



**Regionalni center za okolje**  
*za srednjo in vzhodno Evropo*  
Predstavniška pisarna v Sloveniji

**Institut "Jožef Stefan", Ljubljana**



**ASSESSMENT OF ENVIRONMENTAL ASPECTS OF THE NATIONAL DEVELOPMENT  
PLAN 2001-2006  
(Elements of Strategic Environmental Assessment)**

**ENVIRONMENTAL AND HEALTH IMPACT ASSESSMENT FOR THE NATIONAL  
DEVELOPMENT PLAN 2001-2006 FOR SLOVENIA**

Ljubljana, November 2001

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Ljubljana

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**Title:** ENVIRONMENTAL AND HEALTH IMPACT ASSESSMENT FOR THE  
NATIONAL DEVELOPMENT PLAN 2001-2006 FOR SLOVENIA

**Document No.:** SPVO-DRP 2001/A

**Date:** 15.november 2001

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## 1. INTRODUCTION

### 1.1. *Purpose and scope*

The project "Assessment of Environmental Aspects of the National Development Plan 2001-2006 (elements of strategic environmental assessment - SEA)" has been commissioned by the Regional development agency (ARR) for the purpose of meeting EU regulation on environmental assessment associated with national development planning, the Single Programming Document and Slovenian accession to the EU. Contract defined the following scope of the project:

- Review of environmental chapter (aspects) of the draft NDP 2001-2006
- Preparation of interaction matrices (IMs) between development priorities, as defined in the NDP, and environmental sustainability goals
- Involvement of the public in the process of evaluation of the NDP and preparation of SEA
- Production of reports in Slovene and English.

During the work this scope has been extended as to include health aspects as well. Therefore, the title of the project has been changed into "Environmental and health impact assessment for the National Development Plan 2001-2006", since it better represents the subject of work .

### 1.2. *Organisation of the report*

The report consists of two main parts. The first is environmental and health impact assessment and is organised in four chapters (second to fifth). The second part of the report, i.e. Chapter 6, deals with public involvement in the process.

Interim/status reports were:

- Working material on review of environmental and health chapters of the NDP (submitted to the commissioner in July 2001)
- Interim report (submitted on 10 August 2001)
- Draft of the final report and final proposal for upgrading chapters on environment and health in the draft NDP (submitted on 12 October 2001)
- Financial report (submitted on 30 October 2001)

### 1.3. *Collaborators on the project*

The following experts has been engaged in preparation of the assessment:

- Dr.Branko Kontic, leader and co-ordinator of the Expert Core Team, specialist for risk assessment and methodological aspects of strategic environmental evaluation, Institut "Jožef Stefan"
- Prof.dr.Ivan Marušic, specialist for physical planning and methodological aspects of the assessment, Biotechnical Faculty
- Ass.Prof.dr.Drago Kos, specialist in social aspects of environmental assessment, Faculty of Social Sciences
- Prof.dr.Jože Rakovec, specialist for air pollution, Faculty of physics and mathematics
- Prof.dr.Marko Polic, specialist for psychological aspects in environmental assessment, Faculty of Philosophy
- Prof.dr.Miran Veselic, specialist in hydrological and hydrogeological aspects of environmental assessment, Institute of mining, geotechnology and environment
- M.D.Andreja Štular, M.D.Marko Vudrag, M.D.Aleš Petrovic, M.D.Darko Mehikic, specialists for health aspects of environmental assessment, National institute of health protection Ljubljana

- B.Sc.Andrej Uršic, biologist, specialist for biological aspects of environmental assessment, National institute of health protection Celje
- M.D.Marko Kovacevic, specialist in health aspects of environmental assessment, National institute of health protection Maribor
- Dr.Metka Filipic, specialist for biological aspects of environmental assessment, National institute of biology
- Dr.Polonca Trebše, specialist in chemical aspects of environmental assessment, Nova Gorica Polytechnic.

This group of experts formed an Expert Core Team which took a lead in making the environmental and health evaluations, and produced interaction matrices. Members of the team were also M.Sc.Jasna Koblar, a representative of the Government Service for European Affairs, and B.Sc.Igor Vucer, a representative of the Ministry of Environment (MOP).

## 2. APPROACH TO ENVIRONMENTAL AND HEALTH EVALUATION

Approach to strategic environmental evaluation in Slovenia is presented in detail in Preliminary SEA for Preliminary NDP 2000-2002 (PSEA for PNDP) [1], and in the literature cited therein, while the concept of health impact assessment is presented in [2]. It is important to note that Slovenia has (in)formal experience on strategic and project related environmental evaluation since 1973/1974. In 1984 strategic environmental appraisal has been formalised by the Law on Physical Planning, however, different terminology has been used at that time. Additionally, in 1993, the Environmental Protection Law defined these evaluations as "comprehensive environmental appraisal".

In the approach for this assessment we also considered experience of the European and other countries [3,4,5,6,7]. The emphasis has been given to the Handbook on Structural Funds and Environmental Assessment [8] and EU Directive on SEA [9]. The following can be summarised from the cited documents regarding approach on SEA:

There exist, in general, two concepts/models of SEA: "an approval based SEA" and "integral concept of SEA". The first model is similar to project related environmental assessment. Different modes of such an approach is used throughout the USA, in Great Britain, and the Netherlands. Integral approach is based on the assumption that the development and evaluation process consists of several decision-making steps – decisions about goals, alternatives, mitigation measures, etc. - which all are to be used as the points where strategic appraisal should be applied. This model is used in New Zealand, Canada and the EU.

The representative of MOP in the Expert Core Team was in favour of using the first model for this assessment. We therefore applied this model, however, it has been adapted in a way that at the end of the process an agreed document is produced in addition to its formal approval by the environmental administration, i.e., MOP. This approach guarantees harmonisation with the EU approach [8]. The approach is presented in more detail in Chapter 3.

On the operational level the following questions were used as the basis for evaluation:

- Does the document on NDP enable strategic environmental and health evaluation?
- How much would development measures/priorities contribute to quality of life, quality of the environment and health in Slovenia?
- How will existing state change after implementing foreseen measures?

The tool which was applied for these evaluations was the IM. Analyses were focused on the relations between development measures and environmental and health sustainability goals. A set of ten environmental sustainability goals were the same as suggested by the EU [8], while for health

assessment the goals were aggregated based on the WHO recommendations, and National programme on health. This aggregation is explained and presented in more detail in [2]. Here, a set of six aggregated goals are included in the Ims together with environmental ones (see Chapter 4). The evaluation was first prepared at the level of individual development measures, and then integrated for the five national development priorities. The Ims for development measures prepared experts individually, i.e. without interaction between themselves. However, aggregation has been done on workshops, based on discussion among experts involved and synthesis of "individual" matrices. In cases when there were strong different opinions among experts, adapted Delphi method has been applied to reach consensus [10]. The matrices presented in Chapter 4 have been produced based on the consensus of all the members of the Expert Core Team.

The administrative part of the SEA as defined by the methodology presented in PSEA for PNDP has not been performed. This part is responsibility of MOP and is out of scope of this assessment.

### **3. CHRONOLOGY AND MAIN COMPONENTS OF THE ASSESSMENT**

#### **3.1. *Preliminary SEA for the Preliminary NDP***

Purpose and ultimate goal of preliminary strategic assessment was the preparation of methodology for strategic appraisal of any plan, program or policy (PPP). This methodology was/is expected to be regulated and used as obligatory approach in evaluating PPPs at different levels: national, regional, local<sup>1</sup>. First application was envisaged for the NDP 2001-2006.

The work on PSEA was organised under the project "Sustainable regional development planning"<sup>2</sup> and was consisting of the following four steps:

- Conducting PSEA for PNDP by June 2000,
- Consequent development of the methodology for SEA based on a wide participation of experts (also involvement/invitation for commenting the public and potential users of SEA).
- Making a proposal of the methodology by October 2000 and its testing on NDP 2001-2006 by the end of the year 2000
- Informing the public about the progress on SEA introduction in Slovenia.

Actual work on PSEA concluded in October 2000, without "testing" the methodology on NDP, since preparation of NDP was in delay at that time. Therefore, making SEA for the NDP has been moved into 2001.

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<sup>1</sup> The Environmental Protection Act, adopted in 1993, introduced the philosophy of strategic environmental evaluations in the framework of spatial planning (Article 54). There is no doubt about the context of these evaluations as they are defined in the Act, however, the terminology sometimes causes certain confusion. Namely, the context is that environmental assessment should be performed for spatial, as well as related sectoral plans, in the earliest phases of policy development, but the term used for these assessments is comprehensive instead of strategic. This mishap sometimes turns into misguidance, since a number of EIA practitioners understand comprehensiveness as completeness, rather than strateginess. The consequence is that SEA, as a term, is clearly adopted in Slovenia just recently – from 1993, when highway construction project started. On the other hand, it is important to recognise, that the concept of SEA is present in Slovenia from the early/mid seventies. From the legal point of view it is expected that a Decree on SEA will be adopted in Slovenia in 2002. This decree will be based on Environmental Protection Act and EU Directive on SEA, 2000/4/EC of 27 June 2001.

<sup>2</sup> The project was conducted by REC; financial support has been provided by the Ministry of environment, British embassy and the Delegation of the EC in Ljubljana.

### 3.2. *Summary on PSEA for PNDP 2000-2002*

Associated with the question whether document on (P)NDP enables strategic environmental and health evaluation certain reviews have been performed. The reviewers agreed that PNDP is a partial document, which makes appraisal difficult, even impossible. Incompleteness and inconsistency of the document resulted in a rather strange hierarchy of priorities, for example: environmental protection – quality of life – development of human resources.

For eliminating such weaknesses of the document two alternatives were identified:

- a) either to improve it in the process of SEA,
- b) or to require proponents of the PNDP to improve the document before submitting it for SEA procedure.

Since the selection of the alternative strongly influences the process of SEA (if a document such as PNDP/NDP is to be improved in the SEA procedure, the procedure itself would become too comprehensive to be performed routinely), the second alternative was suggested. Possible substitution for this approach was recognised in a form of preparation separate document on environmental aspects of PNDP/NDP which could be evaluated by a special review committee appointed by the Ministry of environment. This approach was envisaged for actual NDP appraisal.

It was also emphasized that the authors of the document (either PNDP or NDP) should clearly define its purpose: whether it is primarily a document to be used in pre-accession negotiation process, or/and it is also a ***national development plan*** in its basic meaning. This is crucial since public support and overall legitimacy will eventually depend on its purpose on one side, whilst this will also determine the wideness of the appraisal approach on the other. Therefore, PNDP/NDP should clearly define primary development goal first, which is a certain level of quality of life. This goal should be achieved in a defined period of time and should not be expressed as a collection of unrealistic wishes, but rather as an achievable imperative based on societal resources. At this point the economy should be introduced as a key factor for improving quality of life and wellbeing. Besides standard economic elements it is important to put attention to education and other cultural components which influence economic development.

It was recommended that relation between proposed economic development and usage of environmental resources should be checked in the phase of SEA for NDP. It is logical that the negative correlation between the two should be decreased or avoided. It is important to achieve general public and political support for concrete development goals. PNDP/NDP should discuss alternatives for usage of environmental resources. Since PNDP did not meet this requirement it was assessed as its major weakness.

### 3.3. *Summary on the SEA method*

Figures 1 to 4 schematically illustrate the key SEA steps and the overall procedure in Slovenia which applies to certain plans, programmes or policies. The SEA process is based on six steps. It is important to recognise that SEA is a **process** and not an event at the end of a plan, programme or policy development.

The method suggests that the following basic steps, as in any environmental assessment, should be applied, namely:

- a) Identification of those elements of a PPP which can be a basis for the environmental impact evaluation,

- b) Identification of the environmental components which could be impacted due to realisation of a PPP,
- c) Identification of interactions between a PPP and the environment (development of the interaction matrices),
- d) Development of recommendations regarding programmes, measures, goals, protective actions, monitoring, etc. in the PPP,
- e) General assessment of the PPP.

Application of the interaction matrices as an evaluation tool in strategic environmental evaluation looks very appropriate. These could be of different construction. As very suitable proves the one which enables an assessment on how much a particular development priority task meets the key sustainable environmental goals. Such matrices are also suggested by the EU handbook [8]. The matrices are to be developed for the whole set of priority tasks. We applied such matrices in the evaluation of the NDP 2001-2006, extended with a health policy goals. In the process, first interaction matrices for particular development measure were prepared, which were then integrated at the level of development priorities as defined by NDP. Important step in such evaluation is final discussion among involved experts based on initial matrices. The purpose of this discussion is revision of the matrices, their clarification and aggregation, recording of the issues, and commenting them, which eventually enables auditing of the findings/results. This integration has been done on workshops. Final product of workshops are the five matrices as presented in Chapter 4.

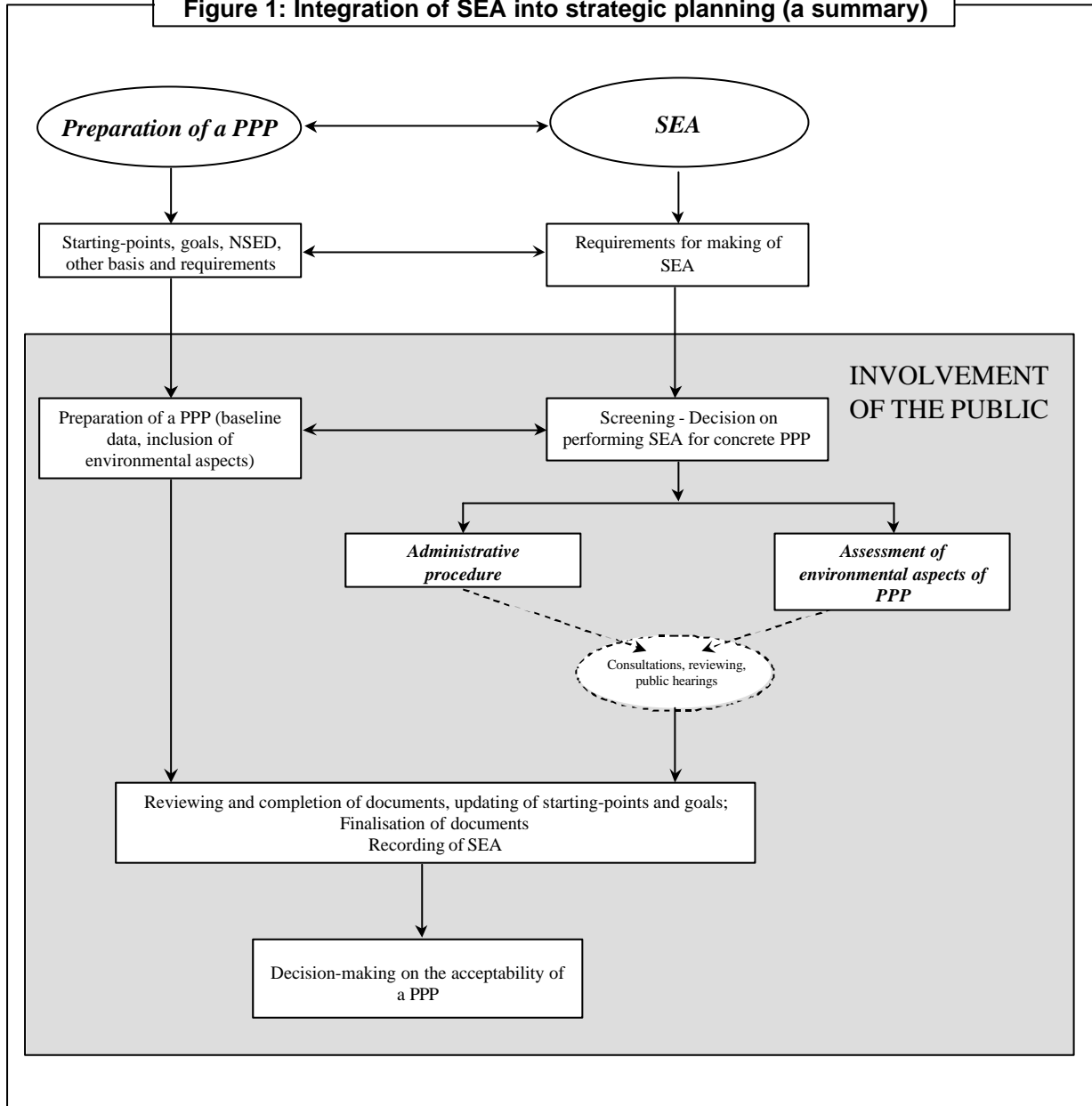
The main steps of the SEA methodology are presented in Table 1. However, since there was/is no specified legal obligation on how to perform SEA in Slovenia, these steps were implemented only partly:

1. Screening has been done informally, based on discussions among representatives of MOP, ARR and the consultant, and governmental decision from August 2000 stating that SEA for NDP should be done [11].
2. A study on SEA has not been previously prepared by ARR. First versions of the NDP were poor in these considerations as well. Yet, version of 1 August brought chapters on environment and health which made strategic appraisal possible.
3. Scoping was not done in a formal way, but rather based on the agreement between ARR and the consultant.
4. Review and improvement of the NDP has been done in a way that some of recommendations given by the Expert Core Team were adopted and included in the NDP. It still remains to include others. Some suggestions and proposals given by experts could be treated as alternative policy which deserve special consideration in the future.
5. Report on SEA is this document. Since the document on NDP is still to be upgraded by spring 2002, it is expected that so will be SEA report.
6. Approval of NDP by the Ministry of Environment is still open. The role of MOP, as well as other dilemmas, is expected to be resolved within a Decree on SEA (based on EU Directive on SEA).

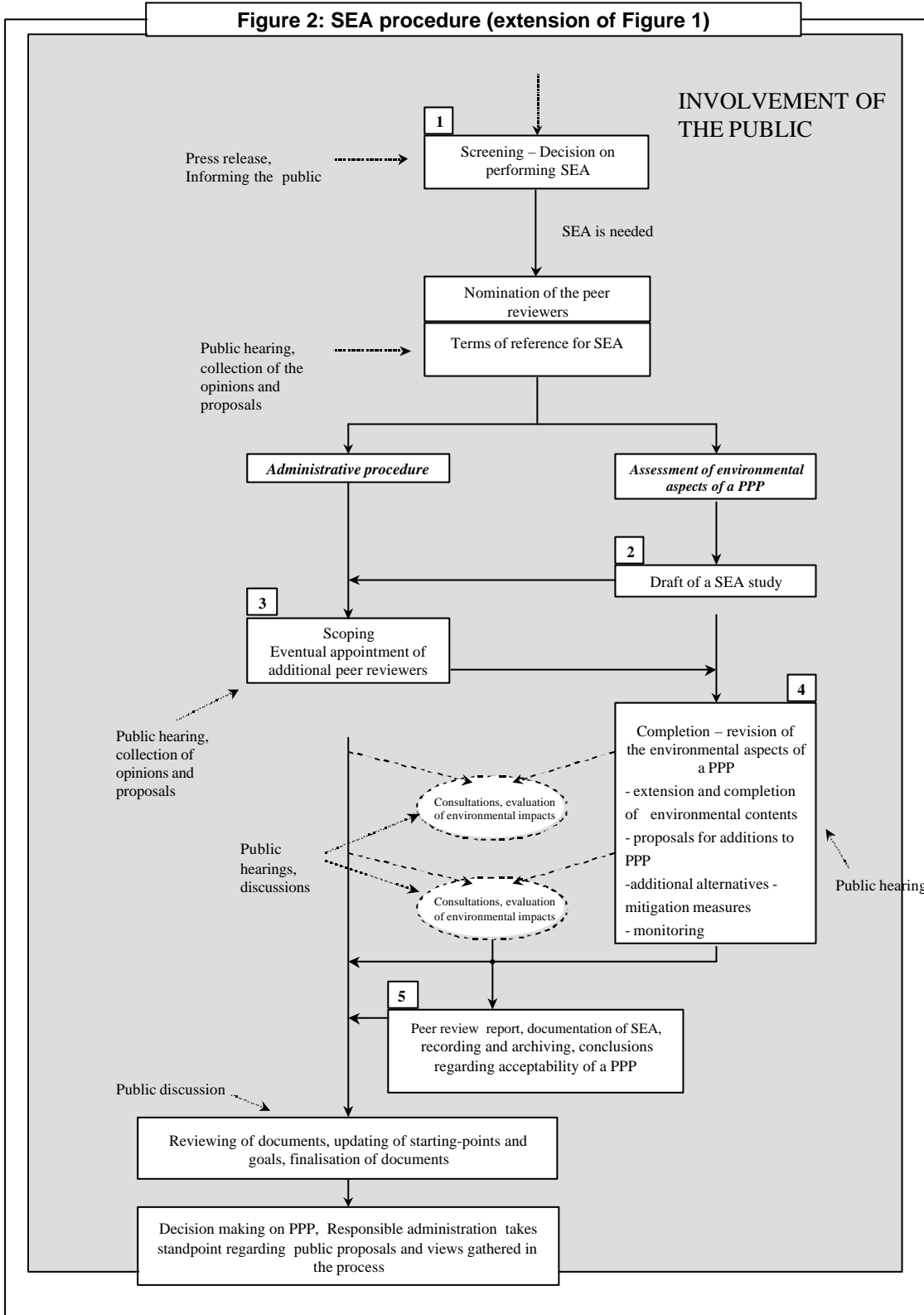
Table 1: Main steps in SEA methodology

Step	Purpose/Contents/Scope
<p><b>1. step</b> <b>Screening, i.e. decision making on the need for SEA for a PPP</b></p>	<p>Screening can be performed in a purely administrative manner, based on a list of PPPs for which SEA is mandatory, or through a case-by-case screening decision based on consultative approach. In the first case a list of PPPs has to be available in advance. In the second case the consultation may develop among environmental administration which is responsible for adequate substantive and procedural application of SEA and a planner or proponent of PPP. The screening in either case ends with a decision on whether SEA for a proposed PPP is needed or not. When SEA is needed, the responsible administration appoints (approves) experts for peer reviewing of a SEA study related to that PPP.</p>
<p><b>2. step</b> <b>Drafting of a SEA study, i.e. documenting of the environmental and health aspects of a PPP in a form to be suitable in the process of SEA</b></p>	<p>Drafting of a SEA study requires presentation of environmental aspects and considerations associated with a PPP in the form suitable for responsible environmental administration to decide about scope of the SEA. The SEA Study is prepared by and proponent of the PPP, or by an institution licensed for making such a study on behalf of the proponent of the PPP. The completeness and comprehensiveness of a SEA study for a certain PPP in this stage may vary considerably, i.e. from a very basic description of the state of environment in the area where the PPP is to be implemented, without any specific consideration of environmental changes, to the very thorough examination of alternatives and goals both environmental, health and socio-economic. Therefore, scoping on SEA is expected to be a very important step in the overall procedure, where specific requirements regarding scope and content of the SEA study are to be clearly recognised and adopted.</p>
<p><b>3. step</b> <b>Scoping, i.e. determining the scope and depth of the environmental and health analysis under the SEA procedure</b></p>	<p>Scoping is a step to determine the scope and depth of the environmental and health analysis to be carried out within the SEA. Scoping is required and performed by the responsible environmental administration. This authority may be assisted by experienced professional institution(s). In scoping all interested parties as well as the public actively participate. Depending on the nature of the scoping, additional experts as peer reviewers may also be invited.</p>
<p><b>4. step</b> <b>Completion of the SEA study, i.e. review and improvement of the analysis of environmental and health aspects of a PPP performed in step 2; this is to be done in the consultative manner within a peer review of the SEA study</b></p>	<p>The review and improvement of the analysis of environmental aspects of a PPP is done in a consultative manner within a peer review of the SEA study. Very important activity in this step is the comparison of the alternatives with a potential result of producing additional ones. Another important task is common discussion among involved experts on the results of the interaction matrices which are produced as a summary of the impact evaluation. It is expected that this particular step will bring improvements of the SEA study. Recommendations are expected in the framework of the peer review. A peer review report accompanies the final version of the SEA study.</p>
<p><b>5. step</b> <b>Documentation of the SEA procedure with conclusions regarding environmental and health analysis and acceptability of a PPP</b></p>	<p>Appropriate documentation of the SEA procedure should outline conclusions on acceptability of a PPP from environmental and health point of view. These conclusions are a basis for final public hearing and discussions on the acceptability of the PPP before formal decision-making (in the Parliament, at the government level, or where appropriate).</p>
<p><b>6. step</b> <b>Decision making on the acceptability of a PPP</b></p>	<p>The formal decision making on PPP concludes the SEA process.</p>

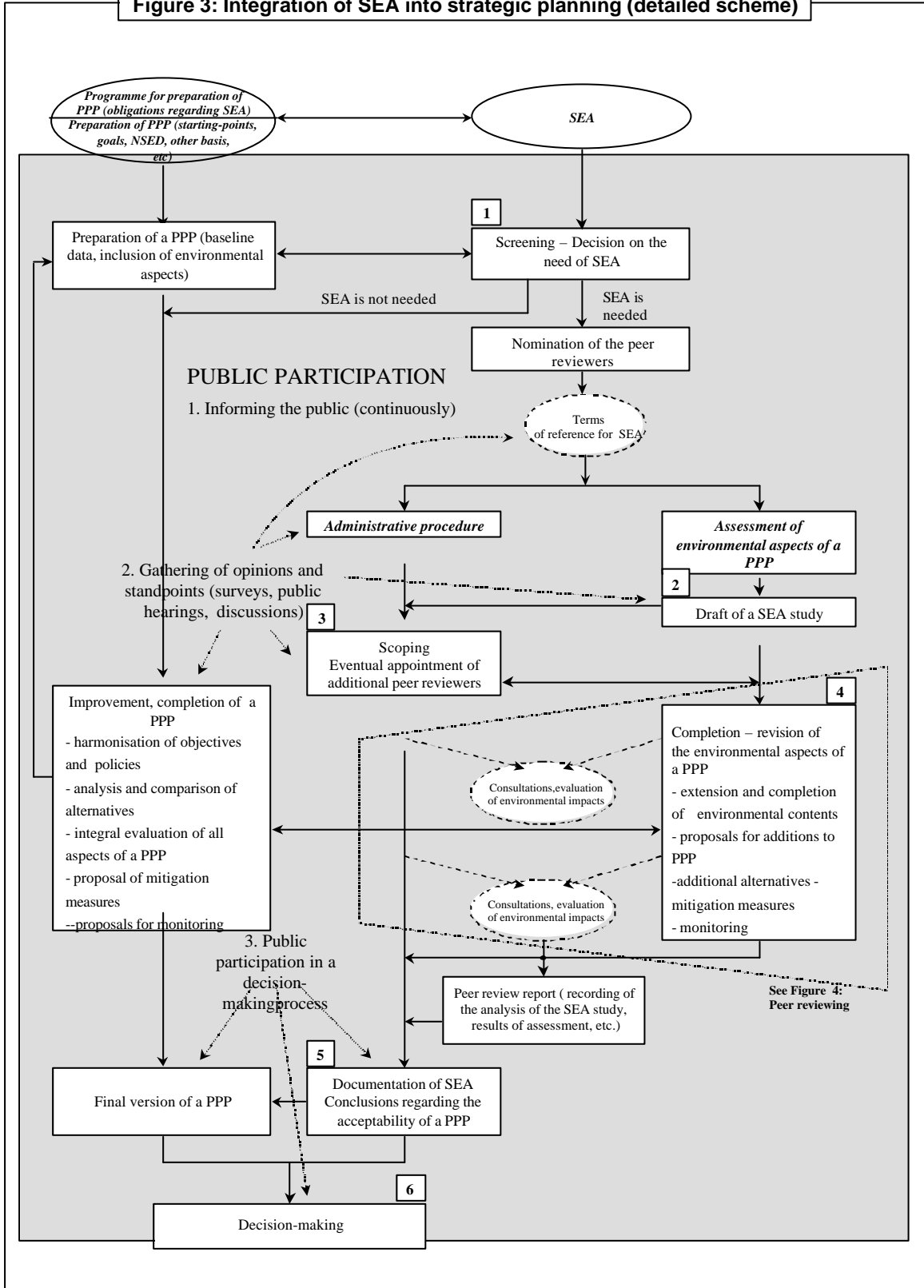
**Figure 1: Integration of SEA into strategic planning (a summary)**



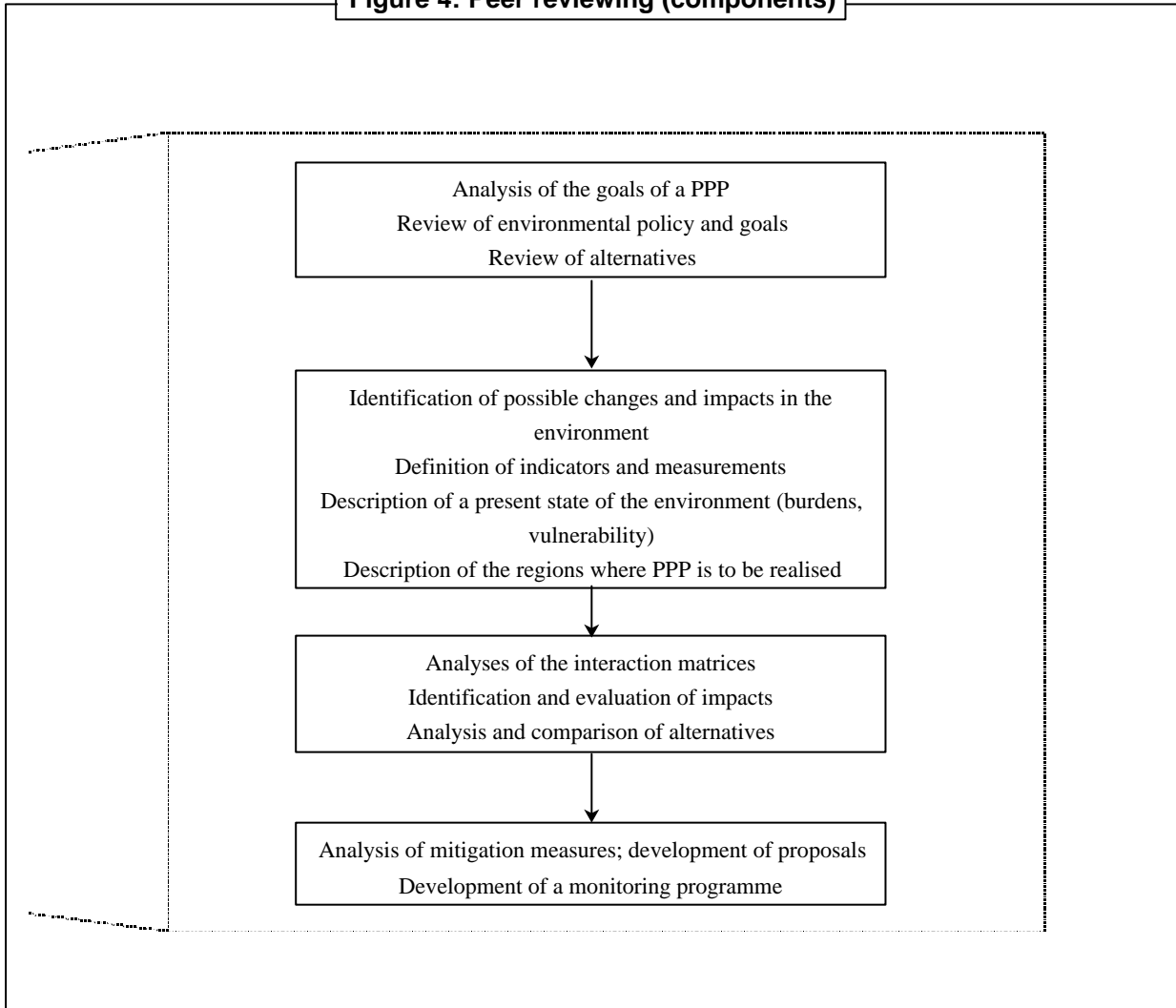
**Figure 2: SEA procedure (extension of Figure 1)**



**Figure 3: Integration of SEA into strategic planning (detailed scheme)**



**Figure 4: Peer reviewing (components)**



## 4. ENVIRONMENTAL AND HEALTH IMPACT ASSESSMENT OF THE NDP 2001-2006 PRIORITY TASKS

### 4.1. *Interaction matrices*

Evaluation is given in the form of interaction matrices for the five development priorities as defined by NDP 2001-2006. These are:

- Stimulation of entrepreneurial sector and competitiveness
- Knowledge, human resources development and employment
- Economic infrastructure and quality of living
- Restructuring of agriculture and development of rural areas
- Reinforcement of harmonised regional development.

Besides relation between priority measures and environmental & health goals, the matrices include comments to the identified effects, as well as proposals for improvement of priority measures or environmental protection activities. The matrices were discussed on six workshops during 2000-2001, where the basis for discussion were more than 40 matrices prepared individually by involved professionals and members of the NGOs. These individual matrices are available in PSEA for PNDP [1] and on the wb site <http://www.rec-lj.si>.

When interpreting matrices the following should be taken into account:

- That they apply for development priorities which are the highest, however still concrete level of the NDP. Therefore, crucial the formulations are (necesserally) more **general** than those on the level of development measures and programmes for which initial matrices have been developed (but not included in this report). Due to this generalization it is important to comment findings of the evaluations in the text which accompanies matrices. Having this in mind it is understandable that the matrices function more as an inventory record on the evaluation rather than an extensive description of the findings. The data regarding state of the quality of the environment and health, applied in the assessment, were taken from National Programmes on Environment and Health, Environmental Report from 1996, and Local Programmes on Environmental Protection.
- That the reason for dealing with environmental and health effects in the same matrix is to stress their interdependence, and to achieve consistent presentation of the results for particular **priority**, and not to separate it by effects.
- Since there is a number of development measures and programmes (altogether around hundred), it is very common that some are evaluated to have positive, some negative and some neutral effect on the environment and health. When aggregating this on the level of priorities, it may seem contradictory (on the first sight of a matrix), if a priority is evaluated positively and negatively at the same time. However, there is no contradiction in such a representation. Namely, even a particular measure or programme may have both positive and negative effects. To illustrate:  
Stimulation of entrepreneurial sector and competitiveness is generally accepted to have positive effects, especially if implemented in less developed regions. It is also expected that establishment of new enterprises will bring a need to improve environmental infrastructure, new technologies and better knowledge will be introduced. On the other hand, a desire for profit making and for reduction of unemployment may bring additional environmental problems, especially if new industrial/service zones will be established in rural areas. Similar precautions should be applied in association with desintegration of big companies, and when services/production centers will move to workforce outside concentrated, urban areas and cities. Therefore, suggestions regarding strict implementation of physical planning and licensing procedures are given in the assessment, as well as introduction of Health Impact Assessment on the project level. Health implications of this particular priority are also both, positive and negative. Employment and social security is surely positive, while stress,

overburden, and fear of getting unemployed are negative. Situations of getting unemployed were recognised during change in ownership of enterprises in nineties.

Similar positive and negative implications at the same time can be recognised with other priorities too. For example, regarding priority Economic infrastructure and quality of living the findings are that transportation is safer on highways, with lower specific emission of pollutants. However, due to absolute increase of traffic emissions will be higher than present. Highways, namely, attract traffic. It is also not resolved on the national level, what does it mean for Slovenia if the connections between western and eastern Europe will go north or south of the Alps. In addition, the combination of different means of transport are not analysed by the NDP and treated as a priority. All of these have clear health implications as well – respiratory diseases, accidents, injuries.

Based on such a reasoning it is obvious that development priorities have both positive and negative implication for environment and health, and needs to be recorded in the matrices.

- In final evaluation of the NDP a general statement on whether it will bring improvement or not is needed. Such a statement is actually the final result of SEA. The procedure may end with a formal approval including requirements for monitoring or certain conditions in terms of alternatives to be analysed for further planning.

Regarding strategic health impact assessment the basis is given in [2], WHO documents (Health in 21-st Century), and [12].

**MATRIX FOR STRATEGIC EVALUATION OF ENVIRONMENTAL AND HEALTH ASPECTS OF THE NATIONAL DEVELOPMENT PROGRAMME 2001 – 2006 (SEA)**

Priority development task: <b>Stimulation of entrepreneurial sector and competitiveness</b>		
Programmes: Knowledge for development, Improvement of competitive capabilities of companies, Stimulation of entrepreneurship and use of business opportunities		
Operational measures: <i>all within above stated programmes</i>		
<b>Goals/Indicators in the area of environmental protection and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
The lowest possible consumption of non-renewable resources	X more enterprises means more consumption of the resources	4 The shift of workforce from large to small companies will contribute to the improvement of certain segments of the environment
Consumption of renewable resources to the extent (amount) permitted by their capability of renewal	X uncontrolled stimulation of entrepreneurial, low application of new knowledge, low additional value in production	4 New knowledge and technologies, competitiveness, business skills
Environmentally sound use and treatment of hazardous substances, pollution, and waste	X Not premeditated stimulation of tourism development can be dangerous for the environment; new packaging technologies caused waste difficulties; competitiveness of the companies will raise temptation to reduce costs on the expense of environmental protection.	4 New knowledge and technologies, environmental certificates, higher technical specifications and standards
Conservation and improvement of the status in the area of wildlife, flora, habitats, and landscapes	X new companies in new business/industrial zones; in principal, dispersal of small providers is more favourable from the environmental viewpoint than massive and concentrated tourism (which is already out of date), however their sufficient efficiency is a condition – they can use less strained environment.	
Maintenance and improvement of soil quality and water resources	X New companies are a potential for new pollution	4 dispersal of smaller companies is more favourable from environmental viewpoint
Maintenance and improvement of the quality of historical and cultural heritage	X new companies and competitiveness can bring new degradation	4 An opportunity for conservation and/or revitalisation of currently derelict buildings
Maintenance and improvement of the local environment quality	X Ensuring better availability and accessibility of industrial land and elimination of administrative obstacles can be abused in certain cases.	4 Improved infrastructure, better communication with knowledge transfer and enforcement of research work.
Atmosphere protection (global atmosphere warming)		
Strengthening of the environmental awareness, education, and training		44 Knowledge contributes to environmental protection; very favourable for the environment because increased added value based on improved knowledge is usually not related with increased energy consumption and increased emissions in the environment.
Ensuring public participation in accepting decisions related to sustainable development	X The National Development Plan approach is insufficiently interactive in involvement of the public in decision making – public participation is not specified enough. In several cases in the past, current legal possibilities for involvement of the public in decision making were not used enough.	4 An opportunity for civil society to become more actively involved in »Knowledge for development« efforts
<b>Goals/Indicators in the area of health and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>

Determination of the health protection policy	X X Low inter-ministerial collaboration for improving health and to prevent strong orientation to profit making (i.e., savings in the area of workplace health and safety). Certain measures, like moving health insurance to population, are not in favour of health	44 introduction of health impact assessment
Decreasing differences in health care and state of health of the inhabitants	X if there is no balanced distribution of knowledge and access to health care, low interest in health protection among urban centers	4 more balanced regional development of entrepreneurship would support investments in health protection
Modifying behaviour patterns increasing health risks	X higher competition, unsafe employment, stress at workplace, unhealthy habits	4 higher awareness, support of work at/from home
Quality living environment	XX pollution, if environmental infrastructure will not follow development	4,44 higher awareness, care for environment (especially if entrepreneurship will support investments in environmental infrastructure)
Encouraging professional development and improvement of the quality of health services	X strong orientation to profit making in health care	4 better health care, research, international cooperation
Research in area of health protection	XX strong orientation to profit making in health care could lead to decrease of interest in preventive health care (orientation to individual instead of public health)	44 in the case of adequate budget distribution (inclusion of support to health research)
Legend: XX – important negative effect X – negative effect 44- important contribution to the achievement of goals 4 - possible contribution to the achievement of goals N – neutral effect		

#### General determination of effects - descriptive evaluation of the priority development task

The priority development task is indirectly important from environmental viewpoint. It can bring improvement (knowledge for development) as well as deterioration (stimulation of entrepreneurship and using of business opportunities). Especially uncontrolled support of entrepreneurship in tourism and even agriculture can be deteriorative for environment. However, as a whole, the proposed measures have positive effect on the environment.

#### Proposed improvement measures

Regarding tax reliefs for environmental measures our finding is that, at least regarding income tax, they are limited at unreasonably low levels. In some European countries this is not the case and tax reliefs are more favourable! Statement in the NDP that the social tax are too high, could lead to introduction of certain changes which we don't believe is appropriate. Social tax means support of different important services and activities, for example preventive health care, therefore we do not recommend non-selective decrease of these tax. NDP does not develop active family health care. It seems that human resources, as one of the pillars for economic development, are only declaratively important for NDP. Namely, it lists measures which are more negative than positive in terms of health impacts, like:

- social tax are high in comparison with other countries
- high standard will make high pressure on public finance
- expenditures for health and pension insurance will increase
- re-direction of financing health care insurance from the budget to customers (effect is further problems of access to health care for poor and elderly)
- import of workforce
- etc.

There is obvious need for a consistent common demographic and health policy, and introduction of the support for certain social groups (young families, elderly), and in different ways.

Entrepreneurship should promote improvement of the environmental quality, investments into environmental infrastructure, care for wealth, research, better access to health care, etc., which would result in better public health. It is important to introduce health impact assessment into project evaluation at all levels and improve education in this direction.

There is a need to introduce more effective monitoring and inspection control over production and services.

**MATRIX FOR STRATEGIC EVALUATION OF ENVIRONMENTAL AND HEALTH ASPECTS OF THE NATIONAL DEVELOPMENT PROGRAMME 2001 – 2006 (SEA)**

Priority development task: <b>Knowledge, human resources development and employment</b>		
Programmes: All-life education, creativity and culture of living; Improved flexibility and transparency of education and training; Employability; Adaptability of companies and individuals; Ensuring equal opportunities and social inclusion; Protection and improvement of health, high-quality and efficient health care		
Operational measures: <i>all within above stated programmes</i>		
<b>Goals/Indicators in the area of environmental protection and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
The lowest possible consumption of non-renewable resources		4
Consumption of renewable resources to the extent (amount) permitted by their capability of renewal		4
Environmentally sound use and treatment of hazardous substances, pollution, and waste		4
Conservation and improvement of the status in the area of wildlife, flora, habitats, and landscapes		4
Maintenance and improvement of soil quality and water resources		4
Maintenance and improvement of the quality of historical and cultural heritage		4
Maintenance and improvement of the local environment quality		4
Atmosphere protection (global atmosphere warming)		4
Strengthening of the environmental awareness, education, and training		44
Ensuring public participation in accepting decisions related to sustainable development		44
<b>Goals/Indicators in the area of health and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
Determination of the health protection policy	XX Health is still understood as expenditure and not as one of the pillars of development and welfare X Certain measures increase differences in health among population: customer based financing of insurance – poor will become even more poor	4 Slow introduction of different obligatory working hours week for certain jobs
Decreasing differences in health care and state of health of the inhabitants		44
Modifying behaviour patterns increasing health risks	X Education programmes do not satisfactorily consider health of children (to much sitting in the class, stress, competitiveness, etc.). requirements for continuous education is not consistent with opportunities at work and improvements at workplace	44
Quality living environment		4
Encouraging professional development and improvement of the quality of health services		4
Research in area of health protection		4
Legend: XX – important negative effect X – negative effect 44- important contribution to the achievement of goals 4 - possible contribution to the achievement of goals N – neutral effect		

### General determination of effects - descriptive evaluation of the priority development task

The priority development task is directly and indirectly important from environmental viewpoint. We believe that knowledge has general positive effect on the environment. It contributes to higher awareness about importance of environment and health, and gives confidence about problem solving. It is important to recognise that elimination of R&D centres and laboratories in Slovenian industry due to ownership change is not appropriate.

Knowledge is a key factor in integration of priority tasks. Therefore knowledge and education (formal and informal) need to be implemented at all levels of production circle, from the top management to the workers.

Better knowledge contributes to better health. More attention is to be directed to special, sensitive populations (elderly, disabled) and to improvement of mental health. Research is also very important. Regional differences should be taken into account. It is crucial to prevent further isolation of poor from health care and socialisation.

**MATRIX FOR STRATEGIC EVALUATION OF ENVIRONMENTAL AND HEALTH ASPECTS OF THE NATIONAL DEVELOPMENT PROGRAMME 2001 – 2006 (SEA)**

Priority development task: <i>Economic infrastructure and quality of living</i>		
Programmes: Information-communication infrastructure and development of new services, Waste management, Water protection, Housing development, Energy supply, Transport infrastructure		
Operational measures: <i>all within above stated programmes</i>		
Goals/Indicators in the area of environmental protection and sustainable development	Potential negative effects	Positive effects – Comment
The lowest possible consumption of non-renewable resources	X waste disposal is a consequence of waste generation; the Brestanica power plant, increased consumption of petrol and gas oil	4 Saving. It will be stimulated by knowledge, rationality in construction and production, higher prices of fuels, stimulations for efficient energy use.
Consumption of renewable resources to the extent (amount) permitted by their capability of renewal	X The construction of a hydroelectric power plant can be environmentally questionable – specific, local impacts; weak consideration and even absence of public transportation, including railway transport	44 Opportunities are opening for the use of waste – biomass, cogeneration, wind power plants, solar energy, renewal/ construction of hydroelectric power plants
Environmentally sound use and treatment of hazardous substances, pollution, and waste	X New motorways and improved existing roads bring more traffic which, however, is more fluent; increased pollution in the Bay of Koper;	4 waste management measures
Conservation and improvement of the status in the area of wildlife, flora, habitats, and landscapes	X new hydroelectric power plants; new motorways	
Maintenance and improvement of soil quality and water resources	X transport infrastructure; intensification of traffic in the Port of Koper	44 Water protection measures and waste management measures will bring improvement.
Maintenance and improvement of the quality of historical and cultural heritage		4 An opportunity for conservation or/and revitalisation of watermills and sawmills
Maintenance and improvement of the local environment quality	X Housing development in rural areas – dispersal of individual houses enables higher quality of life, while in the society it means more traffic, more difficult and less rational management of all kinds of waste; production, distribution/transport and consumption of energy can have locally negative effects, despite protective measures. For specific buildings, the consequences can be grave – XXI!	4 Improved information infrastructure will reduce material transport; improved quality of life; transport infrastructure will locally bring considerable improvement- traffic will be redirected from there (44); opportunities for local waste water treatment with plant (biological) treatment plants; the use of renewable resources and rationalisation bring improvement.
Atmosphere protection (global atmosphere warming)	X Thermal power plants, general energy consumption	4 covering of waste with a sufficiently thick earth layer and collection of methane; construction and reconstruction of hydroelectric power plants.
Strengthening of the environmental awareness, education, and training		44 knowledge contributes to environmental protection
Ensuring public participation in accepting decisions related to sustainable development	X The National Development Plan approach is insufficiently interactive in involvement of the public in decision making – public participation is not specified enough. In several cases in the past, current legal possibilities for involvement of the public in decision making were not used enough.	4 Opportunity for civil society to support sustainable ways of production/living.
Goals/Indicators in the area of health and sustainable development	Potential negative effects	Positive effects – Comment
Determination of the health protection policy		4

		better access to health care education programmes (information society), better roads – better access to health care, better water supply, etc.
Decreasing differences in health care and state of health of the inhabitants		4,44 better access to information about health, better water supply, accessibility of housing, lower environmental impacts, better roads, less accidents in traffic, better access to physicians
Modifying behaviour patterns increasing health risks	X desocialisation (information society)	4 less stress – work at home office
Quality living environment	X more traffic, more pollution, more noise	4,44 higher environmental quality (infrastructure, information, clean water)
Encouraging professional development and improvement of the quality of health services		44 better access to information, more intensive communication between experts
Research in area of health protection		4 research will be easier due to better communication and access to information
Legend: XX – important negative effect X – negative effect 44- important contribution to the achievement of goals 4 - possible contribution to the achievement of goals N – neutral effect		

#### General determination of effects - descriptive evaluation of the priority development task

The priority task has a large environmental impact. Among the programmes, the priority is given to traffic, elimination of existing problems (waters, waste), planned introduction of a system of environmental care in all segments of the society and the state; energy supply. If we limit our discussion on air emissions, there are negative (new roads increase traffic) as well as positive effects (specific emission per kilometer or tonne of transported material is lower at modern highways, better railway will certainly be more attractive). Only the bases for traffic facilitation are treated (kilometers of new or reconstructed roads, railway) which is important (better roads, less pollution per kilometer travelled), but better roads also mean increased traffic. There is no national vision on traffic in general. We suggest that public transportation should be supported, as well as networking of different modes of transportation (there is decrease in public transportation in rural areas, whilst individual transport is in excess). There is no development goal such as to improve public passenger transport in order to at least decrease the trend of growing internal road traffic, if the trend cannot be reversed! Such and similar goals and measures would contribute to improved local air quality and to reduced greenhouse gas emissions (globally). Environmental impact of road traffic is not considered in spite this remains the biggest all-Slovenian air pollution problem.

The Energy Development Programme mentions or anticipates numerous smaller and larger investments and stimulations. However, there are no concrete estimates of their net contribution to the requirements of the Kyoto Protocol to decrease emissions by 8 %. Will emissions be reduced in absolute terms? Or will they be – regarding the growth of energy consumption – be reduced at least relatively. e.g. per consumed MW in Slovenia? Average energy consumption per capita in Slovenia is only 13 % below the EU average, however energy intensity (energy/GDP) is twice the EU average in Slovenia. More appropriate term for this phenomenon would be wastefulness (the term intensity used by the authors of NDP is inappropriate!). It has to be checked whether the NDP provides sufficient funds for the implementation of all measures.

There are possibilities for the use of biomass in Slovenia, however use of **waste** wood has to be focused. In this respect, the NDP is not harmonised – in the environment/waste chapter, measures for the collection and use of waste wood are not mentioned.

Wind power plants are also not without environmental impact, therefore local impacts have to be considered carefully. Here, spatial planning and the policy of location of buildings have to be taken into consideration since it prevents the destruction of natural assets/values.

It will be useful to introduce energy audits, possibly within EMAS or some other scheme of integrated audits of the management of companies. In this respect, the Energy ID of facilities/buildings can be established. Investments in information-communication infrastructure are not appreciated everywhere: people recently strongly oppose new transmitting antennas (even radio and TV which is new). So far no proofs have been found regarding the harmfulness of micro-waves, however fear is present among the people (and cautiousness of the producers as well). Antennas can also be visually disturbing. On the other hand, communications reduce travelling from place to place – less travelling, less traffic emissions!

The entire Waste Management Programme is focused on **waste management** (separation of waste, construction of Centres for Waste Management at local/regional levels, etc.), but there are no concrete measures to **reduce generation** of waste! Of course it is understandable that old burdens have to be remediated, but a 6-year period would also allow shaping and defining a reduction strategy! There is a need to perform technology assessment for waste management programmes.

Too little attention is given to water reservoirs. Precipitation in Slovenia is high! We fail to keep the water either in the country or in appropriate locations to compensate differences between low, high and medium discharge levels! This is also in accordance with flood protection goals.

#### Proposed improvement measures

National vision regarding traffic in general would considerably facilitate planning of programmes and measures: motorways and the way of toll collection, city and suburban railway and general organisation of traffic in larger towns (public transport, parking lots in suburbs, cycling), air transport of goods and passengers (the status of Maribor and Krško airports?), etc.

Waste management strategy should include chapters on minimising waste generation and recycling.

Housing development policy should take into consideration the ratio 88 % : 12 % between owned and rented apartments which means stimulation of real-estate market, providing municipally equipped building plots, crediting, supporting energy-efficient buildings, promoting informal forms of self-builders training, promoting individual waste water treatment plants up to 5 (10) houses in rural areas, directing housing development in the areas with high-quality and inexpensive drinking water supply, stimulating and promoting the use of rain water for technological processes, establishing systems of double pipes (drinking and »technology« water) in residential buildings and industry (technological water meaning rain water suitable for washing of clothes, toilets, gardens, car washing).

In case of concrete activities with spatial impact, the prevalence of partial interests has to be prevented – participation of all social groups has to be enabled from the very beginning of procedures and the consensus of all participants, including NGO-s and civil society, has to be reached. The existing legislation enables participation of the public in decision-making on the activities with spatial impact, however so far this possibility has been insufficiently used in certain cases. Informing the public on legally supported possibilities for its involvement in procedures has to be reinforced.

It is important to assess impacts of new technologies on health and to inform the public about the results.

It is crucial to achieve cooperation among sectors and ministries on both, planning and implementation level.

**MATRIX FOR STRATEGIC EVALUATION OF ENVIRONMENTAL AND HEALTH ASPECTS OF THE NATIONAL DEVELOPMENT PROGRAMME 2001 – 2006 (SEA)**

Priority development task: <b>Restructuring of agriculture and development of rural areas</b>		
Programmes: Restructuring of agriculture, Restructuring of food industry, Development of rural areas, Development of forestry, Development of fishing, Knowledge		
Operational measures: <i>all within above stated programmes</i>		
Goals/Indicators in the area of environmental protection and sustainable development	Potential negative effects	Positive effects – Comment
The lowest possible consumption of non-renewable resources	X Agriculture development as seen by the programmes of this priority task will mean increased energy inputs despite sustainable management efforts; urban way of life will also mean certain higher consumption of non-renewable resources as well as higher levels of pollution, the same effect can also be attributed to introduction of new activities within rural development programmes.	4 Keeping rural areas settled gives the possibility closer dependence on local and renewable energy resources (biomass, solar energy); bio-production
Consumption of renewable resources to the extent permitted by their regeneration capability	X It can be expected that pressure on renewable resources will increase on land where production will intensify; it can also be expected that pressure on renewable resources – especially land – will remain on the level of their regeneration capacity. Groundwater is potentially endangered, and partially also surface waters. Otherwise, reduced pressure can be expected due to abandoning of farming on relatively large scale.	44 Giving agriculture economic foundations will reduce the cultivated areas which means returning of nature. Enforcement of European standards will improve the state of water streams and groundwater; bio-production
Environmentally sound use and treatment of hazardous substances, pollution, and waste	X Modern agriculture deals with hazardous substances, although modern technologies are improving in this respect; improving welfare brings more waste and pollution; increased numbers of tourists in rural areas bring more waste and pollution.	4 In the past (decades ago), more hazardous substances were used in agriculture than today. It is expected that scientific development will bring further improvements in this area in respect of the present state. Integration into EU environmental protection systems will also have positive effect.
Conservation and improvement of the state of wildlife, flora, habitats, and landscapes	XX Concentration processes (of land, ownership, etc.) will inevitably lead towards the removal of existing borders (hedges), individual islands of natural vegetation within agricultural land, solitary trees and similar habitat elements; there is a threat of reduced biodiversity; similar holds for breeding systems, also fish farming which causes changes in water ecosystems, especially in inland waters.	44 Decreasing agricultural land area means returning of nature. The process started decades ago and the results are not only seen in expanding forests but also returning of wildlife which had disappeared from ecosystems (lynx, wolf in the whole Slovenia, in some environments bear from larger animals, but also many birds etc.)
Maintenance and improvement of soil quality and water resources	X Environmental strain in soil and water resources is increasing with intensification of agriculture, however it is expected that the effect of other measures (sustainable technology, rural development, knowledge) will mitigate these effects; fish farming development can have negative impact on the quality of water resources.	4 Because the state is critical in many places (Savinja valley, Drava plain) it is expected that agriculture development programme will contribute to improvement. Fish farming has indirect effect on water quality – it requires clean waters.
Maintenance and improvement of the quality of historical and cultural heritage	XX Concentration processes can have negative impact on valuable cultural landscape patterns important for heritage.	44 Rural development programmes and searching for new market niches for products of less intensive farming technologies are the only right possibility for the preservation of cultural landscape

		heritage and local identity
Maintenance and improvement of the local environment quality		4 The biggest local environmental problems in rural areas are the result of low accumulation of agriculture. Rural development programmes are intended for direct improvement of quality on the local level. Increased economic power of rural population is a warrant for remediation of numerous cases of existing degradation and pollution, for improvement of municipal infrastructure etc.
Atmosphere protection (global warming)	X Waste and other emissions from agriculture; intensive activities and higher consumption in rural areas means increased consumption of fossil fuels.	4 Keeping rural areas settled also means more dispersed sources of greenhouse gases in the environment richer in vegetation and therefore possibility of their faster neutralisation (through assimilation).
Strengthening of environmental awareness, education, and training		44 The Knowledge Programme also anticipates dissemination of knowledge in rural areas which is a direct contribution to environmental awareness. Similarly, taking care of attractiveness for tourism also means concern for high-quality environment
Ensuring public participation in decision-making related to sustainable development		44 It can be expected that the programme will be implemented with detailed planning where local inhabitants will participate. The Knowledge Programme will have positive effect in this respect.
<b>Goals/Indicators in the area of health and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
Determination of health protection policy	X Low involvement of the Ministry of Health in creation of agricultural policy	44 health impact assessments, safe nutrition policy
Decreasing differences in health care and people's health condition	X no programs for safe workplace in agriculture (foresters, pesticide application)	44 better infrastructure, awareness
Modifying behaviour patterns that increase health risks		4 improved welfare, information, communication influence behavioural patterns
High-quality living environment		4,44 better knowledge, environmental protection, safe nutrition, clean water, clean technologies
Encouraging professional development and improvement of the quality of health services		
Research in the area of health protection		
Legend: XX – important negative effect X – negative effect 44- important contribution to the achievement of goals 4 - possible contribution to the achievement of goals N – neutral effect		

Comment to the determination of effects in the matrix and descriptive evaluation of the priority development task

The priority development task is inclined towards idealisation of actual possibilities for the restructuring of agriculture in Slovenia. On one hand, Slovenia has little possibilities for modern agricultural production processes – they are limited to several alluvial plains where an important (in the future it might be the most important) natural resource – groundwater - is also present. The picture of modern agriculture is not in accordance with the notion of

family farms and more or less idyllic conditions in agriculture, although Europe tries to preserve at least part of it through various programmes (see European Landscape Convention). At the same time, large agricultural enterprises are emerging which will use modern technological processes, not inevitably burdening the environment more than present technologies. Modern agriculture will be perhaps more heterogenous as shown in the priority development task, in positive as well as negative environmental impacts. Social structure of rural settlements will definitely be the most affected, however the impacts will not necessarily be exclusively negative, although it will mean the loss of the past patterns of people's living. The number of farms will have to be **reduced** drastically, while the remaining farms will have to become larger. In Germany today, the size of farms has to be at least 300 hectares in order to be economically viable regarding the world prices. In some cases, such as vegetable, wine and fruit growing, the numbers are lower, however they are still extremely high when compared to the situation in Slovenia. The policy that does not follow the direction of increasing farm sizes and restructuring into larger farm enterprises can be disastrous for the activity itself (farming) as well as for life in rural areas. Of course, this process of the restructuring of agriculture will cause dramatic changes in physical as well as social component of rural areas.

The development programme is also based on environmentally questionable preposition that keeping our rural areas settled and cultivated is an important goal. This, however, is not so self-evident and positive. In global respect, environmental strain in Europe, especially from agriculture, is much higher than in other continents (in Europe, 29.4 % of the land area is arable land, while the world average is 10.8 % - FAO, Production yearbook 1972). Therefore, rural development measures have different effects. The effect on cultural heritage and social environment in rural areas is by all means positive. However, the effect on nature is negative. Effects on the use of resources could be characterised as moderately negative. We suppose less rational use of non-renewable resources in case of dispersed settlement and activities that characterise our rural areas (e.g. less possibilities for public transport, less rational infrastructure, higher space consumption for housing, etc.). Renewable resources do not lose their quality if they are returned natural state (i.e. expanding forests on the expense of agricultural land etc.). And it is a question whether these are resources at all if their use is not economically rational. On the other hand, other resources such as water, recreational attractiveness, atmosphere, only gain the quality if the land is returning to its primary state.

The development of tourism in rural areas, small processing plants/facilities, preservation of traditional crafts, organising of sales – village markets, fairs, stores – all in the context of alternative income sources, is not particularly promising from the development point of view, although it does not cause important negative environmental impacts. The actual economic efficiency is more questionable regarding this priority. The results of such efforts in the near past have been relatively negligible. In some more successful cases, »farm tourism« is being transformed into a classical form of tourism. It has to be stressed that preservation of activities such as traditional crafts, archaic customs etc., if they are to be economically important, means »frozen« social images in rural areas, which is ethically questionable. It means a serious potential impact on social environment.

Preparation of development programmes, searching for market niches, stimulating inventiveness in local population, local development cores, adapting to new market conditions, promoting local participation, awareness raising, animation of interest groups is the most prospective development priority for Slovenian rural areas. It means settled and vibrant rural areas, however it will probably not be possible to implement it with the same intensity in all areas of Slovenia. Because (we suppose) modern activities are involved which are less intensive in terms of energy and material, while much more intensive in terms of top-level knowledge input, lower rate of burdening the resources and living environment is expected. However, such activities will inhibit spontaneous returning of nature. Development measures are seen as appropriate – we suppose that diversification of income sources in rural areas will also set path for the progress in the area of environmental protection.

#### Proposed improvement measures

NDP should distinguish between rural development and agriculture restructuring. These are not the same thing. At rural areas only 20% of population make living on agriculture. By entering EU this figure will even drop.

It is necessary to clarify the role of agriculture in Slovenia on conceptual level. Agriculture and forestry are not only economically important. Agriculture has also social and environmental implications and is not meant as food production activity. However, Slovenian agriculture can rely on specific, traditional products. Restructuring towards

higher economic efficiency does not necessarily mean a good option for Slovenia. Certain measures, if implemented without control, can bring degradation of renewable resources (Vipavska valley, for example). It would be useful to spatially differentiate individual development programmes and sub-programmes since their spatial implementation will not be possible in such a general way. Besides, programmes have to be spatially harmonised with other interests, such as groundwater and surface waters protection. Only precise spatial allocation will allow more accurate assessment of environmental impacts of different modes of agriculture – apart from negative impacts on groundwater and surface waters also the impacts on landscape and cultural heritage, social structures in rural areas, nature preservation, etc.

As a more concrete mitigation measures in the environment we suggest introduction of habitats for domestic field animals together with wind barriers made of natural, local material.

Health impact assessment together with establishment of a general safe nutrition policy would be beneficial in intensive agriculture. Cooperation among ministries is crucial (an example is Finland) where already have results of such cooperation in terms of drastic drop in mortality due to cardiovascular diseases.

**MATRIX FOR STRATEGIC EVALUATION OF ENVIRONMENTAL AND HEALTH ASPECTS OF THE NATIONAL DEVELOPMENT PROGRAMME 2001 – 2006 (SEA)**

Priority development task: <b>Reinforcement of harmonised regional development</b>		
Programmes: Regional infrastructure development programme, Integral urban and rural development programme, Protection and development of natural and cultural heritage, Development of civil society institutions on local level, Programmes for protection and improvement of health on regional level		
Operational measures: <i>all within above stated programmes</i>		
<b>Goals/Indicators in the area of environmental protection and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
The lowest possible consumption of non-renewable resources	X Opening of business zones, expansion of multinational enterprises, import of non-clean technologies	4 establishing of consulting centers, energy savings, less traffic, close employment
Consumption of renewable resources to the extent (amount) permitted by their capability of renewal		4, N recreation and sports centers
Environmentally sound use and treatment of hazardous substances, pollution, and waste	X development of tourism in rural areas, local transport infrastructure	4 regional municipal infrastructure
Conservation and improvement of the status in the area of wildlife, flora, habitats, and landscapes	X,N depending on protective measures and control	4 establishing of protected natural areas
Maintenance and improvement of soil quality and water resources	X,N business zones, depending on protective measures and control	4 establishing of protected natural areas
Maintenance and improvement of the quality of historical and cultural heritage		4 maintenance and management of cultural heritage, revitalisation of historic town centers
Maintenance and improvement of the local environment quality	X Local transport infrastructure, tourism, business zones	4 maintenance and management of cultural heritage, revitalisation of historic town centers
Atmosphere protection (global atmosphere warming)	N	N
Strengthening of the environmental awareness, education, and training	X low financial share for education, structural inconsistency in education	44 Designation of professional advocates – representatives of public interest, development of civil society institutions – non-governmental and non-profit institutions
Ensuring public participation in accepting decisions related to sustainable development	X centralism, uncontrolled influence of domestic and foreign capital	44 Designation of professional advocates – representatives of public interest, development of civil society institutions – non-governmental and non-profit institutions
<b>Goals/Indicators in the area of health and sustainable development</b>	<b>Potential negative effects</b>	<b>Positive effects – Comment</b>
Determination of the health protection policy		4 provided health impact assessments for the new zones
Decreasing differences in health care and state of health of the inhabitants		44 more balanced development
Modifying behaviour patterns increasing health risks		44 less stress due to lower differences
Quality living environment		44 infrastructure (collectors, wastewater treatment plants, waste management)
Encouraging professional development and improvement of the quality of health services		
Research in area of health protection		4 provided collaboration among sectors-ministries
Legenda:           XX – important negative effect X – negative effect 44- important contribution to the achievement of goals 4 - possible contribution to the achievement of goals		

### General determination of effects - descriptive evaluation of the priority development task

The priority development task is not environmentally intensive, however it has an indirect effect on the environment. The development of regional infrastructure and integral urban and rural development do not follow a certain vision in an organised manner – instead it is a random selection of measures. In infrastructure composition there are no connections between the social component, health care, education, research, consulting, civil society etc. Above all, there is no vision about what are our intensions as a country, i.e. what will be the future of Slovenian economy in the upcoming decades! (What was done in recent decades by Ireland and Finland). Such a vision, if well selected and formulated, can solve economic and environmental problems at the same time! Let us illustrate this by an example: Although the National Development Programme anticipates preservation of the current agricultural pattern, merging of farms can be expected as a result of joining the EU. This means that the number of farmers will decrease – what will the remaining the rural population do? Will the people migrate to urban areas? Will they commute to work in towns? Neither solution is good – also from environmental viewpoint. The best solution is to be employed (almost) at home. For example, a vision of »soft« economy based on knowledge, without massive material flows, with low energy consumption etc. is needed for non-farming young generation in the Goriška Brda region (which has enormous wine- and fruit-growing potential that should by all means be used!!). Why would only tourism be appropriate for the development of rural areas? What about small »high-tech«? In this relation, urban and rural areas also have to be more clearly defined and clearer differentiation between different urban centers and regions has to be established in the context of decentralisation (Slovenia definitely cannot be simply divided into the »Ljubljana urban region« and »the rest« or west and east of Slovenia). Ministries should work together on these issues.

The National Development Programm is a good starting point for the natural and cultural heritage to become a basis for activating the young, for all-life education, international cooperation etc.

### Proposed improvement measures

To improve participation of the public we propose actual development of civil society institutions on the local level. There is lack of support (professional, material, spatial, financial) to carry out activities on local, regional, national and international levels. However, environmental NGO-s already have a programme of priority activities. There is a partnership established with the Ministry of Environment, but concrete mechanisms are still missing for direct involvement of NGOs into policy/decision making.

It is crucial that inter sectoral-ministerial cooperation is achieved also at local and regional level, and that health is included in regional development plans.

## 4.2. *Summary of evaluations*

The key findings for each of the priority tasks are:

### a) Stimulation of entrepreneurial sector and competitiveness

The priority development task is indirectly important from environmental viewpoint. It can bring improvement (knowledge for development) as well as deterioration (stimulation of entrepreneurship and using of business opportunities). Especially uncontrolled support of entrepreneurship in tourism and even agriculture can be deteriorative for environment.

Statement in the NDP that the social tax is too high, could lead to introduction of certain changes which we don't believe are appropriate. Social tax means support of different important services and activities, for example preventive health care, therefore we do not recommend non-selective decrease of this tax.

Entrepreneurship should promote improvement of the environmental quality, investments into environmental infrastructure, care for wealth, research, better access to health care, etc., which would result in better public health. It is important to introduce health impact assessment into project evaluation at all levels and improve education in this direction. There is a need to introduce more effective monitoring and inspection control over production and services.

As a whole, the proposed measures have positive effect on the environment.

### b) Knowledge, human resources development and employment

The priority development task is directly and indirectly important from environmental viewpoint. We believe that knowledge has general positive effect on the environment. It contributes to higher awareness about importance of environment and health, and gives confidence about problem solving.

Knowledge is a key factor in integration of priority tasks. Therefore, knowledge and education (formal and informal) need to be implemented at all levels of production circle, from the top management to workers.

Better knowledge contributes to better health. More attention is to be directed to special, sensitive populations (elderly, disabled) and to improvement of mental health. Research is very important.

### c) Economic infrastructure and quality of living

The priority task has a large environmental impact. Among the programmes, the priority is given to traffic, elimination of existing problems (waters, waste), planned introduction of a system of environmental care in all segments of the society and the state; energy supply. As a key deficiency of the task we see the fact that there is no national vision on traffic in general. We suggest that public transportation should be supported, as well as networking of different modes of transportation.

The Energy Development Programme mentions or anticipates numerous smaller and larger investments and stimulations. However, there are no concrete estimates of their net contribution to the requirements of the Kyoto Protocol to decrease emissions by 8 %. Average energy consumption per capita in Slovenia is only 13 % below the EU average, however energy intensity (energy/GDP) is twice the EU average in Slovenia.

There are possibilities for the use of biomass in Slovenia, however use of waste wood has to be focused. In this respect, the NDP is not harmonised – in the environment/waste chapter, measures for the collection and use of waste wood are not mentioned.

Wind power plants are also not without environmental impact, therefore local impacts have to be considered carefully. Here, spatial planning and the policy of location of buildings have to be taken into consideration since it prevents the destruction of natural assets/values.

The entire Waste Management Programme is focused on waste management (separation of waste, construction of Centres for Waste Management at local/regional levels, etc.), but there are no concrete measures to reduce generation of waste!

In case of concrete activities with spatial impact, the prevalence of partial interests has to be prevented – participation of all social groups has to be enabled from the very beginning of procedures and the consensus of all participants, including NGO-s and civil society, has to be reached. The existing legislation enables participation of the public in decision-making on the activities with spatial impact, however so far this possibility has been insufficiently used in certain cases. Informing the public on legally supported possibilities for its involvement in procedures has to be reinforced.

It is important to assess impacts of new technologies on health and to inform the public about the results.

It is crucial to achieve cooperation among sectors and ministries on both, planning and implementation level, and to include health aspects in the development.

#### d) Restructuring of agriculture and development of rural areas

The priority development task is inclined towards idealisation of actual possibilities for the restructuring of agriculture in Slovenia. On one hand, Slovenia has little possibilities for modern agricultural production processes – they are limited to several alluvial plains where an important (in the future it might be the most important) natural resource – groundwater - is also present. The picture of modern agriculture is not in accordance with the notion of family farms and more or less idyllic conditions in agriculture, although Europe tries to preserve at least part of it through various programmes. At the same time, large agricultural enterprises are emerging which will use modern technological processes, not inevitably burdening the environment more than present technologies. Modern agriculture will be perhaps more heterogeneous as shown in the priority development task, in positive as well as negative environmental impacts. Social structure of rural settlements will definitely be the most affected, however the impacts will not necessarily be exclusively negative, although it will mean the loss of the past patterns of people's living.

The development programme is also based on environmentally questionable preposition that keeping our rural areas settled and cultivated is an important goal. This, however, is not so self-evident and positive. In global respect, environmental strain in Europe, especially from agriculture, is much higher than in other continents (in Europe, 29.4 % of the land area is arable land, while the world average is 10.8 % - FAO, Production yearbook 1972). Therefore, rural development measures have different effects. The effect on cultural heritage and social environment in rural areas is by all means positive. However, the effect on nature is negative. Effects on the use of resources could be characterised as moderately negative. We suppose less rational use of non-renewable resources in case of dispersed settlement and activities that characterise our rural areas (e.g. less possibilities for public transport, less rational infrastructure, higher space consumption for housing, etc.). Renewable resources do not lose their quality if they are returned

natural state (i.e. expanding forests on the expense of agricultural land etc.). And it is a question whether these are resources at all if their use is not economically rational. On the other hand, other resources such as water, recreational attractiveness, atmosphere, only gain the quality if the land is returning to its primary state.

Preparation of development programmes, searching for market niches, stimulating inventiveness in local population, local development cores, adapting to new market conditions, promoting local participation, awareness raising, animation of interest groups is the most prospective development priority for Slovenian rural areas. It means settled and vibrant rural areas, however it will probably not be possible to implement it with the same intensity in all areas of Slovenia. Because (we suppose) modern activities are involved which are less intensive in terms of energy and material, while much more intensive in terms of top-level knowledge input, lower rate of burdening the resources and living environment is expected. However, such activities will inhibit spontaneous returning of nature. Development measures are seen as appropriate – we suppose that diversification of income sources in rural areas will also set path for the progress in the area of environmental protection.

NDP should distinguish between rural development and agriculture restructuring. These are not the same thing. At rural areas only 20% of population make living on agriculture. By entering EU this figure will even drop.

It is necessary to clarify the role of agriculture in Slovenia on conceptual level. Agriculture and forestry are not only economically important. Agriculture has also social and environmental implications and is not meant as food production activity. However, Slovenian agriculture can rely on specific, traditional products. Restructuring towards higher economic efficiency does not necessarily mean a good option for Slovenia. Certain measures, if implemented without control, can bring degradation of renewable resources (Vipavska valley, for example). It would be useful to spatially differentiate individual development programmes and sub-programmes since their spatial implementation will not be possible in such a general way. Besides, programmes have to be spatially harmonised with other interests, such as groundwater and surface waters protection. Only precise spatial allocation will allow more accurate assessment of environmental impacts of different modes of agriculture – apart from negative impacts on groundwater and surface waters also the impacts on landscape and cultural heritage, social structures in rural areas, nature preservation, etc.

As a more concrete mitigation measures in the environment we suggest introduction of habitats for domestic field animals together with wind barriers made of natural, local material.

Health impact assessment together with establishment of a general safe nutrition policy would be beneficial in intensive agriculture.

#### e) Reinforcement of harmonised regional development

The priority development task is not environmentally intensive, however it has an indirect effect on the environment. The development of regional infrastructure and integral urban and rural development do not follow a certain vision in an organised manner – instead it is a random selection of measures. In infrastructure composition there are no connections between the social component, health care, education, research, consulting, civil society etc. Above all, there is no vision about what are our intentions as a country, i.e. what will be the future of Slovenian economy in the upcoming decades! Ministries should work together on this issue.

To improve participation of the public we propose actual development of civil society institutions on the local level. There is lack of support (professional, material, spatial, financial) to carry out activities on local, regional, national and international levels. However, environmental NGO-s already have a programme of priority activities. There is a partnership established with the Ministry of Environment, but concrete mechanisms are still missing for direct involvement of NGOs into policy/decision making.

## 5. RECOMMENDATIONS AND PROPOSALS

Environmental and health impact assessment for the NDP investigates how much priority tasks fulfill goals which are defined by the European Sustainable Development Strategy, WHO, National Economic Development Strategy, National Environmental Protection Programme and National Health Protection Programme. If a priority task contributes to the achievement of the goals the assessment is positive, otherwise negative or neutral. The overall conclusion is that the programmes within the NDP will contribute to development of the society and improvement of the welfare. Of course, a comprehensive monitoring of the implementation of the programme is needed.

NDP 2001-2006 is aimed to follow orientation towards sustainable development as defined in National Economic Development Strategy. This is clearly stated at numerous places in the document, however, there is a lack of determination of this orientation on the level of concrete priority measures. The reason could be solely administrative, due to unexperience of the authors in preparation of such a document. Nevertheless, these deficiencies of the document should be removed in the next versions of the document. As a key deficiency of the NDP we see weak justification of priority tasks based on the evaluation of alternatives.

We recommend that characteristics of sustainable development should be more strongly recognised in future discussions and determinations of national development. These characteristics are economic, social and environmental components of welfare. The orientation should be into support of usage of renewable resources and energy savings, elimination of environmental burden which present obstacles for economic development, creativeness in production of environmentally more acceptable goods, support of public and generally more effective transportation, usage of information technology, awareness building, education, and physical planning aimed at reduction of environmental and health impacts.

Concrete proposals for future work are:

1. Improvement of the NDP. This encompasses:
  - better inter-relation should be achieved between development measures/programmes and environmental and health status and resources in Slovenia
  - alternatives should be presented in analytical terms
  - environmental and health aspects/ development measures should be evaluated in the view of financial reliability
2. Integration of comments and suggestions given by the NGO representatives and others during last phases of the preparation of SEA. Comments of the syndicates are also expected.
3. Preparation of the new version of SEA according to development of the NDP.
4. Preparation of SEAs for regional development plans.
5. Preparation of the Decree on SEA which would define roles and responsibilities of the involved parties.
6. Make administrative part of SEA (as defined by methodology in [1]) and so clarify the role of MOP in the process.

## **6. REPORT ON PUBLIC PARTICIPATION IN PREPARATION OF THE ENVIRONMENTAL AND HEALTH IMPACT ASSESSMENT OF THE NATIONAL DEVELOPMENT PROGRAMME 2001-2006**

### ***Background***

Strategy on public participation in preparation of the Environmental and Health Impact Assessment of the National Development Programme 2001-2006 was prepared on the base of the Aarhus Convention principles, provisions of Environmental protection act and Directive on environmental assessment of the effects of certain plans and programmes on the environment, and draft elements for a Protocol on strategic environmental assessment.

Additionally it is based on experiences gained during the implementation of the Strategic Environmental Assessment of the Preliminary National Development Programme 2000-2001.

Due to the required high level pretentiousness of the task, the question of competency in selection of targeted segments of public was raised. Also the limited time frame for the implementation of the task dictated the pragmatism in target groups selection. However the access to information and the possibility for integration into preparation of the environmental assessment was open to all interested public (through different media), although the direct invitations for co-operation were sent to representatives of social partners, non-governmental organisations, regional / local communities and Regional Development Agencies, to those with capacities and knowledge for active and effective contribution.

### ***Strategy on public participation in preparation of Environmental and Health Impact Assessment of the National Development Programme 2001-2006 (EHIA)***

The Strategy on public Participation was prepared by the Regional Environmental Center (REC) and discussed with National Agency for Regional Development (NARD) and with the co-ordinator of the core expert group, responsible for preparation of the EHIA. Basic elements of the Strategy presented:

- background on related national and EU requirements,
- aims of public participation in preparation of EHIA,
- target groups,
- methods for public informing and invitations,
- opportunities and procedures for public participation,
- ways of handling and taking due account of public comments, preparation of the Report on public participation results and effects,
- indication of available information, indication of authorities to which comments or questions to be submitted, web site and contact persons addresses.

*(The Strategy is available in Slovenian language).*

### ***Informing and inviting public***

The public informing and inviting was performed on two levels:

1. general informing through different media with invitation for participation,
2. direct informing and invitation of selected target groups: 110 NGOs, 10 major syndicates, 100 representatives of public authorities, ministries and parliament, 300 representatives of environmental research institutions, consultant organisations, business and individual environmental experts.

The printed information leaflet was distributed in 1000 copies to different public centers: Europe Center, Regional Development Agencies, NARD, Ministry for Environment and Spatial Planning, Office for

European Affairs, Governmental Public Relation and Media Office. (The Leaflet is available in Slovenian language).

Constant availability of information is provided by three information points and web site.

### ***Aims of public participation in preparation of Environmental and Health Impact Assessment of the National Development Programme 2001-2006***

The goals were following:

- participation in preparation of general assessment of environmental and health aspects of NDP,
- participation in preparation of interaction matrices,
- cooperation in preparation of analyses and synthesis of statements,
- cooperation in preparation of final report on EHIA.

Public participation was enabled on three levels:

- first level: public was informed about possibilities for cooperation in preparation of EHIA, but did not actively respond (it was not interested for participation),
- second level: larger group of interested public contributed to the EHIA with comments,
- third level: narrow group of interested public co-operated in preparation of interaction matrices.

### ***Interested public response to invitation for co-operation:***

All together 26 interested individuals and representatives of different organisations responded positively and expressed their willingness for co-operation:

- 6 NGO representatives,
- 13 representatives of environmental institutions, consultant organisations, University and business,
- 5 representatives of Regional Development Agencies,
- 1 representative of local community,
- 1 interested individual.

There was no representative of syndicates among interested public. As the reason for their absence they indicated the lack of experts to be able to contribute to the topic and the lack of time. Similar to many other organisations and individuals the syndicates expressed their interest to get the actual follow-up information about the final EHIA.

### ***Procedurse and course:***

#### ***First preparatory meeting***

On 14th of September the first preparatory meeting was held for the first group of interested public representatives, that expressed their intention to co-operate in preparation of interaction matrices – on the 3rd level. The aim of the meeting that was facilitated by the co-ordinator of the core expert group, was to present methodology for preparation of EHIA, the recent work and achievements, and the possibilities and ways for co-operation. During the discussion the agreement was reached on integration of interested public representatives into enlarged expert group that will work on interaction matrices for EHIA.

#### ***Workshop 1 on interaction matrices***

Enlarged expert group, consisting of members of core-expert group and representatives of interested public worked on compilations of individual matrices. On the base of common discussion the final matrices for the programme: *Economic Infrastructure and quality of living* were prepared, and the agreement was reached on follow-up work of the expert group.

### Second preparatory meeting

On 4th of October 2001 the second preparatory meeting was held in Center Europe with the group of 10 individuals and representatives of different organisations who expressed their interest for participation on the second level – with contributions to EHIA with their comments (second public group).

The meeting agenda was similar to the one for the first preparatory meeting. The co-ordinator of the core expert group discussed with participants possibilities and ways to contribute to the EHIA and NDP with comments.

### Workshop 2 on interaction matrices

On 11<sup>th</sup> October 2001 the enlarged expert group, consisting of members of core-expert group and representatives of interested public continued their work on compilations of matrices. Five final matrices were prepared for all priority programmes of the National Development Programme, that served as a base for final report on EHIA of NDP.

### Follow-up activities

Before the conclusion of the task two more workshops (11<sup>th</sup> and 15<sup>th</sup> October) were executed. Both events were aimed to continue the work on matrices and to gather comments to the NDP.

On the base of workshops the draft EHIA was prepared and put on web site. All experts and representatives of public that participated in the process were invited for comments. Feedback comments were reviewed, appropriately considered, and put on web site.

### ***Results and effects of public participation in the preparation of EHIA***

Representatives of interested public who were involved in the process, significantly contributed to discussions, clarification of formulations and to final assessment. Due to the time frame limitations of the project that did not allow deeper discussions in some cases where opinions were different, statements remained dissenting. All comments were put on web site and form a base for consideration in follow up activities on NDP 2001-2006.

If we consider the relatively high level of professionalism required for preparation of the Assessment, the weak public participation tradition in Slovenia and lack of experiences, we can evaluate public participation in this specific case as successful. The majority of involved representatives of interested public actively and constructively contributed to final EHIA.

On the other hand the lack of interest expressed by media was surprising. Majority of them did not publish the article on public participation in preparation of EHIA of NDP, that was edited by Slovenian Press Agency on the base of the REC's article. At the conclusion of the project two more articles was prepared by the REC and by one of environmental NGOs that was involved in the process.

In spite of deficiencies and obstacles this experience means a significant step forward in establishing partnerships between the state and civil society, regional actors and social partners. It will significantly influence the development of the national policy development on the area of public participation in preparation of plans, programmes and specific activities. It will also contribute to higher quality of the NDP 2001-2006 and raise the commitment for its implementation.

With its decision on executing the EHIA the Agency for Regional Development of RS enabled a step forward in gaining new experiences on the field of Strategic Environmental Assessment and with that it enabled Slovenia to join those candidate countries where similar processes are going on, to exchange experiences and to form comparative future directions in SEA.

## 7. SOURCES

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- [1] B.Kontic et.al: Trajnostno regionalno razvojno nacrtovanje, Zbornik rezultatov projekta, Regionalni center za okolje za srednjo in vzhodno Evropo, Ljubljana, 2000, ISBN 961-90150-2-9
- [2] Vkljucevanje zdravstvenih vidikov v strateške presoje vplivov na okolje 1.Faza: Formiranje multidisciplinarne ekspertske skupine, Metoda dela, Institut "Jožef Stefan" in Zavod za zdravstveno varstvo Ljubljana, IJS-DP- 8439, julij 2001
- [3] J.Marušič: Strokovne podlage za izdelavo predpisa o podrobnejši vsebini in metodologiji za izdelavo študije za celovito presojo vplivov na okolje, Gradivo za razpravo, Inštitut za krajinsko arhitekturo, Biotehniške fakultete Univerze v Ljubljani, 18.1.1994
- [4] R.Therivel, E.Wilson, S.Thompson, D.Heany and D.Pitchard: Strategic Environmental Assessment, Earthscan, London, 1992
- [5] R.Therivel, M.R. Partidario: The practice of Strategic Environmental Assessment, Earthscan, London, 1996
- [6] M.R. Partidario, R. Clark: Perspectives on Strategic Environmental Assessment, Lewis Publishers, London, 2000
- [7] J.Marušič et. al: Strokovne podlage za določitev vsebine in metodologije izdelave študij ranljivosti okolja, Katedra za krajinsko arhitekturo in EC SEPO pri Institutu "Jožef Stefan", Ljubljana, april 1993
- [8] DGXI: A Handbook on Environmental Assessment of Regional Development Plans and EU Structural Funds Programmes, august 1998
- [9] Directive 2000/4/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programs on the environment
- [10] M.R.Cooke: Experts in uncertainty, Opinion and subjective probability in science, Oxford University Press, New York, 1991
- [11] MEOR: Nacrt priprave Državnega razvojnega programa 2002-2006, Ljubljana 10.8.2000
- [12] Conclusions on International Workshop on Public Participation and Health Aspects in Strategic Environmental Assessment, REC, 2000