects.

4.2.7 Impact in forest condition

4.2.7.1 Status

Territory of forests shows a growing tendency in the past 15 years in Hungary, the growth between 2000 and 2012 was 7,8 %. In the West-Pannonian region rate of forest cover is above 27 %, higher than the national average (20,8 %), with a variety of 32 % in Zala and 19,4 % in Győr-Moson-Sopron.

In Vas and Zala Counties rate of state ownes and private forests is approximately 50-50 %, in Győr-Moson-Sopron the rate of state ownership is 71 %.

As far as function is concerned, 59 % of all forests are used for economic reasons, 34 % serves preventive functions (nature, landscape, soil protection, water management, etc.). 42 % of the forests are subject to some kind of protection. As a result of the protection, ratio of trees above 100 years is growing, reaching 12,5 % in 2013. Aim of the National Forest Programme is to reach a 25 % rate of forest cover by 2015 through plantations.

Responsible authorities and forestries carry out activities toward conservation as well as replacement. Attitude of forestries changed a lot in the past decades, the rather economic view of clear-cutting is replaced by selection cutting or gradual regeneration cutting, thus contributing to a far more ecological forest management.

Condition of forests is, however, not perfect. Draughts, climate change, spreading of invasive plant and animal species contribute to poorer condition of trees. Pine stands are especially concerned, not being native in Hungary.

85,1 % of tree stand in Hungary are deciduous forests, 14,9 % are pines. Only on 57 % of forests' area are trees native in Hungary, 43 % are "foreign" (acacia, pine, or bred species). Considering number of trees, 68 % are native, 32 % non-native.

An up-to-date question for Hungary is the EC draft decree on restricting acacia, considered to be a harmful invasive species, at the same time being an important source of honey and firewood in Hungary. The debate is still ongoing, even among Hungarian decision-makers and professionals.

There are forest reserves in the region where all type of sylvicultural activities are forbidden. For details see http://erdoterkep.nebih.gov.hu/

4.2.7.2 Trend

0	Condition of forests has improved since 2004, underpinned by the increase of number of forest birds and mass of trees. This positive impact is weakened by decay of alien species, mostly pines in the region's woods. Infection of further alien invasive species is expectable. By and large, from environmental point of view condition of forests will neither deteriorate nor improve without developments.

4.2.8 Condition and development of nature protection areas

4.2.8.1 Status

Approximately 10,8 % of the region's territory, 120 913 ha is legally protected from environmental aspect[7]. There are 3 national parks (Fertő-Hanság Nemzeti Park, Őrségi Nemzeti Park and – partionally - Balaton-felvidéki Nemzeti Park), 7 landscape protection areas and 13 nature conservation areas in the region, along with futher Natura 2000 areas.

The map below depicts protected areas of the region: National Parks, landscape protection and nature conservation areas with green, Natura 2000 areas with violet marks.

[7] Országos területi helyzetkép. VÁTI Kht. Budapest, 2007.

Figure 27: Protected areas in the West-Pannonian region8

National parks and environmental-related authorities carried out extensive activities in the last 20 years in the field of protection, recovery, conservation, often in cooperation with each other. EU support helped these activities greatly, and resulted in a good and improving condition of protected areas.

There are, however, abuses in these areas, like the large-scale intensive agricultural activities on the territory of Őrségi Nemzeti Park in 2011, stemming probably from ignorance of a foreign farmer.

4.2.8.2 Trend

+	During the past financial cycle of the EU national parks were able to carry out developments that far exceed developments of the previous 25 years. Its results lead to the growing improvement of environmental condition of protected areas. According to pre-

[8]Map edited by the authors, based upon http://geo.kvvm.hu/tir/viewer.htm

	sent assumptions, deteriorating climatic conditions will not destroy this positive impact during the programme period, the trend will stay positive.

4.2.9 Status of hazard zone planning and impact on Number/area of regions threatened from natural hazards

4.2.9.1 Status

The West-Pannonian region's main natural hazards are water, wind and heat.

Water causes troubles in different forms: flood, inland flooding and ground water. Flood can be expected on all surface streams, last year's (2013) Danube flood being an extreme example. Floods on the Rába, Mura and Zala regularly mean problems for inhabitants and authorities as well. Flood forecast systems[9] for the Rába and Mura have been set up in the past 5 years to help preparation for hazard situation, with flood protective measures taken on-site. Both forecast systems work well and are to be maintained.

Wind and heat - the latter more in larger towns – have not yet caused serious problems; they are the hazards of the future. Climate change will bring more changeable weather, higher temperature differences, wilder winds, and less amount of rain, falling more sporadically.

4.2.9.2 Trend

0-	Climate change will bring more changeable weather, higher temperature differences, wilder winds, and less amount of rain falling more sporadically. Hazard zone planning and environment related authorities must prepare for unusual weather conditions.

4.2.10 Impact of waste volume

4.2.10.1 Status

When investigating years 2006-2012, we see a constant decrease in waste amount in West-Pannonia[10].

Solid waste total amount (households + public + industry) shrank by 34,9 %, showing an even decrease (5,82 % per year on the average). The waste amount was 514,2 kg per capita in 2006, but dropped to 334,8 kg by 2012. Amount of liquid waste shows an even higher rate of decrease: 45,5% from 2006 to 2012, shrinking by 7,5 % yearly (though the latter may be a result of the price increase, and comes out of illegal disposal).

[9] See http://www2.nyuduvizig.hu/?m=245 and http://www2.nyuduvizig.hu/?m=246.

[10] http://statinfo.ksh.hu/Statinfo/themeSelector.jsp?page=2&szst=UR

Rate of selective waste collection is on the rise, though the amount after a rapid growth in the 2000s is slightly shrinking. From 7 % in 2006 it grew to 13 % in 2011, and both amount and rate decreased slightly by 2012.

Collection of dangerous waste is not yet everywhere solved in the region. In smaller settlements, where no regular collection is organised, dangerous waste is often simply placed in ground, thus meaning potential soil and ground water pollution. A collection system would be important to be introduced.

4.2.10.2 Trend

0	As from 2014, waste disposal fees result in a decrease of disposed and increase of reused waste. At the same time the applied "polluter pays" principle drives producers and traders to strive to reduce packaging. Increasing consumption caused by growing GDP might result in possible slight growing amount of waste, thus the trend appears to have a balanced result.

4.2.11 Use of renewable and fossile raw materials

4.2.11.1 Status

Unfortunately there is no data record in Hungary concerning nationwide quantity of raw materials consumption, only on running price. Exchange of HUF data to EUR would add another uncertainty because of the rather unsteady exchange rates. Thus we rather give here the increase rate of raw materials' value. Between 2007 and 2010 the increase was 3,48 %, which shows a steady growth in spite of the economic depression.

4.2.11.2 Trend

-	Due to the booming GDP consumption of the population and economy will grow, thus use of raw materials and resources will expectedly also grow, resulting in a negative environmental impact. However, quantity of reused raw material grows as well, as the fees concerning waste disposal stimulate waste owners to reuse, recycle it. Overall effect is however, due to the raising amount, slightly negative.

4.2.12 Use of renewable energy and its rate within the energy mix

4.2.12.1 Status

Aim is to reach the rate of 14,65 % for renewable energy by 2020[11], though 2009/28 EU Directive sets 13 % for Hungary. The present situation is, however, not so good: rate of renewable energy is only at 8 % in the production of electricity. It is not easy to find relevant reliable data on rate of

[11] Magyarország Megújuló Energia Hasznosítási Cselekvési Terve 2010-2020

renewable energy within total energy consumption, as firewood is widely used by the population, but it often does not appear in official data records.

West-Pannonia's geographical and climatically aptitudes make it possible to rely on much type of renewable energies: solar, wind, geothermal, thermal and biogenic energy are most cost-efficient. According to a study by the Hungarian Academy of Sciences, potential of renewable energy of Hungary is 2,5 times of the yearly energy consumption, 2 600 PJ/year vs. 1 100 PJ/year. Based on this data, is would be very advisable to turn to these energy sources.

In Hungary neither the legal surrounding, nor the society's acceptance and awareness is comfortable and helpful enough to foster the production and use of renewable energies.

4.2.12.2 Trend

+	Need for the use of renewable energy resources is becoming more and more significant in all sectors of economy. Reducing costs resulted in new investments that produce a growing amount of energy. As energy use decreased in the region, rate of renewable energy grew. This process will continue even if energy consumption starts to grow as well.

4.2.13 Status of energy consumption

4.2.13.1 Status

In Hungary unfortunately there is no data collection on regional level concerning energy consumption, thus we can rely on national data[12]. No great differences are expectable between national and regional energy data rates.

Primary energy need of the country is still 1,22 times of the EU average on PPP. This rate hides two phenomena: high energy intensity and low energy use per capita.

Energy use of Hungary is on the slow decrease ever since 1990, with slight increases in 1995-96 and 2005-2006. Since 2006 the decrease is continuous.

Hungary is very dependent on import of energy sources, especially of fossil sources. In the past 20 years, though energy use has not reached the level of 1989, rate of import grew from 45 % in 1993 to almost 60 % by mid 2000s. 80 % of gas arrives from Russia in one pipeline, meaning a vulnerable situation for the country. Rate of import oil is only slightly less, coal being the only energy source with import rate below 50 %, parallel with rapidly decreasing amount.

[12] Nemzeti Energiastratégia 2030. Available at http://www.kormany.hu/download/4/f8/70000/Nemzeti%20Energiastrat%C3%A9gia%202030%20teljes%20v%C3%A1ltozat.pdf

4.2.13.2 Trend

-	Present low level of energy use is expected to be on the rise again due to the growth of GDP. Economic and technical forecasts say that the trend stays, and by 2020 exceeds pre-depression level.

4.2.14 Impacts on cultural heritage and landscape

4.2.14.1 Status

Natural makings largely define landscape. West-Pannonia's landscape has no outstanding makings (high hills, seaside, very traditional villages), but large woodlands in Zala, pleasing rises of Vas and caringly cultivated agricultural lands and riversides in Győr-Moson-Sopron combined with cultural relics all over the region give the impression of a well-kept, harmonious landscape. Very naturally, we can't avoid noticing print of the today: highways and windmills belong to the landscape as well as waterfalls and meadows.

In the region there are 2 314 monuments under national protection, giving 17 % of the country's all monuments. It's especially significant when we consider that the country's two most intact historical cities: Sopron and Kőszeg, and the two baroque cities: Győr and Szombathely belong to the region as well.

The following monuments are also of outstanding importance: Benedictine Archabbey and Community of Pannonhalma, nobiliary castles in Fertőd, Körmend and Keszthely, and the intact medieval churches of Lébény and Ják - to mention only the largest ones. Out of eight World Heritage Sites of Hungary two are located in the West-Pannonian region: the Millenary Benedictine Abbey of Pannonhalma and its natural environment, and the Fertő/Neusiedlersee Cultural Landscape. Zala County offers archaeological sites from the Middle Ages in Zalavár, Zalalövő, Keszthely-Fenékpuszta.

EU accession enabled the region's stakeholders, decision-makers and the site's owners to carry out reconstruction and enlargement activities, often adding new contents to the monuments, thus bringing the sites and local history closer to visitors.

4.2.14.2 Trend

-	On-going developments connected to transport and industry as well as expectable developments of local enterprises and energetic reconstruction of buildings outside of ETC programme will expectedly cause damage of landscape and cityscape. Prioritised cultural heritage items' condition will improve, but the sources for the owners will shrink for development, thus we have to count with a slight decay of the situation in the future.

4.2.15 Status of mobility

4.2.15.1 Status

The region shows a diverse picture as far as mobility is concerned.

Most of Győr-Moson-Sopron County is very well connected to its neighbourhood, quickly available from other parts of Hungary as well as from Austria, Slovakia, moreover from Germany on public roads (M1 highway), railway (432 km), and waterway. Airports of Vienna and Bratislava are in an hour's proximity.

Vas and Zala Counties however are far less approachable. South of Zala has the advantage of the vicinity of M7 motorway leading to Croatia, but the distance of Zala's northern part and Vas County from the highways is more than 30 minutes, reaching as much as 90 minutes in some cases (e.g. surrounding of Szombathely and Szentgotthárd). Finishing the construction of expressway M86 will shorten this time as from 2016, helping international transportation as well.

Railway lines wave through both Counties (453 and 291 kms), but there are no waterways, and only one smaller airport, Sármellék - near Lake Balaton – serves personal transport and trucking. Zalaegerszeg wishes to develop the small Andráshida airport to be able to receive public aircrafts.

Along the Austrian and Slovenian border the latter 15 years brought a change with reopening - and often upgrading - roads closed for 50 years, thus enabling the population in the border area to build up and rebuild personal and economical connections. Expressway S31 from Austria would give a quick reach of Vienna from Szombathely, but there appears no Hungarian intention to construct the sequence.

There are two Pan-European Corridors passing through the region: Nr. IV (Nürnberg-Istambul, passing by Győr-Budapest) and Nr. V. (Velence-Kijev, through Zagrab-Budapest). Further important cargo and personal transport corridors go through the region heading north-south.

Concerning motor vehicles, the region is relatively well-equipped. There is a slowly, but constantly growing number of cars in use, from 304 in year 2006 to 336 cars in year 2013 per 1000 capita. The average age of cars is slightly below 13 years, also constantly growing: from 10,16 years in 2006 to 12,72 in 2013. The latter process is rather unpleasant, the older cars having more possible negative effects on environment[13].

4.2.15.2 Trend

-	Mobility, parallel with GDP will slowly grow after the setback since 2008, leading to a repeated growth of motorisation. Sell of new cars will expectedly grow again, import of used cars slightly decrease, thus average age of cars might lowly start to lessen. Volume

[13] http://statinfo.ksh.hu/Statinfo/themeSelector.jsp?page=2&szst=ODE
http://www.mge.hu/page.php?pID=21&valid_from_search=all&types_search=all&keywords_search=all&IID=hu

	of motorisation and size of emission will show a mild increase in the program period.

4.2.16 Quality of infrastructure for environment friendly mobility

4.2.16.1 Status

Infrastructural development in Hungary focused on infrastructure for environment friendly mobility greatly after the EU accession.

In West-Pannonia, length of bicycle roads grew above 350 kms (we must be aware of the fact that there are many more minor roads where, thanks to scanty traffic, cycling is actually as safe as on separate bicycle roads). The map below highlights roads in West-Pannonia suitable for biking; bicycle roads as well as minor roads.

Figure 28: Bicycle roads in West-Pannonia

As far as electrification of rail transport is concerned, West-Pannonia had been lagging behind other regions for a long time. In turn, since 2000 electrification of railway lines was carried out in West-Pannonia only in this country, and that resulted in a rapid rise of electrified lines. These developments were carried out together with modernisation of intermodal stations, new electric multiple-units, developing more comfortable and user-friendly costumer service.

In the frame of integral city development projects in most of the region's cities new bicycle roads were created, new bicycle parking places built or the old ones modernised. Moreover, Győr is planning to set up a community bicycle rental system.

Though electric cars sparsely run on the region's roads, there are altogether six charging points in the region by now: four in Győr-Moson-Sopron and two in Zala County.

4.2.16.2 Trend

++	Constant growth of the length of bicycle paths, establishing bicycle parking places and community bicycle rental system connected to city development constructions (e.g. Győr) as well as bicycle-friendly changes in national transport regulation, increase of length of electrified railway lines contribute to an environmental-friendly development of infra-structure greatly.

5 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

On the basis of the status quo and the trend without implementation of the program an assessment of the environmental impact of the program is given by the experts.

Because, logically, no concrete project data for the assessment are available, the assessment provides general statements. As mentioned in the methodology chapter, the rating of the environmental impact refers to the trend without implementation of the program - not compared to the status quo, or a different reference point of time or status.

In the following chapter, the individual investment priorities are specially edited, with an explanation of how the review is concluded. Sometimes results for Hungary and Austria have the same evaluation, sometimes comes the review to a different conclusion.

In general, it should be noted that the overall assessment of the project is positive and an improvement of the environmental status is possible. However, this is only the case **if environmental awareness is emphasized and required in the tender of specific projects**!

Chapter 9.1 (Annex Rating Table) contains a tabular summary of the assessment.

5.1 3d: capacity of SME´s to engage in growth and innovation processes

1) Increasing the collaborative research & innovation capacities of SMEs focusing on the development of internationally competitive local products. 2) Increasing the effectiveness of services provided by intermediary organisations dealing with economic development to enhance the development of internationally competitive local products, manufacturing and marketing capacities for the SMEs of the region.					
INDICATORS			Risks, comments	Risks * : small ** : medium *** : large	
			In case the supported innovation is connected to energy saving and climate-friendly, then the impact is positive. If not, the OP is likely to have negative impacts as well.	Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	-	Due to possible construction of commercial facilities that may arise from project initiatives a slight increase of sealing compared with the zero-option to be expected. *In the formulation of this focus is recommended to favour resource-saving projects.*	*	*
Airborne emissions excl. GHG-emissions, Impact on climate	AT	-	Compared to the zero-option, no direct adverse effects to be expected. Secondary adverse effects are possible as a result of increased traffic due to increased interactions.	*	*
	HU	-	Increased traffic might contribute to the growth of airborne emission as a secondary or side effect.	*	*
Impacts due to barrier effects	AT HU	**0 -**	Compared to the zero-option, no direct interference is expected. Secondary impairments are possible when for the fulfilment of the objectives new transport links are opened up.	*	*
Impact on Number/area of regions threatened from natural hazards	AT HU	**0**	Due to the description of the thematic objectives is not expected to enter additional hazards compared to the zero-option. Are new infrastructure or buildings to erect these are at risk if they are installed in particular hazard zones.		
Status of hazard zone planning	AT HU	**0**	Due to the description of the thematic objectives is to be expected with no impairment of the protected areas in comparison to the zero-option. With strong technical orientation of the SME's better cooperation on the Gefahrenzonierung and planning is desirable.	*	*
Impact of waste volume	AT	-	Both directly and indirectly, a slight increase in waste volume due to increased use of resources expected.	*	**
	HU	-	Innovation might increase waste production. Indicators should restrict the quantity of waste, preferably to zero, or to maximal reuse of waste.	*	*
Use of renewable and fossile raw materials	AT HU	**0-**	Innovation and manufacturing development will slightly increase the use of raw materials. Indicators should foster the use of renewable/recycled raw materials.	*	* **
Use of renewable energy and its rate within the energy mix	AT	**0+**	Both directly and indirectly, a slight increase in energy consumption to be expected due to increased use of resources. Since the program is focused on renewable energy, negative impacts and positive secondary effects will cancel out.	*	*
	HU	**0+**	An increase can only be expected if use of renewable energy is an expectation of the program. *Use of renewable energy, or increasing the use of it should appear among the selectable horizontal commitments.*	*	*
Status of energy consumption	AT HU	-	Both directly and indirectly, a slight increase of energy consumption is expected, due to a higher demand of energy when establishing cooperation, SME´s and generating products.	*	*

Status of mobility	AT HU	**0**	No primary effects. Due to the technical nature of SME's within the program focus positive secondary effects may occur regarding mobility.		
Quality of infrastructure for env. friendly mobility	AT HU	**0**	No primary effects. Due to the technical nature of SME's within the program focus positive secondary effects may occur regarding environmental friendly mobility.		
Accumulation of impacts	AT HU	**0**	Positive or negative effects by summation of effects are not expected.		
Coaction of impacts	AT HU	**0**	Positive or negative effects through the interaction of effects are not expected.		

5.2 6c Protecting, promoting and developing cultural & natural heritage

1 Improving the protection, promotion and development of natural and cultural heritage through common approaches in a sustainable way.

INDICATORS			Risks, comments General comments: As the IP's aims are very nature-friendly, implementation carries almost no risk for the nature. We mostly make only recommendations.	Risks * : small ** : medium *** : large Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	**0**	Pilot investments and secondary results of the program implementation might increase sealing. A restrictive measure should be taken to limit it: e.g. only road reconstruction, building reconstruction only on the original area etc.	*	*
Visual impacts on landscape	AT	**0 +**	The status quo is different: In Austria the status of natural and cultural heritage is higher, therefore great impact is not expected. Only projects with no landscape changing impact to be supported. In case of loss of natural factors (trees, green surfaces etc.) a substitution is to be made.	*	*
	HU	**+**	Only projects with no landscape changing impacts to be supported. In case of loss of natural factors (trees, green surfaces etc.) a substitution is to be made. Restoration of buildings and cultural sceneries can lead to an improvement of landscape.	*	**
Impact on Biodiversity and red-list-species	AT HU	**+**	Since this Thematic Objective aims directly to preserve and to develop the natural heritage positive effects on red-list species are expected when appropriate initiatives are supported.	*	*
Impact in forest condition	AT HU	**0 +**	No negative impact is expected. Positive effects are possible in case of cooperation among national parks, nature parks when projects concerning forest biodiversity are promoted.	*	*
Condition and development of nature protection areas	AT	**++**	Since this Thematic Objective aims directly to preserve and to develop the natural heritage positive effects are expected when appropriate initiatives are supported.	**	**
	HU	**++**	Investments related to cultural heritage in nature protected areas should be supported only with much care and control.	**	**
Impacts due to barrier effects	AT HU	**0 +**	In the formulation of the program, a focus should be placed on reducing the effects of existing barriers. Then positive effects are possible.	**	*
Impacts on wild habitats	AT HU	**+**	Since this Thematic Objective aims directly to preserve and to develop the natural heritage positive effects on wild habitats are expected when appropriate initiatives are supported.	**	**
Impact of waste volume	AT HU	**0 +**	Positive effects are possible if appropriate initiatives on awareness rising are introduced. Developing cultural and natural heritage is a matter of every citizen – **only if the community is aware of its heritage culture and nature can be developed.** Littering the landscape is counterproductive. Therefor initiatives should be developed.	*	*
Use of renewable and fossile raw materials	AT HU	**0**	Use of used-recycled materials should be preferred (PR-communication, publications etc.)		

Use of renewable energy and its rate within the energy mix	AT HU	**0**	When applicable, use of renewable energy and creating renewable energy supplies should be preferred		
Status of energy consumption	AT HU	**0 -**	High energy consuming projects (such as hotels, luxury accommodations, restaurants, tourist centres, especially in the mountains) must be avoided!	**	*
Impacts on cultural heritage	AT HU	**++**	Since this Thematic Objective aims directly to preserve and to develop the cultural heritage positive effects are expected when appropriate initiatives are supported.	**	**
Accumulation of impacts	AT HU	**+**	The IP's aims predict positive results in accumulation of positive impacts	*	*
Coaction of impacts	AT	**0**			
	HU	**0**			

5.3 6d Protecting and restoring biodiversity, soil protection and restoration and promoting ecosystem services including NATURA 2000 and green infrastructures

1 Increasing the ecological stability and resilience of landscape and ecosystems.					
INDICATORS			Risks, comments	Risks * : small ** : medium *** : large	
			General comments: As the IP's aims contribute greatly to sustainability, there are no basically negative impacts and risks to be expected. Slight increase of GHGs from the increased traffic of researchers -professionals is negligible compared to the positive impacts.	Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	+	Development of measures for reduced area consumption can slow down the current trend, but they are only effective if provided in the description of the Thematic Objectives.	*	*
Impact on soil quality	AT HU	0 +	Any measure which leads to stabilization of the ecosystem also protects the soil quality.	*	*
Impact on water quality	AT HU	0 +	Any measure which leads to stabilization of the ecosystem indirectly also protects the water quality.	*	*
Impact on hydrology	AT HU	0 +	Any measure which leads to stabilization of the ecosystem indirectly also protects the hydrological system.	*	*
Visual impacts on landscape	AT HU	+	Appropriate measures within that TO can slow down the negative trend of fragmentation of the landscape and the abandonment of valuable landscape elements.	*	*
Airborne emissions excl. GHG-emissions, Impact on climate	AT HU	0 +	When realizing projects within action 2 (iii) positive impacts are possible, although the effects won´t have a measurable weight.		
Impact on Biodiversity and red-list-species	AT HU	++	A protection of the ecosystem and the landscape will improve the state of biodiversity and the Red List species.	**	**
Impact in forest condition	AT HU	+	Any measure which leads to stabilization of the ecosystem also contributes to the condition of forests.	*	*
Condition and development of nature protection areas	AT HU	++	Appropriate measures within that TO can improve the condition of protected areas, particularly in cross-border projects.	**	**
Impacts due to barrier effects	AT HU	+	Appropriate measures of the TO might decrease the existing barrier effect, especially if the water management Authority takes on projects of wild habitat reconstruction (water habitats). It will not be possible to diminish the effects of existing important barriers because only small investments are foreseen.	*	*
Impacts on wild habitats	AT HU	++	A protection of the ecosystem and the landscape will improve the condition of wild habitats.	**	**
Impact on Number/area of regions threatened from natural hazards	AT HU	+	Especially for water-related habitats, the protection of natural ecosystems also leads to improvement in flood situations. This is especially true for projects in conjunction with program focus 6f / 2. Protection of natural ecosystems naturally decreases more or less the threat of hazards, such as floods, landslides	**	*

Status of hazard zone planning	AT HU	**+**	Bilateral cooperation in the field of improvement of ecosystems, with a suitable thematic scope can improve hazard zone planning (see also TO 6f / 2).	**	*
Impact of waste volume	AT HU	**0** **+**	Action 4 might reach waste volume decrease.	*	*
Status of energy consumption	AT HU	**0 -**	Any energy needed for implementation of a project should come from renewable source!		
Impacts on cultural heritage	AT HU	**0** **+**	Protecting environment may cause maintaining traditional agricultural methods.	**	*
Accumulation of impacts	AT HU	**+**	Together with other thematic priorities of the program (mobility, renewable energies, and water management) very positive effects arise on the project area.	**	**
Coaction of impacts	AT HU	**+**	Together with other thematic priorities of the program (mobility, renewable energies, and water management) positive effects arise on the project area.	**	**

5.4 6f promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector, soil protection or to reduce air pollution

1 Promoting the wider use of innovative methods and technologies in order to increase resource efficiency (material life cycle, renewable energy, soil protection, air pollution)					
INDICATORS			Risks, comments	Risks * : small ** : medium *** : large	
				Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	**0**	Implementation of pilot and demonstration infrastructure might increase land sealing. Settling renewable energy plants needs careful cooperation with Authorities. A positive secondary trend is possible in case of emphasizing the careful use of resources and development of sustainable technology.	*	*
Impact on soil quality	AT HU	**0**	A significant positive or negative effect on soil quality due to the definition of Investment Priority is not expected. A positive secondary trend is possible in case of emphasizing the careful use of resources.		
Impact on water quality	AT HU	**0**	A significant positive or negative effect on water quality due to the definition of Investment Priority is not expected. A positive secondary trend is possible in case of emphasizing the careful use of resources.		
Impact on hydrology	AT HU	**0**	A significant positive or negative effect on hydrology due to the definition of Investment Priority is not expected. A positive secondary trend is possible in case of emphasizing the careful use of resources.		
Visual impacts on landscape	AT	**0**	There are no expected significant positive or negative effects on the landscape due to the definition of Investment Priority.		
	HU	**-**	Settling renewable energy plants (windmills, solar cells) or waste management infrastructures might have a negative impact on landscape. Supporting these settlements is suggested only under strict control of and cooperation with authorities.	*	*
Airborne emissions excl. GHG-emissions, Impact on climate	AT HU	**+**	Direct and indirect impacts of the IP lead to a positive impact on climate and decrease of airborne emission due to the definition of the specific objectives definition.	*	*
Impact on Biodiversity and red-list-species	AT HU	**0 +**	There is a very low probability that IP 6f projects will have any negative impact on biodiversity. Positive direct impacts are expected to happen. Through the pilot projects, indirect impacts also might be expected, but only if the connectivity of the actions with the Water Framework Directive is realized.		
Impact in forest condition	AT HU	**0**	There is a very low probability that IP 6f projects will have any impact on forest condition.		
Condition and development of nature protection areas	AT HU	**0 -**	Pilot projects and infrastructures should avoid nature protection areas.	*	*
Impacts due to barrier effects	AT HU	**0 -**	New infrastructures should not create barriers in any form for wild life.	*	*
Impact of waste volume	AT HU	**+**	Due to the emphasis of the investment priority positive effects in case of waste management are expected.	*	*
Use of renewable and	AT	**+**	Due to the emphasis of the investment priority positive effects in case of	*	*

fossile raw materials	HU		renewable energy technology are expected.		
Use of renewable energy and its rate within the energy mix	AT HU	**+**	Due to the emphasis of the investment priority, positive effects in case of renewable energy technology are expected.		
Status of energy consumption	AT HU	**+**	Action 1 of the OP´s description of the investment priority emphasizes the development of management activities in the field of resource efficiency. Therefore some positive effects are expected. Since it is an important future-oriented question, however, should refer to the programming of this point with more accentuation.	*****	*****
Accumulation of impacts	AT HU	**+**	The accumulation of the above mentioned positive impacts will be again positive.	******	******
Coaction of impacts	AT HU				

5.5 6f Promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector, soil protection or to reduce air pollution

2 Promoting cooperation as well as innovative and sustainable measures in the field of water management and water protection					
INDICATORS			Risks, comments We suggest putting an emphasis on implementing **ecological** water management measures, not simple water management measures.	Risks * : small ** : medium *** : large Size of impact	 Probability of impact
Increase of land consumption, sealing	AT	**0**			
	HU	**-**	A slight sealing impact might be expected in case the project implementation creates infrastructure (dams, reservoirs).	*	*
Impact on soil quality	AT	**0**			
	HU	**0+**	Water management and waste water treatment can improve soil quality.	*	*
Impact on water quality	AT	**++**	Explicitly in the description of investment priority the development of water management concerning the Water Framework Directive according is mentioned. This content should have a positive effect on water quality, hydrology and hazard zone planning. Particular attention in the implementation of the program shall be given to the improvement and development of the groundwater body. According to the Umweltbundesamt (UBA) the ground water body Parndorferplatte, Seewinkel, Wulkatal, southern Vienna Basin, Ikvatal, Rabnitz, and the Stremtal are under observation. Numerous groundwater monitoring wells are at risk of nitrate.	**	**
	HU	**++**	Waste water treatment and water management will have a significant impact on water quality. Particular attention shall be paid to the quality of river Gyöngyös and the water supply of Kőszeg.	*	**
Impact on hydrology	AT	**++**	In the description of this investment priority the development of water management, the Water Framework Directive are mentioned. This content should have a positive effect on water quality, hydrology and hazard zone planning. For the South-east of Austria and is a decrease in groundwater recharge likely (UBA, 2013), so this focus is to pay attention to.	**	**
	HU	**++**	Implementation of the activities planned in IP 6f will have a significant impact on hydrology.	**	**
Impact on Biodiversity and red-list-species	AT HU	**0**	The positive impact of reaching a better status of water bodies and the negative possible impact of measurements of flood protection give a minimum zero result. **Flood protection must be sustainable!**		
Impact in forest condition	AT HU	**0+**	In case water management measures are ecological and sustainable, impacts on floodplain forests might be positive. Otherwise no impact.	*	*
Condition and development of nature protection areas	AT HU	**0 +**	A better condition of water bodies and ground waters contribute to a better condition of protected areas. But: not ecological water management measures might have negative impact.	*	*
Impacts due to barrier effects	AT HU	**0 +**	The planned measures do not create new barriers to wild life, but might decrease barriers in rivers (improvement of connectivity).	*	*

Impacts on wild habitats	AT HU	**0 +**	The measures mentioned in IP 6f might have diverse impacts: positives (better condition of natural water bodies) and parallel negatives (hard installation measures on flood protection) on wild habitats. Water management projects should be nature related and sustainable.		
Impact on Number/area of regions threatened from natural hazards	AT HU	**+**	This specific objective explicitly aims the development water management, according to the Water Framework Directive. Projects to be realized should have a positive effect on water quality, hydrology and hazard zone planning.	***	**
Status of hazard zone planning	AT HU	**++**	In the description of the investment priority the development of the Water Framework Directive is defined as the target. This content should have a positive effect on water quality, hydrology and hazard zone planning.	**	**
Impact of waste volume	AT	**0**			
	HU	**+**	Innovations connected to wastewater management decrease amount of waste to be handled.	*	*
Use of renewable and fossile raw materials	AT HU	**0**	Any investments should use the least possible, and preferably local material		
Accumulation of impacts	AT HU	**+**	Accumulation of almost only positive impacts.	**	**
Coaction of impacts	AT HU	**++**	Coaction of OPs 6 and 11 will improve communication among environment related Authorities. Thus positive impacts are to be expected.	*	**

5.6 7b enhancing regional mobility

1 Improving the cross-border connectivity and accessibility of regional centres					
INDICATORS			Risks, comments	Risks * : small ** : medium *** : large	
			As a general comment, we would like to emphasize that the construction of any new roads will have negative impact the examined factors of nature. Therefore we highly recommend preferring only road reconstructions, upgrades!	Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	**-**	As it is noted in the description of investment Priority that only small-scale investments are planned and the emphasis is on *coordination* of mobility services, no significant loss of land it is to be expected, at most as part of the revival of cross-border linkages of small roads and small infrastructure. But Newly built transport infrastructure will necessarily mean land consumption.	* *	* **
Impact on soil quality	AT HU	**0 -**	No negative impact, if planning and implementation is careful and nature-friendly. If mobility increases, soil quality might get worse alongside the roads.	*	*
Impact on water quality **Impact on hydrology** **Visual impacts on landscape**	AT HU	**0**	*No negative impact, if planning and implementation is careful and nature-friendly!*		
Airborne emissions excl. GHG-emissions, Impact on climate	AT HU	**-**	Since the focus of this priority is to expand and increase the efficiency of public transport, it is expected to reduce emissions. Increased traffic – even if it is public – will cause higher emission, unless it substitutes private traffic.	*	**
Impact on Biodiversity and red-list-species	AT HU	**0 -**	Careful and nature-focused planning might prevent from negative impacts on biodiversity. Only small scale investments are planned, so only minor direct or indirect impacts are to be expected.	*	*
Impact in forest condition	AT	**0**			
	HU	**0-**	Construction works should not reach forests to prevent loss of forest parts.	*	*
Condition and development of nature protection areas	AT HU	**0 -**	Construction works should avoid protected areas, especially new constructions.	*	*
Impacts due to barrier effects	AT HU	**0 -**	New construction, but even upgrades and reconstructions will create barrier effects, esp. if the width increases.	*	*
Impacts on wild habitats	AT HU	**-**	Transport development can unfortunately have only negative impact in this regard. Target should be to minimalize the effects on wild habitats.	*	**
Impact of waste volume	AT HU	**0 -**	Construction of roads, even in small scale will cause building rubble. Building rubble should be disposed with care	*	**
Use of renewable and fossile raw materials	AT HU	**0 -**	New roads need new raw materials.	*	**
Status of energy consumption	AT HU	**-**	When new connections are built, the traffic volume will increase, which will cause higher energy consumption.	*	**
Impacts on cultural heritage	AT HU	**0+**	New border crossings might have positive secondary impacts on cultural heritage among border settlements, having more connections to each other.	*	*
Status of mobility	AT HU	**++**	The investment priority is directly aiming to improve mobility in the project area.	**	**

Quality of infrastructure for env. friendly mobility	AT	**+**	The investment priority is directly aiming to improve mobility in the project area. The different rating compared with Hungary is due to the status quo.	**	*
	HU	**++**	The investment priority is directly aiming to improve mobility in the project area. Lower level of environmental friendly mobility in Hungary leads to better development potential	**	*
Accumulation of impacts	AT HU	**0-** **0-**	Since some small investments will be carried out, a slight increase impacts is predicted. These impacts should be diminished and equalized by the positive effect of coactions of impacts.	*	*
Coaction of impacts	AT	**+**	Since the focus of this priority is to expand and increase the efficiency of public transport, it is expected to reduce emissions.	*	**
	HU	**+**	There are more positive than negative coactions.	*	**

5.7 7c green transport systems

1 Fostering the shift to environmental friendly modal split					
INDICATORS			Risks, comments General comments: As IP 7c targets only small scale investments, negative impacts on nature are unlikely. Preparation of more sustainable, nature-friendly ways of transport will have general beneficial impacts on the long term.	Risks * : small ** : medium *** : large Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	**0 -**	Slight increase in sealed surfaces due to various measures (creation of bicycle parking ...) possible. The negative effects can be reduced by corresponding specifications.	*	*
Airborne emissions excl. GHG-emissions, Impact on climate	AT	**+**	Developments and advancements in environmentally friendly transport systems help to reduce emissions in general.	**	***
	HU	**+**	Slight reduction of emission can be expected.	*	***
Use of renewable and fossile raw materials	AT HU	**0 -**	If projects are implemented within this Investment Priority there is little consumption of raw material.	*	*
Use of renewable energy and its rate within the energy mix	AT HU	**0 +**	If projects are implemented within this Investment Priority there is little consumption of raw material. Maybe the demand for renewable energy rises.	*	*
Status of energy consumption	AT HU	**+**	The improvement of sustainable, environmentally friendly transport systems leads to a general reduction of energy consumption, especially of fossil energy.	**	**
Impacts on cultural heritage	AT HU	**0+**	Environment friendly transport modals might have positive secondary impacts on cultural heritage among border and neighbour settlements, having more connections to each other and to tourists.	*	*
Status of mobility	AT	**+**	The investment priority is directly aiming to improve public mobility in the project area.	**	*
	HU	**+**	Successful project implementations will reach a better status of mobility.	*	**
Quality of infrastructure for env. friendly mobility	AT	**++**	The investment priority is directly aiming to improve public mobility in the project area.	***	***
	HU	**++**	Successful project implementations will enhance quality of infrastructure.	**	**
Accumulation of impacts	AT HU	**+**	Out of the accumulation of impacts we predict a positive impact connected to OP 7c.	*	*
Coaction of impacts	AT HU		This specific objective is not significantly co-acting with other investment priorities, except 7c.		

5.8 CBC Promoting legal and administrative cooperation

1 Improving the environment for cross border co-operations and regional / territorial governance structures					
Indicators			Risks, comments	Risks * : small ** : medium *** : large	
			As a general comment concerning OP 11: the cooperation among regional/territorial governance structures, and environment-related Authorities will definitely have positive impact on the SEA-indicators, although we cannot exactly predict, on which one and how large the impact shall be.	Size of impact	Probability of impact
Increase of land consumption, sealing	AT HU	**0+**		**	*
Impact on soil quality					
Impact on water quality					
Impact on hydrology					
Visual impacts on landscape					
Airborne emissions excl. GHG-emissions, Impact on climate					
Impact on Biodiversity and red-list-species					
Impact in forest condition					
Condition and development of nature protection areas					
Impacts due to barrier effects					
Impacts on wild habitats					
Impact on Number/area of regions threatened from natural hazards					
Status of hazard zone planning					
Impact of waste volume					
Use of renewable and fossile raw materials					
Use of renewable energy and its rate within the energy mix					
Status of energy consumption					
Impacts on cultural heritage					
Status of mobility					
Quality of infrastructure for env. friendly mobility					
Accumulation of impacts	AT	**+**	Although for the indicators no primary effects to be expected neither positive nor negative, the improvement of public administration and institutional capacity is a basis for the further development of environmental aspects.	**	*
	HU	**+**	Although for the indicators no primary effects to be expected neither positive nor negative, the improvement of public administration and institutional capacity is a basis for the further devel-	*	*

			opment of environmental aspects.		
Coaction of impacts	AT	+	Although for the indicators no primary effects to be expected neither positive nor negative, the improvement of public administration and institutional capacity is a basis for the further development of environmental aspects.	**	*
	HU	+	Although for the indicators no primary effects to be expected neither positive nor negative, the improvement of public administration and institutional capacity is a basis for the further development of environmental aspects.	*	*

6 REMARKS SUGGESTIONS OF FURTHER NECESSARY STEPS.

6.1 General Remarks

As the IP's aims are very nature-friendly, implementation carries almost no risk for the nature. We mostly make only recommendations.

However, environmental impact of the program will be largely influenced by the size of financial resources of each measure, and how the implementation of the program will be able to support the performance of projects serving positive environmental impacts and decreasing negative effects.

In addition to the operational programme's specifications a concretization of the action field or a careful project selection is suggested regarding supportable activities, which guarantees that projects explicitly pay attention to their environmental compatibility. In general the SEA team honours the Operational Programme because the principles of sustainable development can be found in the whole programme.

It should be guaranteed that the overall positive intention to reduce negative effects of economic activity on the environment is fulfilled. Therefore integrative aspects during the project realisation have to be strengthened. Only projects which guarantee a sustainable development should be supported (e.g. according to mobility aspects, land use and possible conflicts, landscape and overall appearance of the townscape). Special attention must be paid on transportation needs, mobility concepts to minimized transportation needs should be an integrated part of cooperation concepts.

About the detailed procedure for defining the specific scope and the specific objectives relating to the implementation of the SEA monitoring is at the present time due to lack of concrete project

proposals still no accurate statement possible. It is recommended to specify monitoring strategies in an early phase of the running tome of the programme (first half of 2015).

Concerning wild habitats, any human intervention or activity might have negative impact. Therefore we suggest to set up a rating scale where the environmental impact on wild habitats is rated separately. The rating is positive if the impact is minimal or zero. Forests, meadows, grass and reeds must receive special attention.

Projects concerning protected monumental city downtown buildings or sites, or landscape protected areas, the SEA group suggests to expect preliminary supporting declarations from responsible environmental authority. Alternatively, the rating scheme could negatively score these activities.

In some IP-s construction activities might be supported. Here we suggest for the Programme to look into the future, and expect all constructions – let it be new works or reconstruction – to meet the expectations and conditions of EU Directive 2010/31 on the energy performance of buildings. This would allow the Programme to show up project results pointing into the future – though not so much to the future, as some deadlines in the Directive fall already into this programming period.

As in some IP-s construction works are possible to be carried out, we would like to point at the danger of raising buildings in foreshores or floodplains. To avoid it, we suggest to exclude it with a prohibition concerning construction works in foreshores or floodplains – apart from water management works, of course.

6.2 Water

We suggest putting an emphasis on implementing **ecological** water management measures, not simple water management measures, and support developments only for projects relating water resources of regional or even smaller area.

In connection with the possible support of flood protection measures, attention should be paid on the ecological condition of rivers. Principally a wide variety of different river engineering solutions to stop flooding is possible. Projects which are supported should be nature oriented and back up landscape and biodiversity. Existing canal like regulated waters should be rearranged in a more nature-oriented condition, because there is still a need in improving the hydro-ecological status of almost all river systems.

Protection of quality and quantity of water should appear in all projects, not only in projects related to water management. All developments should strive to minimise water demand, reuse grey water, and energy saving, perfect cleaning of waste water. These expectations will lead to

the decrease of energy demand needed for provision of water supply and preparation for climate change.

When implementing water management developments, let them have protective, economic, touristic or agricultural aims. Special attention must be paid to complying legislation related to environment and nature protection as well as preservation of legally not protected environmental elements, species and biomes.

Protection activities of water bodies should be expanded to sustaining and developing quality of coastal wildlife, gallery forests, fens, as without these the quality of waters is not sustainable.

6.3 Climate and emissions

Concerning IP 3d: In case the supported innovation is connected to energy saving and climate-friendly, then the impact is positive. If not, the operational programme is likely to have negative impacts as well. Therefore a conscientious assessment of projects to be accepted is recommended.

In general, remarks and requirements on the minimization of waste and careful removal should be part of project tenders.

At the preparation of all developments we suggest to require a verification of meeting the expectations of the related national strategies.

The program should achieve at least the national targets in its scope. These are on the Hungarian side: 10 % growth in energy efficiency, decrease of GHG emission and reaching 14,65 % rate of use of renewable energy.

6.4 Transport and Mobility

Possible negative side effects of projects applying for support should be identified in the project selection process and the projects should be influenced in a sustainable way. According to the Operational Programme the focus in this field of activity lies on *small scale investments*, so direct effects on protection interests are limited. Nevertheless projects supported according to the field of mobility should be selected accordingly on air and climate factors, on promotion of soft mobility, on strengthening ecological awareness and promoting the use of renewable energy. As IP 7c targets only small scale investments, negative impacts on nature are unlikely. Preparation of more sustainable, nature-friendly ways of transport will have general beneficial impacts on the long term.

As a general comment, we would like to emphasize that the construction of any new roads will have negative impact the examined factors of nature. Therefore we highly recommend preferring only road reconstructions, upgrades!

The focus on supportable projects should be on sustainable transport solutions (according to the protection interest “promote eco-mobility”). The region already gained competence in the field of innovative eco-mobile transport solutions (projects were supported by previous CBC-Programmes). This competence should be strengthened further. Crosslinks from this field of activity to other fields of activity are to expect. Projects following this integrative aspect are especially welcome, if the amount of overall transportation needs is reduced due to better coordination and cooperation.

New infrastructure has negative effects on environmental protection interests. Nevertheless public transport infrastructure is considered positively because of its effects on the protection interest to promote soft mobility and secondary positive effects on other protection interests. Supportable projects should focus on eco-mobile transport solutions; support of road infrastructure should be reduced to measures which help to improve acute negative situations.

Changes in the regional accessibility (like new boarder crossings) have to be analysed according negative side effects e.g. reorientation of traffic flow through sensitive areas.

Economic and community development projects should strive not to increase mobility, or, if it’s not possible, then the demand should be met by train- or bus transport.

We suggest taking up network development of electric and hybrid cars, cycling, and their network maintenance among supportable aims.

6.5 Biodiversity and Protected Aras

An important point how ecological awareness can be strengthen further is promotion and information of measures to improve biosphere management. Especially when discussing protection measures, the benefits must be pointed out clearly to the affected real owners or interested publicity.

Cooperation should be extended to forest protection, biodiversity and increasing nature protection value, thus an extra positive impact can be reached. The existing green belt with high rate of continuous forests along the AT-SK, AT-HU borders is likely to be only protected from this financial source.

Biodiversity is mostly endangered by intensive utilisation of not protected areas, first of all water bodies. The program should strive to minimise direct and indirect involvement of natural areas. In case it still happens, compensating developments should be carried out to counterbalance negative impacts - for example with reconstruction of former natural, now agricultural or brown areas.

Locations for new power plants have to be selected carefully regarding possible negative side effects on protection interests, e.g. locations for wind turbines (possible conflicts with fauna, landscape or land use).

Most positive effects can be expected from projects which do not only concentrate on the use of renewable resources, but which follow an overall concept to strengthen regional development (e.g. use local biomass).

In case of IP 6c) we suggest to extend cooperation to forest protection, biodiversity and increasing nature protection value, thus an extra positive impact can be reached. The existing green belt with high rate of continuous forests along the AT-SK, AT-HU borders is likely to be protected only from this financial source.

6.6 Waste volume

In case of IP 6c, the present status of the programme brings about a negative impact in both countries. In case the expectations or conditions of innovation are motivating to decrease waste volume, the impact might be zero. Indicators should restrict the quantity of waste, preferably to zero, or to maximal reuse of waste.

6.7 Energy Consumption

Projects which help to save energy, improve energy efficiency are especially welcomed by the SEA-team, because the lasting growing energy consumption will become a more and more urgent problem during the next years.

We suggest for the programme to set the target for projects planning of building constructions or reconstructions to reach a near zero energy level, in compliance with Directive 2010/31/EC and the related national decrees.

We also suggest for each project to require an obligatory examination of the minimisation of its energy demand, and the possibility of reaching a 25 % rate of using locally produced renewable energy.

6.8 Cooperation

The cooperation among regional/territorial governance structures and environment-related authorities will definitely have positive impact on the SEA-indicators, although we cannot exactly predict, on which one and how large the impact shall be.

As a monitoring measure a regular (annual) review of the projects is recommended. An emphasis shall be placed on the sensitive investment priorities, such as 3d and 7b.

7 NON-TECHNICAL SUMMARY

The Strategic Environmental Assessment is required for this program, as it cannot be excluded that projects which are implemented with the help of the program have an impact on the environment - both negative and positive. Therefore, according to an EC Directive, an environmental assessment is provided. This must include various steps, or has been found that it is useful to follow a certain pattern (see chapter 2.2).

This report has the following contents:

- The methodology and analytical framework are explained.
- It is shown the current state of the environmental situation.
- It is the current development trend of environmental impacts roughly explained, in the case that the program is not being implemented - the so-called zero-option, or trend without implementing the programme.
- On the basis of common indicators, the potential environmental impacts of each investment-priority are examined.
- Finally, recommendations and comments are submitted to the program.

Due to the size of the study area and the temporary processing time a small observation scale has been chosen.

First, the study area, the study time frame, to be examined indicators and the evaluation scheme is established. Likewise, the authorities are called to be contacted during the consultation period. In Chapter 3, all terms of environmental protection objectives are described, as well as their legal basis.

Of great importance is chapter four. There, the current state of the environment and the trend without implementation of the program are described. This trend is the basis for the assessment of the environmental impact of the program.

The main environmental problems are to be found in the enormous space consumption. The continued high amount of pollutant emissions, whether nitrogen oxides, greenhouse gases or phosphorus loads reveal a similar and worrying trend. The increasing energy consumption is indeed at least slowed down (due to the stagnant economy). It is, however, still at a high level, as well as waste generation.

Chapter five assesses for each indicator and for each investment priority the potential environmental impacts of the program.

The situation in the organization of protected areas and water quality are at least improved. There is still major groundwater pollution, but the trend is upward. No significant upward trend is

assessed for biodiversity and red list species, although especially in the protected areas many efforts are done to improve the situation.

Regarding traffic we have a similar situation. While there are tremendous efforts to better organize the traffic and introduce sustainable transport systems, nevertheless, the car and truck traffic is that the fastest growing segment.

Generally, it must be said that it is a very environmentally friendly program. Many thematic priorities are aimed at environmentally relevant topics (improvement of water quality, development of nature reserves and cultural heritage, development of sustainable transport systems). In particular, the promotion of regulatory cooperation is very important for environmental issues.

The greatest danger lies in the additional sealing by certain investments. Although the program provides only small-scale investments in infrastructure, it must be ensured, that all projects aiming a wise use of natural resources and taking care of biodiversity and habitats.

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9 ANNEX

9.1 Rating Table

	ZERO-Option Austria	ZERO-Option Hungary	Thematic objective	3. Enhancing the competitiveness of SME-s through:		6 Protecting the environment and Promoting Resource Efficiency								(7) promoting sustainable transport and removing bottlenecks in key network infrastructures through:				(11) enhancing institutional capacity and an efficient public administration	
			Investment priorities	3d) capacity of SMEs to engage in growth and innovation processes		6c) cultural & natural heritage		6d) Protecting and restoring biodiversity		6f) promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector, soil protection or to reduce air pollution				7b) enhancing regional mobility		7c) green transport systems		CBC cooperation	
INDICATORS	development of indicators without implementing the programme	development of indicators without implementing the programme	Specific objectives	Increasing the collaborative research & innovation capacities of the SME networks Increasing the effectiveness of services provided by intermediary organisations dealing with economic development		Improving the protection, promotion and development of natural and cultural heritage through common approaches in a sustainable way.		Increasing the ecological stability and resilience of landscape and ecosystems		1 Promoting the wider use of innovative methods and technologies in order to increase resource efficiency (material life cycle, renewable energy, soil protection, air pollution)		2 Promoting cooperation, innovative and sustainable measures in the field of water management and water protection		Improving cross-border connectivity and accessibility of regional centres		1 Fostering the shift to environmental friendly modal split		1 Improving the environment for cross-border cooperations and regional/territorial governance structures	
	AT	HU		AT	HU	AT	HU	AT	HU	AT	HU	AT	HU	AT	HU	AT	HU	AT	HU
Increase of land consumption, sealing, visual impact landsc	-	- -		-		0	0	+	+	0	0	0	-	-	-	0 -	0 -		
Impact on soil quality	0	-		0	0	0	0	0 +	0 +	0	0	0	0 +	0 -	0 -	0	0		
Impact on water quality	0 +	+		0	0	0	0	0 +	0 +	0	0	++	++	0	0	0	0		
Impact on hydrology	0	0		0	0	0	0	0 +	0 +	0	0	++	++	0	0	0	0		
Visual impacts on landscape	*	*		0	0	0 +	+	+	+	0	-	0	0	0	0	0	0		
Airborne emissions excl. GHG-emissions, Impact on climate	0 -	- -		-		0	0	0 +	0 +	+	+	0	0	-	-	+	+		
Impact on Biodiversity and red-list-species	-	-		0	0	+	+	++	++	0 +	0 +	0 +	0 +	0 -	0 -	0	0		
Impacts on wild habitats				0	0	+	+	++	++	0	0	0 +	0 +	-	-	0	0		
Impacts due to barrier effects				0-		0 +	0 +	+	+	0 -	0 -	0+	0 +	0 -	0 -	0	0		
Impact in forest condition	0	0		0	0	0 +	0 +	+	+	0	0	0 +	0 +	0	0 -	0	0		
Condition and development of nature protection areas	+	+		0	0	++	++	++	++	0 -		0 +	0 +	0 -	0 -	0	0	0-	0-
Impact on Number/area of regions threatened from natural hazards	-	-		0	0	0	0	+	+	0	0	+	+	0	0	0	0		
Status of hazard zone planning	+	0-		0	0	0	0	+	+	0	0	++	++	0	0	0	0		
Impact of waste volume	0	0		-	-	0 +	0 +	0 +	0 +	+	+	0	+	0 -	0 -	0	0		
Use of renewable and fossile raw materials	-	-		0-	0-	0	0	0	0	+	+	0	0	0 -	0 -	0 -	0 -		
Use of renewable energy and its rate within the energy mix	+	+		0+	0+	0	0	0	0	+	+	0	0			0 +	0 +		
Status of energy consumption	0 -	-		-	-	0 -	0 -	0 -	0 -	+	+	0	0	-	-	+	+		
Impacts on cultural heritage	0	-		0	0	++	++	0 +	0 +	0	0	0	0	0 +	0 +	0 +	0 +		
Status of moblity	-	-		0	0	0	0	0	0	0	0	0	0	++	++	+	+		
Quality of infrastructure for env. friendly mobility	+	++		0	0	0	0	0	0	0	0	0		+	++	++	++		
Accumulation of impacts				0	0	+	+	+	+	+	+	+	+	0-	0-	+	+	+	+
Coaction of impacts				0	0	0	0	+	+	0	0	++	++	+	+			+	+

9.2 List of Figures

9.3 List of Tables