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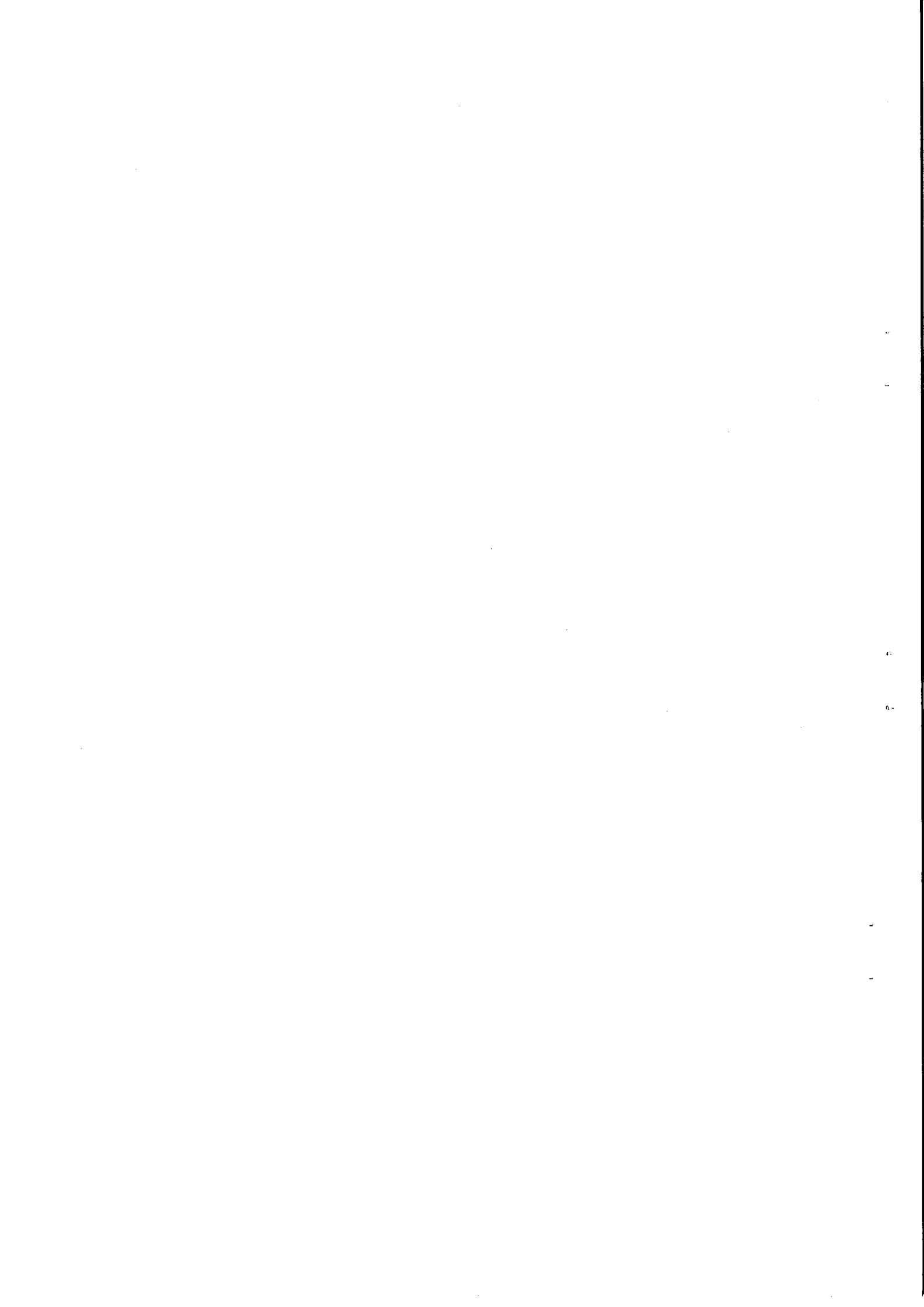
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Conservation policy and the regional economy: the regional economic impact of Natura 2000 conservation sites in Austria

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Abstract

The European Union programme Natura 2000 aims at the creation of a network of Natura 2000 conservation areas in all EU member countries. Conservation areas are chosen on scientific evidence. Public expenditure for the realisation of the European initiative Natura 2000, in Austria, can broadly be estimated to amount to € 75 million (range € 30 million to € 115 million) for their establishment as one-off expenditure, while annual expenditure might amount to € 10 million (range € 8 million to € 13 million) for the conservation and maintenance of around 160 conservation areas. Significant positive regional economic effects such as value added and employment can be connected to such public expenditure.

By the example of four selected model regions in Austria (Waldviertel, Steinfeld, Verwall, Karwendel), it can be demonstrated that the establishment of Natura 2000 conservation areas leads to at least small positive economic implications (local and regional value added, increased employment) which means that regions can benefit from the establishment of a Natura 2000 protection area. However, in single cases of land use conflicts, there might also be negative economic effects.

The main regional development opportunities are in the fields of tourism as well as (to a smaller extent) in agriculture, forestry, hunting and fisheries. Such opportunities do not only depend solely on the establishment of a protected area, the realisation of a Natura 2000 site can initialize and support the regional economic development.

The most essential recommendation for conservation policy is that instruments for information, compensation and financial support have to be expanded and adapted to the great importance of the Natura 2000 program and its agenda.

Key words: Regional economic impact, multiplier effects, stakeholders' participation, conservation policy, Natura 2000.

1. Introduction

The European Natura 2000 project is one of the most important initiatives of nature conservation policy that has been established. It is the first time that protected areas are selected solely on the basis of natural science and within a standardised international (European) framework which includes the Council Directive on the conservation of natural habitats and of wild fauna and flora. Every member state of the European Union (EU) is bound to legal commitments in establishing

and maintaining Natura 2000 conservation areas. Such a broad initiative involving significant shares of each country's area (e.g. Austria, Italy, Spain) involves large amounts of public expenditure on the one hand, and on the other hand might have important regional and local economic implications.

Contrary to the importance of the Natura 2000 efforts, there are few efforts to assess the economic impact of conservation areas. While expenditure within

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the LIFE program have been evaluated regarding the number of jobs created (Lierdeman 1996; Le Block 1997), there has been no research so far, dealing with the assessment of the economic implications from a regional viewpoint, including multiplier effects and opportunities and risks connected with the realisation of Natura 2000 conservation sites.

There are of course, some studies dealing with the economic impact of national parks (for Austria: Kletzan und Kratena 1999; Schönböck et al. 1997; Getzner & Velik 1999; Getzner 2002). However, while the methodology of assessing the economic impact of Natura 2000 sites might be similar to that of national parks, it has to account for some specificity, particularly regarding lack of regional and local experience with and information about the Natura 2000 project. Thus, the assessment of economic impacts has to account for a certain (probable) range of implications by building scenarios and adequately dealing with uncertainties and lack of information.

The current paper aims at presenting the most important results of a study (Getzner et al. 2002) commissioned by the World Wide Fund for Nature (WWF Austria) and funded by the Austrian Central Bank (OeNB Vienna). The research focused on the assessment of the potential regional economic impact of Natura 2000 conservation sites in Austria. While only very few empirical results can be presented due to space restrictions, the paper concentrates first on the methodology of the economic impact assessment, and then on an extensive presentation of the summary and conclusions of the study.

The paper is structured as follows: Section 2 gives a brief overview of the implementation of the Natura 2000 directives in Austria and the state of progress in nominating conservation sites. Of particular importance is the situation in Austria's nine federal provinces all having differentiated conservation laws. Section 3.1 presents an overview of the assessment methodology used with an emphasis on the structure of the research process, the uncertainties involved, the multiplier model and the regional participatory workshops attended by regional and local stakeholders. Section 3.2 focuses on a brief presentation of the main results of four model regions. Sections 4 and 5 finally present an extensive summary and the conclusions of the study.

2. Natura 2000 in Austria

The aim of Natura 2000 is to protect and develop European natural heritage. Natura 2000 intends to set up a standardised system of protected areas for Europe. The program is undoubtedly ambitious and therefore

evoked a broad range of, partly contentious, discussions on the local, regional and national level.

Natura 2000 focuses on endangered species and habitats and therefore a specific approach was developed: Areas of specific importance for conservation of species and habitats listed in the Fauna-Flora-Habitat Directive (FFH) and the Directive for Protection of Birds are to be nominated to the European Commission by each EU member state. The member states have to take care of the positive development of these target species and habitats. The member states are responsible for the strategy of conservation (establishment of protected areas, conservation by contracts, conservation by purchase, legal restrictions, etc.), which is not specified by the European Commission.

The basis for the Natura 2000 system is two European directives, the Fauna-Flora-Habitat Directive (FFH) and the Directive for Protection of Birds. The variety of the continent's biogeographical regions required individual annexes to specify the targets of conservation. Austria is part of two of these regions: the alpine region covering the major part of the country and the continental region, which includes the outer alpine areas in the north, east and southeast of the country.

The aforementioned directives obtained legal status in Austria when Austria joined the European Union in 1995. A variety of 113 Natura 2000 sites had been nominated by October 1998. In 1999, a national evaluation of the nominations of areas in the country showed further requirements for nomination. Therefore, a new list of nominated areas was submitted to the commission of the European Union in May 2000.

Recently, a final and completed list of 164 sites has been submitted to the European Union, however, requirements for further nominations may take place in the future. The nominated areas exhibit great variety regarding size and ecosystems of the different federal provinces of Austria. For instance, Lower Austria nominated 32% of the federal province's area to be included in the Natura 2000 network of conservation areas while Upper Austria with 3.5%, Carinthia with 5.1% and Vorarlberg with 7.4%, are far below the Austrian average which is 16.12% of the country's area. Furthermore, the size of the nominated areas varies considerably. The smallest is approximately 3 hectares (ha), while the largest nominated area amounts to 171,038 ha. Approximately half of all designated areas in Austria are smaller than 1,000 ha.

The research project revealed that this diversity of approaches sets different general conditions for regional economic development. The need for unification is to be seen.

3. Regional economic effects of Natura 2000 in Austria

3.1 Methodology

With respect to the natural science foundations and political debates outlined in section 2 we now turn to a description of the methodology used for assessing the regional economic implications of Natura 2000 conservation sites. Developing such a methodology has to consider the political context of establishing conservation areas. As mentioned in the introduction, particular

emphasis has to be laid on uncertainties and lack of information. Figure 1 presents an overview of the methodology including the various stages of the research process. The extent to which results of the several stages are certain is characterized in a qualitative way.

Starting with stage 1, the study first discussed the scientific and administrative regulations regarding the implementation of the Natura 2000 process. Stage 2 involved the collection of all nine federal provinces' nominations of Natura 2000 conservation sites. As already outlined (section 2), the share of total area designated as conservation sites is very different among

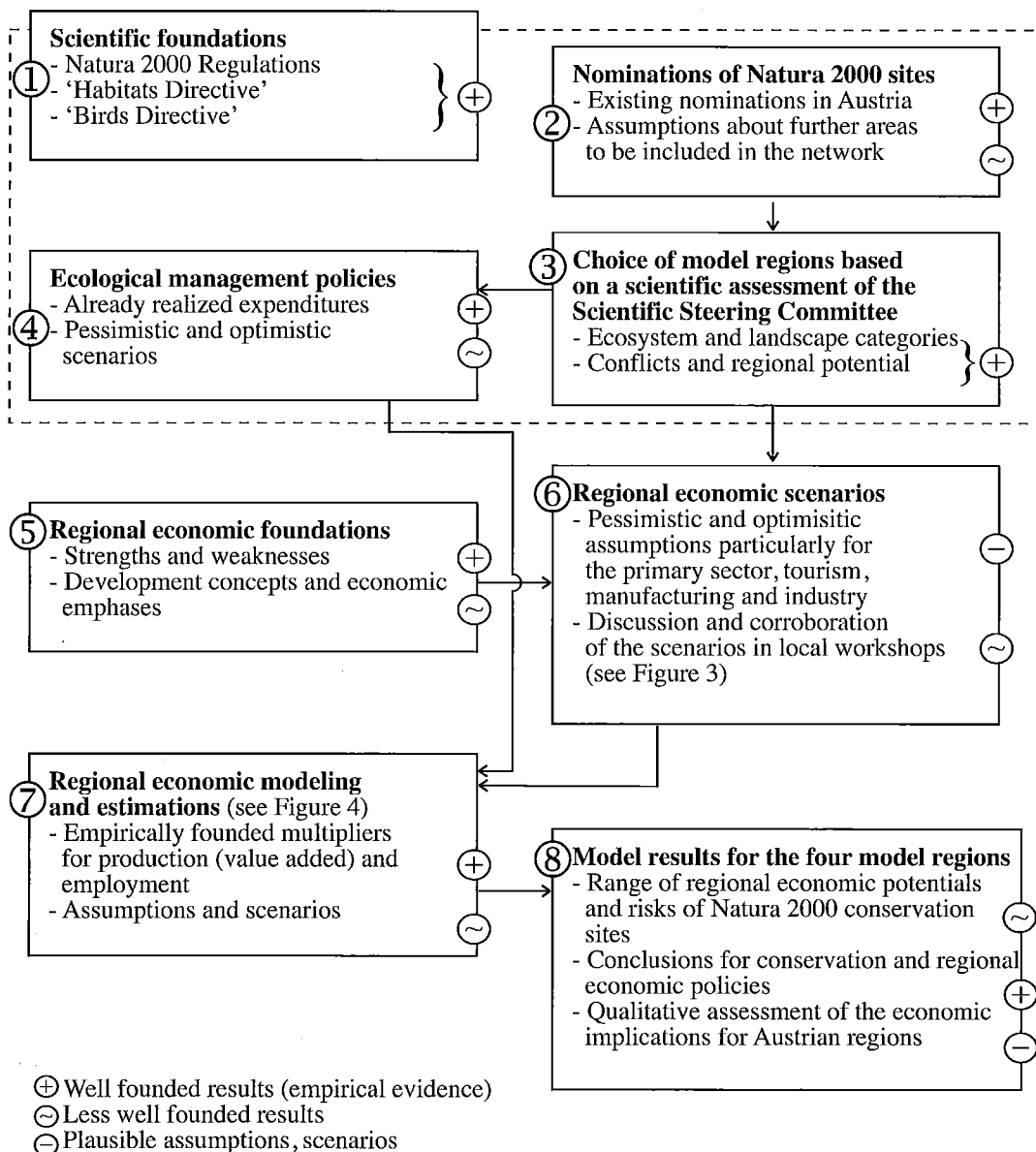


Figure 1. Methodology for assessing the regional economic implications of Natura 2000 sites in Austria.

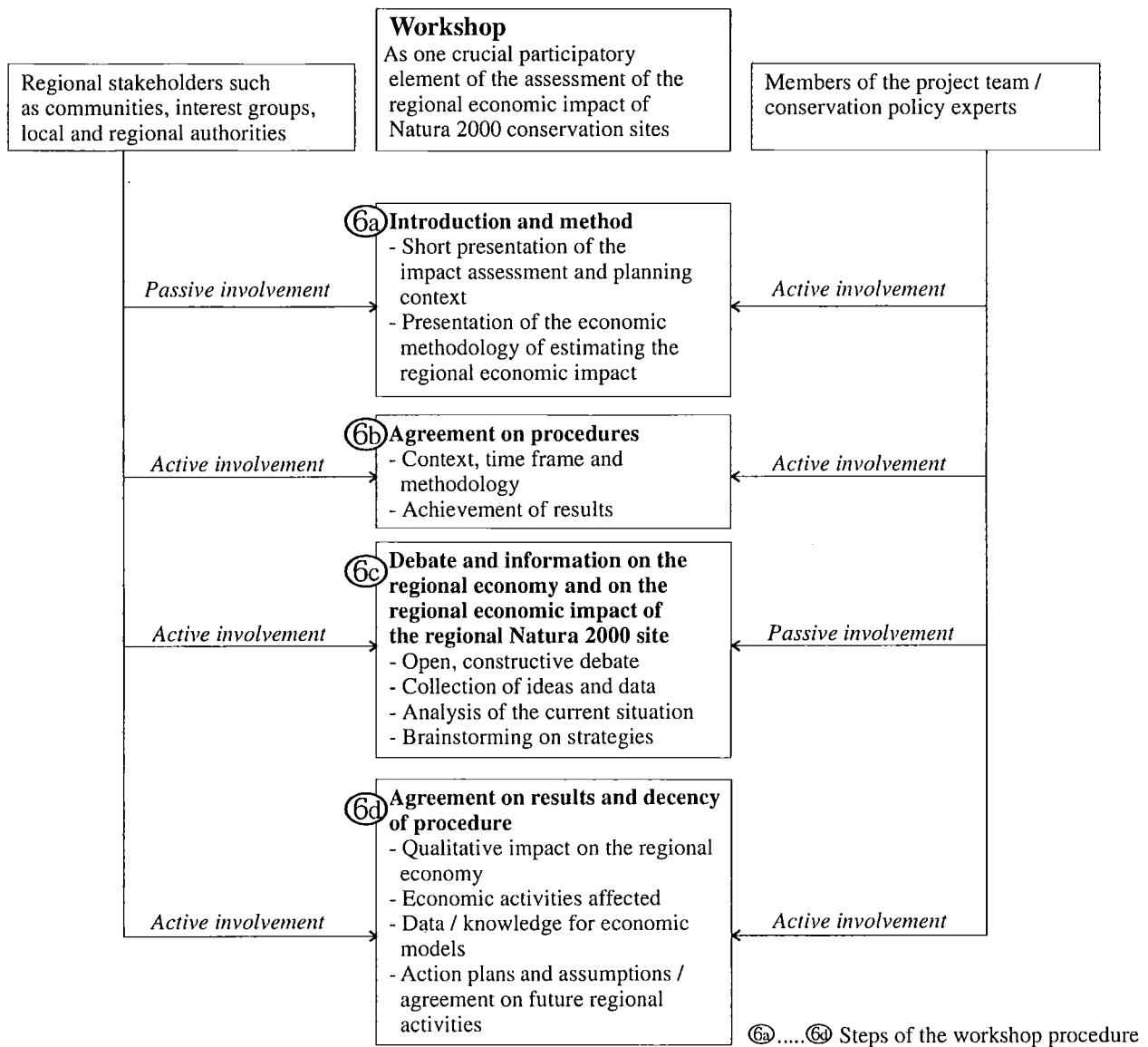


Figure 2. Participatory workshop procedure for assessing the regional economic impact of Natura 2000 sites.

Austria's provinces. However, stage 2 also involved further research as the Natura 2000 process is based on sound scientific evidence. Political arguments should not play any role in the nominations process. Thus, the research team also included additional sites which are likely to be nominated but are not on the "official" lists of nominated conservation areas due to the influence of interest groups.

As the assessment of the economic impact of all 160 Austrian Natura 2000 sites was not feasible, the research team had to focus on four model regions (Waldviertel, Steinfeld, Verwall, Karwendel), these were chosen in conjunction with the Scientific Steering Committee of the project (stage 3). The four model re-

gions comprise different categories of ecosystems and landscapes, and are different regarding potential conflicts and regional opportunities. Based on the Natura 2000 regulations with the aim to at least secure a satisfying ecological standard within the conservation area, ecological management plans and policies were drafted in order to estimate the expenditure necessary for establishing and maintaining Natura 2000 sites in the four model regions. The focus at this stage was first to draw on already realised conservation measures such as those of the Natura LIFE project (Le Block 1997), and second to formulate two scenarios (pessimistic and optimistic) regarding the expenditure and the possible regional economic impacts.

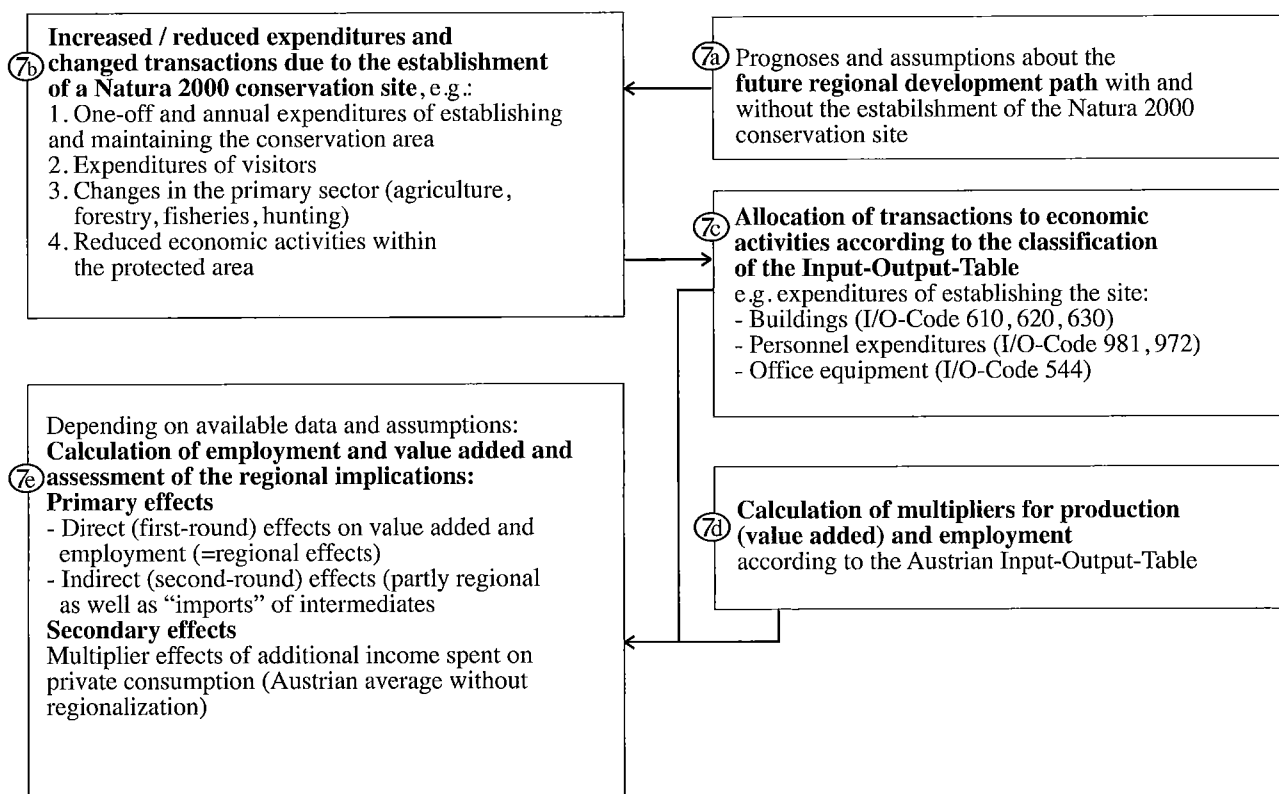


Figure 3. The regional multiplier model.

While stages 1 to 4 of the research process basically involved ecologically oriented research, stage 5 clarified the economic background of the four model regions. Based on official statistics and on local and regional development concepts, the opportunities and risks for the region due to Natura 2000 conservation sites can be assessed. Based on the results of stage 3 (selection of the four model regions) and 5, regional economic scenarios were drafted (stage 6). The research team first concentrated on all data available and calculated the regional economic impact of Natura 2000 in the four model regions. These results were then presented in regional stakeholder workshops in order to gain information and to corroborate the results achieved. As the workshop procedure is one of the most crucial methodological elements of the current projects, it is described in Figure 2 in more detail.

Participants in the workshop were invited to work in close co-operation with the chambers of commerce and agriculture, and regional and local authorities. The aims of the workshops were first to collect tacit knowledge, which does not appear in official statistics or electronic databases. In each model region, the research team had to alter the scenarios and assumptions as new information became available. Second, in order

to draft scenarios of the future development and efforts, local and regional ideas and concepts were collected. Finally, it was realised that the workshops were also of educational value to participants as the regional informational basis was broadened and a regional debate on the Natura 2000 process was initialised.

All workshops organized in the four model regions were structured similarly. Stage 6a involved a short presentation of the economic impact assessment methodology and a short overview of the results already achieved. Stage 6b consisted of an agreement on the procedure of the workshop. It is of crucial importance to agree on the time frame, procedures and the way of achieving results (*procedural rationality*; O'Hara 1996). Stage 6c was the most time-consuming as regional stakeholders were asked to discuss possible economic implications of Natura 2000 for their regions. The debate was structured according to economic sectors possibly affected. The final stage 6d summed up the results of the workshop. Participants were informed about the next steps of the research project and the Natura 2000 process. Of particular importance was the openness of the research procedure as all protocols of workshops, research reports and other materials were downloadable from the project's website.

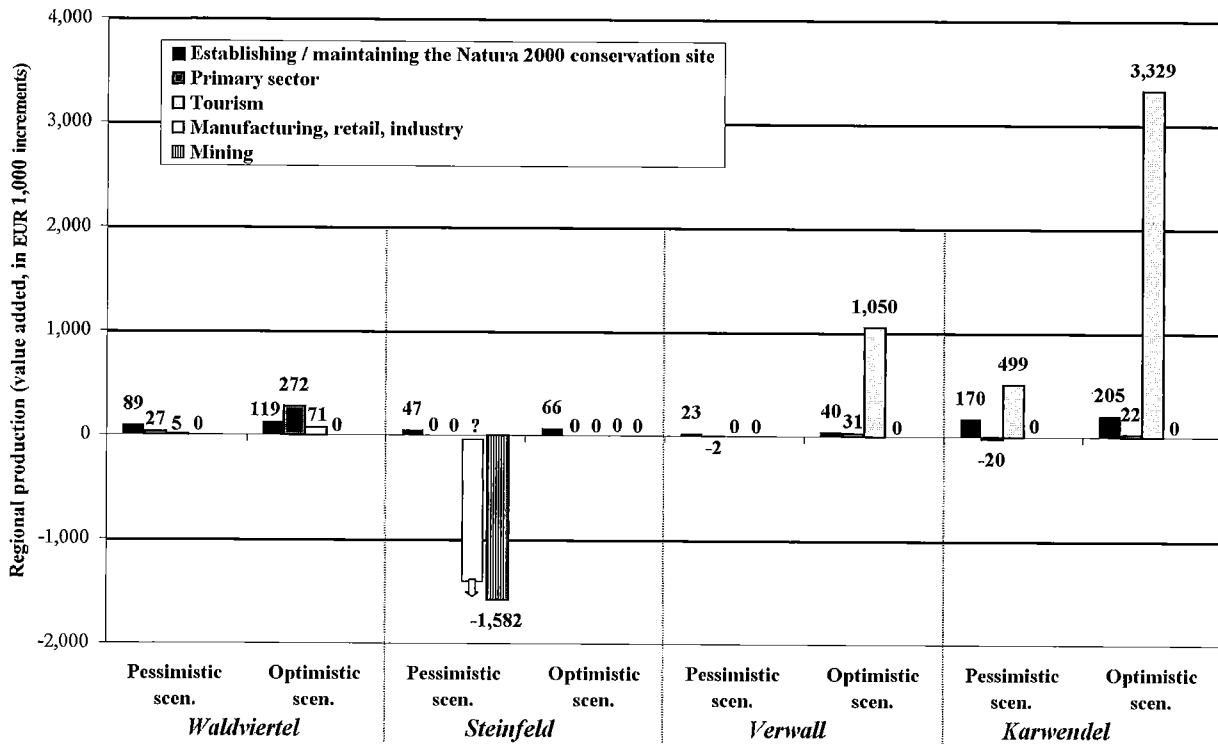


Figure 4. Regional production (value added) in four model regions due to the establishment of Natura 2000 conservation sites (annual, in € 1,000).

Stage 7 (Figures 1 and 3) is based on the workshop results and on the scenarios of the ecological management policies. Based on empirically founded multipliers for production (value added) and employment, the regional economic impact was estimated for the four model regions. Figure 3 presents an overview of the multiplier model used. The model is first based on prognoses and assumptions about the future development paths of each of the four model regions (stage 7a). Based on these development paths, changes in regional transactions (regional inflow and outflow of money; changes in transactions within the regions) were estimated. For instance, money inflows are expenditure for establishing and maintaining the Natura 2000 conservation site. Each expenditure category has to be allocated to economic activities of the input-output table for the Austrian economy (see stage 7c). Deriving multipliers for production and employment is a standard procedure (stage 7d). Results and the methodology are documented in Schneider and Getzner (2000).

Finally, stage 7e involved the calculation of all quantifiable economic implications for each of the four model regions. First, direct and indirect (primary, first-round effects) as well as secondary (second-round) effects were estimated. Second, all effects had to be regionalised, based on the economic structure of the re-

gion and data regarding the availability of goods and services within the region (propensity to import from other regions).

Again referring to Figure 1, the final stage of the research process involved summarising the results. Based on the range of results, conclusions and recommendations for conservation and regional policy were drafted, and the possible implications of Natura 2000 for all affected regions in Austria were qualitatively assessed. Particular emphasis was placed on policy issues, as is the case in the current paper. Before we turn to the conclusions of the research project, section 3.2 briefly presents the main empirical results for the four model regions.

3.2 Results for four model regions

The main empirical results for the four model regions are summarised in Figure 4 for production (value added) and Figure 5 for employment (number of jobs created). Both figures represent net regional effects.

For the Waldviertel model region, both figures show that the regional economic effect on production and value added is marginally positive. Regional production is estimated to increase by around € 100,000 (pessimistic scenario) to nearly € 370,000 (optimistic sce-

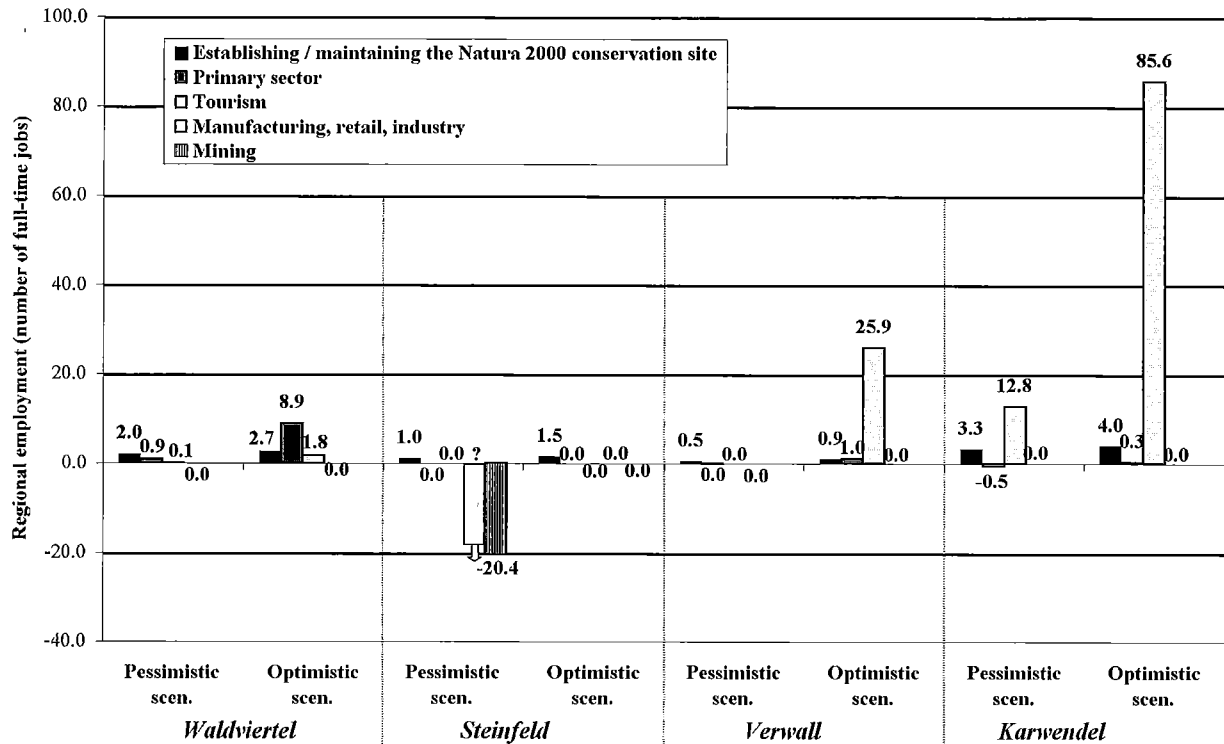


Figure 5. Regional employment in four model regions due to the establishment of Natura 2000 conservation sites (annual, number of full-time jobs).

nario). Corresponding employment effects, are the creation of 3 to 14 full-time jobs. As the Waldviertel is a remote area with an unsatisfactory economic structure and heavy dependence on the primary sector, the main regional opportunities can be seen in eco-labeling of primary sector production, particularly agricultural products and ecologically grown fish (carp).

The Steinfeld Natura 2000 conservation area lies in a region with a large industrial and service sector. Parts of the conservation site are in direct conflict with economic development. Assuming no solution to the conflicts between conservation measures and economic development (enlargement of industrial areas, mining of gravel), the regional economic impact can be significant (pessimistic scenario). While the reduction in production and employment in the mining sector can be estimated to amount to around € 1.6 million (with a corresponding loss of around 20 full-time jobs), effects on the industrial and service sector remain quantitatively unclear. Even if conflicts can be resolved (e.g. by sufficient compensation payments and enlargement of industrial areas in other parts of the region), there are only small positive economic implications (optimistic scenario). As tourism and agriculture do not play any significant role in the regional economy, the only inflow of money is the expenditure for establishing the conservation site.

Turning to a model region with an important tourism sector, the Verwall conservation area could offer significant opportunities for further development of the region. From a pessimistic viewpoint, a small positive effect might be expected, while the optimistic scenario shows the potential for regional development. While activities during the winter (skiing) are a major attraction for visitors, tourists in summer are rare. Making the region more attractive for summer tourists e.g. by a Natura 2000 label, could lead to additional regional production of approximately € 1 million and to an increase in the number of full time jobs by more than 27.

Finally, the example of the model region Karwendel indicated the potential of eco-labeling. The marketing strategy of the region is already oriented towards ecotourism (Alpenpark Karwendel). An additional ecolabel, widely known, such as "Natura 2000", can be assumed to further increase the number of visitors to the region. Production could be increased to € 3.3 million corresponding to 86 full-time jobs.

4. Summary

The European Natura 2000 project is one of the most important initiatives of nature conservation policy. It is

the first time that protected areas are selected solely on the basis of natural science and within a standardised international (European) framework which includes the Council Directive on the conservation of natural habitats and of wild fauna and flora.

Such a European initiative is of significant importance for Austria, as a one-off expenditure for establishing the conservation areas (supposedly 160 Austrian Natura 2000 areas). It can broadly be estimated to amount to € 75 million (range between € 30 million to € 115 million) while yearly expenditure can amount to € 10 million (range € 8m to € 13m). There is certainly the possibility that expenditure might be higher particularly in the case of more stringent restrictions regarding land use in the protected areas or also in the case of higher compensation payments, as the case studies of Nature 2000 areas in the Northwestern "Waldviertel" and the Lower Austrian "Steinfeld" have exhibited.

The aim of the research project was first, to assess and quantify the regional economic effects (implications) of the establishment of Natura 2000 areas in Austria regarding regional value added and employment. The second aim was to draw conclusions and recommendations for conservation policy but also for economic and regional policy.

It has been hypothesised that the establishment of Natura 2000 areas might have significant implications for the regional economy. Such expectations can partly be confirmed on the basis of the potential regional economic implications in the four model regions selected for the concrete assessment of economic effects. While in the regions Waldviertel, Verwall and Karwendel there are potential economic effects ranging from slightly positive to significantly positive, the model region Steinfeld clarified potential conflicts between conservation policy targets and economic interests (e.g. location of production facilities). Such negative effects might be significant in a "pessimistic scenario".

However, the assessment of regional economic implications depends on assumptions about the future development paths as well as on the actions taken by regional stakeholders which can only be modeled by means of different scenarios (problematic quantification of assumptions).

The following results can be summarised based on the current study:

1. It is difficult to generalise the regional economic effects of establishing Natura 2000 areas, as regions differ in terms of economic structure as well as demographic and economic dynamics. However, slightly positive regional economic effects can be expected (value added and employment), with the exception of certain circumstances and regions with significant land use conflicts. The current research shows that:

- The primary sector (agriculture, forestry, hunting and fisheries) will only be slightly affected because potentially negative impacts (which might be significant from an individual farmer's or company's viewpoint) will be compensated within contractual agreements between the affected economic subjects (farmers, companies) and nature protection authorities. Such contractual and compensation schemes are central assumptions of the current project. However, the primary sector only plays a marginal role compared to other economic activities (tourism, manufacturing, industry). Negative effects in the primary sector might be important for the regional acceptance of the establishment of nature protection areas, but even in case of uncompensated negative effects overall regional economic effects are likely to be positive due to significantly positive implications for other economic activities.
- Some regions exhibit significant potentials for increasing value added and employment by means of ecologically and regionally oriented labeling of agricultural and particularly tourist products (destination management). Regions with a satisfactory tourist infrastructure can be expected to benefit to a larger extent. In regions where the quality of tourism services is below average only co-ordinated activities of all regional stakeholders might open additional opportunities for regional development. Establishing Natura 2000 areas without additional and coordinated efforts might not exhibit any significant positive implications in such regions.
- Expenditure for establishing and maintaining the Natura 2000 areas (one-off and yearly expenditure) do not greatly contribute to significant regional economic effects because they are low compared to other potential regional transactions. However, expenditure by the provincial government, the central government or the European Union can cause an initializing effect for regional economic development.
- Effects on handcraft, manufacturing, trade and industry will be insignificant, except for individual regions where land use conflicts may be an issue, this could lead to potentially significant, yet not quantifiable negative effects.

2. Potentially positive regional economic effects essentially depend on:

- The portfolio of services that a particular region can offer. The smaller the share of imported services necessary to establish the protected area, the higher value added and employment effects will be.
- Initiatives by regional development policy that will be undertaken. The establishment of a protected area can be an important step in regional development.

- The public opinion and individual evaluation regarding the Natura 2000 conservation initiative, i.e. the extent to which the opportunities offered by Natura 2000 will be recognised. A positive public perception regarding Natura 2000, especially in tourism regions appears essential for the future competitiveness of the region. The Natura 2000 label can be regarded as a unique selling proposition (USP).
- The formulation, stability, clarity of and confidence towards the legal and political framework. Of particular importance is the participation of stakeholders in drafting management plans for the establishment of the protected areas.
- The extent to which protected areas currently exist in a particular region and identifying which concrete changes and adaptations have to be made for the establishment of the Natura 2000 conservation area in the region.

3. In general it can be concluded that public expenditure for establishing and maintaining Natura 2000 areas is highly effective, regarding regional value added and employment.

- About 50–70% of one-off expenditure by the provincial government, the central government or the European Union for establishing Natura 2000 areas, are direct inflows and thus increase demand for local and regional products and services.
- 80% to 100% of annual expenditure increases regional value added and employment.

4. The chosen methodology of a regional economic analysis based on: multipliers for regional value added and employment, additional information drawn from workshops (with regional stakeholders), supplementary research and the building of scenarios to complement the database, have all proven to be reliable and valid for fulfilling the targets of the research project. In particular, workshops with regional stakeholders provided information that is otherwise not available in published form or electronic format.

5. Conclusions

On the basis of the results summarised above, the following conclusions can be drawn:

1. The regional economic implications of Natura 2000 areas, strongly interact with regional development concepts and are based on such concepts. Close co-operation between regional representatives and stakeholders (local and regional economic policy, nature protection policy, industrial locations policy) is essential to recognise opportunities offered by a Natura 2000 label.

2. Opportunities and possible risks are fundamentally based on regional and local activities, particularly regarding the presentation of the region as an interesting location for economic activities and as an attractive tourist destination. The establishment of a Natura 2000 area itself can be an initialising initiative, but is unlikely to generate the desired economic development on its own.

3. Due to the money inflow to the region, the establishment of Natura 2000 conservation areas can be regarded as a distributive instrument for the benefit of peripheral regions. However, the distributive effects in peripheral regions may not be great, depending on the relative importance of expenditure.

4. While the Natura 2000 project currently seems to be in progress with respect to formal and legal recognition, there is lack of concrete progress regarding conservation policy instruments (communication, information), and regional and financial policy (development of management plans, directives and frameworks, lack of public funds).

5. The current discussion of conservation policy objectives and instruments, regularly exhibits a significant lack of information of stakeholders concerned with the Natura 2000 project (particularly at a regional level). There is a high, yet unmet demand for information, and that demand for information should be satisfied appropriately. Information deficits, misleading information and uncertainties connected to lack of information can cause significant negative economic implications, such as delayed or canceled investments or locally undesired decisions regarding the location of production facilities.

6. To adequately assess the significance of the Natura 2000 project in Austria, it is important to identify the differentiated recognition of conservation policies (legal, financial and economic frameworks) of the nine federal provinces of Austria. From an economic policy viewpoint, such differentiated frameworks may lead to significant problems for companies and other economic matters (e.g. distortion of competition, undesirable competition regarding the location of production facilities).

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