Lovo, Stefania; Agostini, Paola De; Pecci, Francesco; Perali, Federico; Baggio, Michele

Working Paper
Simulating the Impact on the Local Economy of Alternative Management Scenarios for Natural Areas

Nota di Lavoro, No. 139.2005

Provided in Cooperation with:
Fondazione Eni Enrico Mattei (FEEM)

Suggested Citation: Lovo, Stefania; Agostini, Paola De; Pecci, Francesco; Perali, Federico; Baggio, Michele (2005) : Simulating the Impact on the Local Economy of Alternative Management Scenarios for Natural Areas, Nota di Lavoro, No. 139.2005, Fondazione Eni Enrico Mattei (FEEM), Milano

This Version is available at:
http://hdl.handle.net/10419/74227

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
Simulating the Impact on the Local Economy of Alternative Management Scenarios for Natural Areas
Paola De Agostini, Stefania Lovo, Francesco Pecci, Federico Perali and Michele Baggio

NOTA DI LAVORO 139.2005

NOVEMBER 2005

NRM – Natural Resources Management

Michele Baggio, Paola De Agostini, Stefania Lovo, 
Graduate students, Department of Economics, University of Verona
Francesco Pecci, Professor, Department of Economics Society Institutions, University of Verona
Federico Perali, Professor, Department of Economics, University of Verona

This paper can be downloaded without charge at:
The Fondazione Eni Enrico Mattei Note di Lavoro Series Index:
http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm
Social Science Research Network Electronic Paper Collection:
http://ssrn.com/abstract=855967

The opinions expressed in this paper do not necessarily reflect the position of Fondazione Eni Enrico Mattei
Corso Magenta, 63, 20123 Milano (I), web site: www.feem.it, e-mail: working.papers@feem.it
Simulating the Impact on the Local Economy of Alternative Management Scenarios for Natural Areas

Summary

This working paper estimates the impact on the local economy of the High Garda Natural Park of alternative management scenarios for the West Garda Regional Forest. The local economy is specialized in tourist services and strongly linked to the tourist presence and their level of expenditure. We wish to investigate the effects of the participative management strategy, which takes into account users preferences and the non-participative strategy, using the SAM multiplier analysis. The local SAM has been constructed considering three sectors: agriculture, tourism and a third aggregate sector including all the other activities. The resident population has been divided into two categories: residents employed in the tourist sector and the remaining resident population. The SAM analysis shows that the accounting representation of the local economy is meaningful and that the participative program, if chosen by the central regional management, would be the most desirable program also at the local level.

Keywords: Tourism, SAM, Multiplier analysis

JEL Classification: C63, C67

This paper was presented at the Second International Conference on "Tourism and Sustainable Economic Development - Macro and Micro Economic Issues" jointly organised by CRENoS (Università di Cagliari and Sassari, Italy) and Fondazione Eni Enrico Mattei, Italy, and supported by the World Bank, Chia, Italy, 16-17 September 2005.

Address for correspondence:
Stefania Lovo
Department of Economics
University of Verona
Via dell’Università
37129 Verona
Italy
Phone: +39 0458028523
E-mail: stefanialovo@economia.univr.it
1. INTRODUCTION

This study estimates the impact on the local economy of alternative management scenarios of the West Garda Regional Forest which is centrally managed by regional authorities located in Milan. Because the forest is part of the High Garda Natural Park\(^1\) (Figure 1), which extends over nine municipalities of the Brescia province and is managed locally, the implementation of the best management program depends critically on the impact on the local economy. The nine municipalities of the High Garda Natural Park are highly specialized in tourist services and strongly linked to the tourist presences and their level of expenditure, therefore the implementation of a new management program of the West Garda Regional Forest, affecting tourist flows, may have a significant impact on the entire economy.

This analysis is part of a multidisciplinary study which integrate the assessment and management aspects of the policy decision process in managing public goods and natural parks. In the first stage, four functions have been identified within the park area, using territorial information coming from a geographic information system (GIS); these functions are: naturalistic, protective, productive and tourist (De Agostini et al, 2005). Then the multi-criteria analysis, developed in De Agostini (2005), has identified two alternative optimal combinations of the four functions taking into consideration territorial information and information related to the preferences of park’s users, estimated using the contingent valuation method (Cooper et al, 2005a) and the travel cost valuation method (Cooper et al,2005b). One optimal combination is defined as non-participative because it involves only the preferences of central management. The other is the participative strategy which takes into account the users’ preferences as revealed by the estimated contingent prices.
We intend to simulate the effects of the participative and non-participative strategies on the entire economy of the park because what is best for the central management may not be best for the local management that is concerned with maximizing the impact on the local economy and the welfare of the local citizens. The convergence of these objectives is desirable to avoid conflicts between the central and the local management.

Figure 1 West Garda Regional Forest as a part of the High Garda Natural Park

The tool used in this study to estimate the impact on the local economy of the different management interests in the West Garda Regional Forest is the SAM multiplier analysis applied at the local level of a territory. The social accounting matrices (SAM) are adequate tools to represent the local economy. They define the relationships between local firms and households as well as the physical flows from and to the rest of the economy. They provide a direct and synthetic picture of sector
interdependencies, formation of household income, and the dependence of households on local services and productive activities.

To apply the impact analysis at a local level, we need to know with an acceptable level of precision the economic structure of the territory (Dorward et al., 2003; Bendavid-Val, 1983). The data available from official sources are not organized with the purpose of building tables of sector interdependencies and social accounting matrices at a territorial level. Therefore, the information is often not available at the level of aggregation desirable for the efficient planning of local development activities. This was the most evident constraint faced during the SAM construction.

The SAM analysis shows that the accounting representation of the local economy carries weight and that the participative program, if chosen by the central regional management, would be the most desirable program also at the local level.
As described in Figure 2, the impact analysis develops in four phases: data collection and elaboration, construction of the SAM, its balancing, and simulations. This study follows the same sequence. Section 2 describes the data required for constructing and balancing the local SAM. Section 3 describes the SAM multiplier analysis. Section 4 presents simulations and results of the impact on the local economic system of the managerial alternatives described above. Section 5 draws some conclusions.

2. THE LOCAL SOCIAL ACCOUNTING MATRIX FOR THE WEST GARDA AREA: DESIGN AND DATA REQUIREMENTS

A SAM is a tool of regional analysis providing useful guidelines for the development of a regional economy (Fannin, 2001). It is a system of social accounts which reproduces the economic flows in a particular area. The SAM describes the relevant features of the socio-economic structure and the relationships between the structure of production and the distribution of income and expenditure among households in a particular area. An estimation of the impact of public policies and the examination of the links between social and economic development is useful to support the local policy-making decision process.

A SAM is the natural extension of the input-output model. It includes inter-industry transactions, payments of productive factors, household expenditure, income transfers, government expenditure and transactions with the rest of the economy, defining the circular flows of income within the economic area of interest.

The most evident limitation of this powerful instrument is represented by the scarcity of available information at the regional and local level that is necessary to build a SAM. To describe the High Garda Natural Park’s economy we used a simplified SAM which
still reflects the structural characteristics of the local economy necessary to estimate the impact of a change of the park management strategies on the local economy.

Three sectors have been considered: agriculture, tourism and a third aggregate sector including all the other sectors such as industry, construction, commerce and other relatively less important economic activities. Our SAM considers only one social institution, the household, and gives less importance to savings and capital. The structure is reproduced in Figure 3 while Box 1 describes the SAM contents.
<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Tourism</th>
<th>Other sectors</th>
<th>Labor</th>
<th>Capital</th>
<th>Residents</th>
<th>Rest of the economy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Domestic consumption of local agricultural products</td>
<td>Total sales of the agriculture sector</td>
</tr>
<tr>
<td><strong>Tourism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Expenditure within the park area by resident tourists</td>
<td>Total sales of the tourist sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tourist expenditure within the park area by non-resident tourists</td>
<td>Total sales of other sectors</td>
</tr>
<tr>
<td><strong>Other sectors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Exported” intermediate and final products and local services</td>
<td>Total labor of residents + labor of non-residents employed in local firms</td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Income of residents employed in non local firms, in health and education sectors</td>
<td>Total employed capital in local firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capital</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Labor income</td>
<td>Other income</td>
</tr>
<tr>
<td><strong>Residents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rest of the economy</strong></td>
<td>“Imported” intermediate goods</td>
<td>“Imported” intermediate goods</td>
<td>“Imported” intermediate goods</td>
<td>Non resident workers employed in local firms</td>
<td>Capital supply</td>
<td>Domestic consumption of “imported” goods and services and savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Total agriculture production</td>
<td>Total tourist production</td>
<td>Total production of other sectors</td>
<td>Labor supply</td>
<td>Capital supply</td>
<td>Total residents’ consumption</td>
<td>Balancing account</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3 – The local SAM for the High Garda Natural Park
Box 1 - Description of the SAM contents:

Agriculture: includes cereals, permanent cultivations and livestock. The other productive activities and resident and non-resident consumers, demand for intermediate and final consumption of agricultural goods (in the row). The value of intermediate goods sold to firms located outside the territory of interest is included in the column ‘rest of the economy’. The column includes the consumption of intermediate goods by the agricultural sector and the value of the productive factors, labor and capital, used in the production process. Intermediate goods purchased by firms located outside the territory are listed in the column ‘rest of the economy’.

Tourism: includes services offered to the park tourists such as hotels and restaurant, food, drinks, recreational and cultural activities. Hotels and restaurants are included in the tourist sector because their returns are assumed to come entirely from tourism. The other items are partially counted because tourists are only present in some periods of the year and part of the revenue comes from local consumption.

Other sectors: includes all the other sectors in the territory like industry, construction, commercial activities, transport and so on. The main activities are commerce (wholesale and retail), construction and other professional services such as legal consulting, financial consulting, architectural, engineering and other technical activities.

Labor: includes all the professional categories of employees and self-employed. The quantity of labor employed in agriculture, tourism and other sectors is reported in the row. Resident workers employed in firms outside the territory and in the health and education sectors, which represent 5.4 per cent of the total employed population, are included in the account ‘rest of the economy’. This share of value-added is distributed among resident and non-resident households (in the column).

Capital: the total return to capital factor from the three productive activities is indicated in the row. This component of value-added is not redistributed because this factor is not relevant for the analysis (in the column). It is then included in the ‘rest of the economy’ row for the balancing of the SAM.

Residents: includes income and consumption of the inhabitants of the park area. The resident population has been divided into two categories: residents employed in the tourist sector and the remaining resident population. In the SAM, the row indicates the income composition. It consists of labor and other income, including transfers, interest, etc. Considering that other income is not relevant for this analysis, it is indicated in the column ‘rest of the economy’. Expenditure on consumption goods is indicated in the column. It is subdivided into consumption of domestic agricultural goods, tourist consumption within the park area and consumption of goods and services provided by other local firms. Savings, taxes and expenditure on consumption goods produced by non-local firms are in the row ‘rest of the economy’.


Rest of the economy: includes what is purchased and sold outside the economic area of interest, and those values which are relatively less relevant to the study but necessary for the final balancing of the SAM such as other income, savings and capital supply. The ‘rest of the economy’ row includes the amount of intermediate ‘imported’ goods, income of the non-residents employed in local firms, savings, taxes and the consumption of ‘imported’ goods and services. Intermediate and final goods consumed by non resident households and demanded by non local firms are indicated in the column. Non-resident tourists’ expenditure, other income and labor income of residents employed in firms outside the territory and in the health and education sectors are also reported.

2.1 SAM construction and balancing

The construction of a local social accounting matrix is a difficult task, mostly because of the scarcity of local statistical information organized at a local level. As a consequence the researcher is forced to use alternative and indirect sources to make hypotheses and get information about the local economic entities (Bendavid-Val, 1983).

Within the park, the national statistical office (ISTAT) identifies two local labor systems (LLS) gravitating around the municipalities of Limone and Toscolano Maderno. A local labor system is an area composed by several adjacent municipalities defined on the basis of the maximization of commuters’ flows within the same area and the minimization of commuters’ flows across different areas. The Limone LLS includes also the Tremosine municipality. The Toscolano Maderno LLS includes the municipalities of Gardone Riviera, Gargnano, Magasa, Tignale, Toscolano Maderno and Valvestino. The Salò municipality is at the center of a third LLS which includes other municipalities all outside the park. For the Limone and Toscolano Maderno LLS, we assume that most inhabitants live and work within the territory. This assumption was not extended to the Salò municipality because there is a relevant movement of workers going in and out. Statistical information on the local labor systems is not fully developed and data cannot be disaggregated either by sectors or by municipality (Faramondi and Paris, 2002). As a consequence, we use the information about local
labor systems as a comparison framework in order to evaluate the quality and consistency of the information gathered for constructing the SAM.

The productive structure of the area is mainly composed by small firms with fewer than 10 employees (96 per cent of the total firms). The employees mostly work in the tourist and commercial sectors. Their distribution within the territory shows the economic importance of Salò and Toscolano Maderno.

The economy of small municipalities which are near or belong to natural parks is often strongly linked to the tourist presence and their level of expenditure. In Limone for instance, which has about 1000 inhabitants, 70 per cent of the employees work in the tourist sector. Tourism is in fact the most important sector. It is of high quality because hotels with three or more stars are about 65 percent of the total.

Figure 4 describes data and sources used in this study for building the local SAM for the High Garda Natural Park.

Figure 4 - Sources and data used for the SAM construction
Table 1 reports the aggregate values at the sector level generated following the procedure specified in the Appendix. As expected, tourism plays a relevant role in the local economy within the park boundary.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Employed</th>
<th>Value-added</th>
<th>Sales</th>
<th>Wages and salaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism</td>
<td>1837</td>
<td>33 179</td>
<td>81 926</td>
<td>12 185</td>
</tr>
<tr>
<td>Other sectors</td>
<td>4203</td>
<td>123 939</td>
<td>398 422</td>
<td>33 245</td>
</tr>
</tbody>
</table>

Considering that the data come from many sources at different points in time, the West Garda SAM is not balanced. Table 2 presents the initial unbalanced SAM, computed using the procedure illustrated in the Appendix.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Agriculture</th>
<th>Tourism</th>
<th>Other sectors</th>
<th>Labor</th>
<th>Capital</th>
<th>Resident population</th>
<th>Rest of the economy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>382</td>
<td>281</td>
<td>1135</td>
<td></td>
<td></td>
<td>1545</td>
<td>1255</td>
<td>4597</td>
</tr>
<tr>
<td>Tourism</td>
<td>51</td>
<td>1194</td>
<td>744</td>
<td></td>
<td></td>
<td>164</td>
<td>47 111</td>
<td>49 265</td>
</tr>
<tr>
<td>Other sectors</td>
<td>567</td>
<td>3400</td>
<td>25 569</td>
<td></td>
<td></td>
<td>159 012</td>
<td>209 874</td>
<td>398 422</td>
</tr>
<tr>
<td>Labor</td>
<td>1246</td>
<td>28 905</td>
<td>78 866</td>
<td></td>
<td></td>
<td>39 199</td>
<td>148 216</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>1350</td>
<td>4274</td>
<td>45 074</td>
<td></td>
<td></td>
<td>50 698</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>180 665</td>
<td>93070</td>
</tr>
<tr>
<td>Rest of the economy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>273 734</td>
</tr>
<tr>
<td>Total</td>
<td>4597</td>
<td>81 800</td>
<td>398 422</td>
<td>185 191</td>
<td>50 698</td>
<td>113 014</td>
<td>273 735</td>
<td>390 509</td>
</tr>
</tbody>
</table>

We use the cross entropy method (CE) to correct for this problem as illustrated in detail in the following section.
2.2. SAM balancing using the cross entropy method

The cross entropy method estimates a balanced and consistent matrix starting from an original unbalanced social accounting matrix using information available both at micro and macroeconomic levels (Robilliard and Robinson, 1999 and Robinson et al, 1998). This approach is based on Shannon’s information theory (1948) lately applied to statistical inference by Jaynes (1957). In 1994 Golan, Judge and Robinson used this approach to estimate the coefficients of an input-output table. The objective is to obtain a new set of coefficients close to those previously available but incorporating updated or additional information about economic aggregates such as value-added or consumption.

Two types of information are considered. The first type of information comes from the observed samples, where weights (coefficients) are computed embodying several demographic information. Weights represent the starting point of the estimating process. The second type of information comes from aggregate sources, such as national accounts. They are provided as aggregate values or weighted averages of the distribution of observed variables among observed households.

The High Garda Natural Park SAM has been balanced fixing the rows and columns sums, except for the tourist account, to their initial average value. The tourist row sum has been fixed to the column sum value because of insufficient information on the tourist expenditure reported in the row. The total value-added produced by the industry and services sectors has been fixed to that found in the survey on the local labor systems. We could not use this information for the SAM construction because it refers only to aggregate values (Faramondi and Paris, 2002). However we adjust the content of the value-added cells using the aggregate data available at the local labor system level.

From the initial SAM we obtain the column coefficients $A_{i,j}$:
\[ A_{i,j} = \frac{t_{i,j}}{y_j} \]

where \( t_{i,j} \) represents the cell in the \( i \)-th row and the \( j \)-th column and \( y_i \) is the total sum of the \( j \)-th column.

The estimation process minimizes the cross-entropy distance between the new estimated coefficients and the previous ones:

\[
\min I = \left[ \sum_i \sum_j A_{i,j} \ln \frac{A_{i,j}}{\bar{A}_{i,j}} \right]
\]

subject to the following constraints:

\[
\sum_j A_{i,j} y_j^* = \frac{y_j^* + y_i^*}{2}, \quad i = 1, \ldots, n - 1
\]

\[
\sum_j A_{t,j} y_j^* = y_t^*, \quad t = \text{tourist}
\]

\[
\sum_i \sum_j G_{i,j} T_{i,j} = VA
\]

\[
0 \leq A_{i,j} \leq 1
\]

where \( \bar{A}_{i,j} \) and \( A_{i,j} \) are respectively the prior and the new estimated SAM coefficients, \( y^* \) are rows and columns sums of the \( n \) accounts, \( T \) is the initial SAM which is multiplied by matrix \( G \) which has 1 in the value-added cells (labor and capital) of each sector (agriculture, tourism and other sectors) and 0 elsewhere. \( VA \) represents the value-added produced by industry and services sectors found in the survey on the local labor systems. An analytic description of the complete model, where row and column sums involve errors in measurement, is presented in Robilliard and Robinson (1999) and Robinson and El-Said (2000). The balanced SAM for the High Garda Natural Park is reported in Table 3.
### Table 3 – The local SAM balanced (in thousands of euros)

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Tourism</th>
<th>Other sectors</th>
<th>Labor</th>
<th>Capital</th>
<th>Resident population</th>
<th>Rest of the economy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>382</td>
<td>268</td>
<td>905</td>
<td></td>
<td></td>
<td>1628</td>
<td>1415</td>
<td>4597</td>
</tr>
<tr>
<td>Tourism</td>
<td>52</td>
<td>1222</td>
<td>858</td>
<td></td>
<td></td>
<td>227</td>
<td>79442</td>
<td>81801</td>
</tr>
<tr>
<td>Other sectors</td>
<td>566</td>
<td>3180</td>
<td>18888</td>
<td></td>
<td></td>
<td>158843</td>
<td>216428</td>
<td>397905</td>
</tr>
<tr>
<td>Labor</td>
<td>1246</td>
<td>30829</td>
<td>110487</td>
<td></td>
<td></td>
<td>42419</td>
<td>184981</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>1351</td>
<td>4610</td>
<td>66621</td>
<td></td>
<td></td>
<td>72582</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>180350</td>
<td>100871</td>
</tr>
<tr>
<td>Rest of the economy</td>
<td>1001</td>
<td>41691</td>
<td>200146</td>
<td>4631</td>
<td>72582</td>
<td>120524</td>
<td>440575</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4597</td>
<td>81801</td>
<td>397905</td>
<td>184981</td>
<td>72582</td>
<td>281222</td>
<td>440575</td>
<td></td>
</tr>
</tbody>
</table>

The balanced values in Table 3 are similar to the original values and the resulting balanced SAM is now ready for the impact analysis.

### 3. THE MULTIPLIER ANALYSIS

We use the SAM multiplier analysis for simulating the impact on the local economic system of changes in relevant exogenous policy variables as a result of the interrelations existing among revenue, income and expenditure flows of households and firms. The matrix of multipliers obtained from the SAM captures both the direct and indirect effects on production and income and also the circular effects that are the result of the circular flow of income within the local economy.

The SAM multiplier analysis considers prices as exogenously fixed and implies the following behavioral assumptions:

1. since prices are given, it is not possible to estimate the impact of price variations and the conclusions must be drawn in terms of quantities;

2. functional relations use fixed technical coefficients of Leontief technologies and it is therefore not possible to consider changes in the productivity of labor and capital;
3. there are no bounds on goods supply because supply satisfies demand by assumption.

In developing a SAM multiplier model, the first step is to decide which accounts should be exogenous and which are endogenous on the basis of the specific aim of the analysis (De Janvry and Sadoulet, 1995, Pyatt and Round, 1979). Given that in our case the study evaluates the impact of environmental policies on the local economy, the account ‘rest of the economy’ is considered exogenous.

<table>
<thead>
<tr>
<th>Endogenous accounts</th>
<th>Total</th>
<th>Exogenous accounts</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Agriculture</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>T_{ij}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T_i</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL EXPENDITURE</th>
<th>Y_1</th>
<th>Y_2</th>
<th>Y_3</th>
<th>Y_4</th>
<th>Y_5</th>
<th>Y_6</th>
<th>Y_7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y_X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5 - Representation of the SAM model

The matrix of the endogenous transactions, T, can be divided into four sub-matrices. In Figure 5, the matrix T_{ij} is the matrix of transactions which is presented also in the input - output model. The matrix \( T_{ij} \) represents the composition of the value-added in different sectors of the economy; the matrix \( T_i \) represents the distribution of the value-added to the endogenous institutions and the matrix \( T_i \) corresponds to the expenditures of the endogenous institutions. The column vector X represents the injections from exogenous to endogenous accounts. We can simulate shocks on the endogenous
variables by modifying the elements of vector $X$. $L$ corresponds to the transactions between exogenous accounts and the row vector $E$ shows the leakages from the endogenous to the exogenous accounts. The column vector $Y$ and $Y_X$ represents the total income and the total expenditure of endogenous and exogenous accounts respectively. Considering the matrix of endogenous accounts $T$, we divide the elements in each column by its column total. We obtain the matrix of coefficients $A$ and inverting the matrix $(I - A)$, where $I$ is the identity matrix, we obtain the SAM multiplier matrix, $M$. Similarly we divide each element of the row vector $E$ by its column total to obtain the vector of coefficients $B$. Impacts on total output and income are derived using the following expressions:

The vector of impacts: $\Delta Y = (I - A)^{-1} \Delta X$;

The leakages from endogenous to exogenous accounts: $\Delta L = B \Delta Y$;

The SAM multiplier matrix: $M = (I - A)^{-1}$;

The vector of exogenous shock: $\Delta X$.

In the High Garda Natural Park case $X$ is the account ‘rest of the economy’ and $\Delta X$ corresponds to changes in the final demand for agricultural products and the tourists’ expenditure of non residents. The expression describing the impact on leakages $\Delta L$ must hold with equality because in a SAM framework total injections from exogenous accounts must be equal to total leakages from the endogenous to the exogenous accounts. In this expression $B$ is the vector of coefficients which represents what the exogenous accounts receive from the endogenous ones.
4 SIMULATIONS AND RESULTS

This section estimates the impact of both the participative and non-participative management policies of the West Garda Regional Forest on the local economic system.

In line with the analysis developed in the previous study, Table 4 describes the following three scenarios:

- benchmark – the actual forest plan;
- scenario A – non-participative regional management program;
- scenario B – participative regional management program.

Note that in scenario B, the public manager based in Milan takes formally into consideration the preferences of the users as revealed by the estimated contingent prices.

Table 4 - Combinations of functions and their description

<table>
<thead>
<tr>
<th>Functions</th>
<th>Description</th>
<th>Benchmark Scenario Actual forest plan (%)</th>
<th>Scenario A Non-participative (%)</th>
<th>Scenario B Participative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic function</td>
<td>Conserving nature, wildlife and ecosystem</td>
<td>26</td>
<td>65</td>
<td>94</td>
</tr>
<tr>
<td>Productive function</td>
<td>Providing market with timber and non-timber products: fodder, mushrooms, resins, etc.</td>
<td>21</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Protective function</td>
<td>Preserving structural features of the canopy and territory</td>
<td>26</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Tourist function</td>
<td>Providing tourist-recreational services: sports, outdoor activities (hunting and fishing, horse riding, biking, etc.)</td>
<td>27</td>
<td>31</td>
<td>2</td>
</tr>
</tbody>
</table>

In the benchmark scenario, 27 per cent of the park is devoted to the tourist function while 26 per cent is devoted to the naturalistic function. If the adopted management policy follows scenario A, then the importance of the naturalistic function increases to 65 per cent while the tourist function does not change significantly. On the other hand,
if the adopted policy follows scenario B then the importance of the tourist function reduces to 2 per cent and the park mainly offers the naturalistic function in up to 94 per cent of the total area. In both scenarios, protective and productive functions declines to 2 per cent.

As it is reasonable to expect, these scenarios attract different flows of tourist and have a differential impact on agriculture as they imply different uses of land. With respect to the participative program, the non-participative management plan places more importance on the tourist function. Note that more hectares allocated to the tourist function do not necessarily mean higher levels of tourist flows. The tourist function embodies recreational services, sports and natural activities such as fishing, biking and horse riding. These are all anthropic interventions which according to the contingent evaluation analysis seem to be little desired by visitors. Tourists prefer this area to be allocated at naturalistic aims where human interventions are reduced to vegetation and fauna habitat maintenance. For this reason, we simulate that scenario B induces a higher number of visitors than scenario A. In simulating a change in tourist flows, we must also consider that the West Garda Regional Forest is a part of the West Garda Park where most tourists are attracted by cultural and sports events, historical places, monuments and so on. Changes in tourist flows depend also on the efficiency of the future developments in the parks potentialities. Therefore we simulate three possible changes in tourist flows, affecting tourists’ expenditure for each scenario.

Agricultural activities within the park area are partly linked to the productive function of the West Garda forest. Both scenarios devote only 2 per cent of the territory for productive ends implying a reduction in the land used for agricultural purposes. As a consequence, agricultural activities decline. In the participative scenario (A) the impact
is smaller because a larger area is allocated to the naturalistic function. Note that while in tourist areas there is negligible agricultural activity, in naturalistic areas a certain level of agricultural activities is maintained. Therefore we simulate a negative change in the agriculture sector of about 10 per cent in scenario A and of about 5 per cent in scenario B.

Table 5 reports the SAM multipliers for the High Garda Natural Park corresponding to changes in the non-resident final demand for agriculture products and tourist services.

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1.094</td>
<td>0.007</td>
</tr>
<tr>
<td>Tourism</td>
<td>0.014</td>
<td>1.016</td>
</tr>
<tr>
<td>Other sectors</td>
<td>0.377</td>
<td>0.316</td>
</tr>
<tr>
<td>Labor</td>
<td>0.406</td>
<td>0.473</td>
</tr>
<tr>
<td>Capital</td>
<td>0.385</td>
<td>0.112</td>
</tr>
<tr>
<td>Resident population</td>
<td>0.396</td>
<td>0.461</td>
</tr>
</tbody>
</table>

The Multipliers show the changes in output and income of the local sectors and resident population as a result of exogenous shocks. Looking at the tourism column each value can be interpreted as the additional output or income generated in the row account due to a one unit increase in non-resident tourist expenditure. The Multipliers show a negligible link between tourism and other local activities (0.007, 0.316) with respect to agriculture (0.014, 0.377). On the other hand, changes in the tourist sector have a larger impact on the resident population income level (0.416).

In the simulation analysis an increase in tourist flows is expected to have a greater direct impact on the tourist sector and smaller indirect effects on other local activities, because of the high share of non-resident tourists’ expenditure on the total output of the
tourist sector (Table 3). Tables 6 and 7 respectively show the simulations result expected in terms of changes in production, labor demand and incomes of the resident population.

Table 6 – Simulation results, variations in production and labor demand (in thousands of euros)

<table>
<thead>
<tr>
<th>BENCHMARK</th>
<th>SCENARIO A</th>
<th>SCENARIO B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual forest plan</td>
<td>Non-participative</td>
<td>Participative</td>
</tr>
<tr>
<td>Change in the agriculture sector (%)</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>Change in tourists’ expenditure (%)</td>
<td>0</td>
<td>+5</td>
</tr>
</tbody>
</table>

If there is no change in tourist flows, both strategies have a negative impact on the local economy caused by the shock on the agriculture sector (Table 6). However, if the adopted management policy is scenario B, the negative impact is smaller. An increase in tourist expenditure affects positively both the tourist sector and the other activities due to indirect and circular effects. The impact on the local economy generated by the adoption of scenario A is positive given the relevance of tourist sector to the local economy. On the other hand, the impact is negative for agriculture (2 per cent) and the other sectors. If the management policy is participative, in the case of a 10 per cent increase in tourist expenditure, the results are similar to those of scenario B but the negative effects on agriculture and other sectors are smaller. If the park is developed
incorporating the users’ preferences, the increase in tourists’ expenditure can be even higher. In the case of a 20 per cent increase, the effects on the local economy are markedly positive. The negative impact on agriculture is offset by the positive indirect and circular effects caused by the change in tourist expenditure.

Table 7- Simulations results, variations in resident population income level (in thousands of euros)

<table>
<thead>
<tr>
<th></th>
<th>BENCHMARK</th>
<th>SCENARIO A</th>
<th>SCENARIO B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual forest plan</td>
<td>Non-participative</td>
<td>Participative</td>
</tr>
<tr>
<td>Change in the agriculture sector (%)</td>
<td>-10</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>Change in tourists’ expenditure (%)</td>
<td>0</td>
<td>+5</td>
<td>+10</td>
</tr>
</tbody>
</table>

Results

<table>
<thead>
<tr>
<th></th>
<th>BENCHMARK</th>
<th>SCENARIO A</th>
<th>SCENARIO B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income level of residents employed in tourist sector</td>
<td>-</td>
<td>+3.18</td>
</tr>
<tr>
<td>Income level of residents employed in agricultural and the other sectors</td>
<td>44 645</td>
<td>-0.02</td>
<td>+0.12</td>
</tr>
<tr>
<td>Income level of total resident population</td>
<td>236 576</td>
<td>-0.02</td>
<td>+0.60</td>
</tr>
</tbody>
</table>

Inspection of Table 7 reveals that the impacts on the income level of residents employed in the non-tourist sector are not economically significant. If there is no change in tourist expenditure, residents face a negative but small impact in both scenarios. On the other hand, in the case of a 10 per cent increase, both scenarios have positive effects on the local population. If the participative scenario is adopted, a 20 per cent increase in tourist expenditure causes a positive impact of about 12 per cent on the income level of the resident population employed in the tourist sector.
5. CONCLUSIONS

This study analyzed the impact of the participative and the non-participative managerial alternatives of the West Garda Regional Forest on the local economy of the High Garda Natural Park, where the forest is located, using a social accounting matrix framework developed at the local level. This approach provides a comprehensive view of the local economic scenario and its basic structural characteristics. The territorial analysis allows us to understand better the social economic and environmental interactions at the local level and to verify the potential sources of conflict between the central management, having jurisdiction over the West Garda Regional Forest, and the peripherical management commanding the High Garda Natural Park.

Although the data available for the area of interest were scattered, the resulting SAM adequately represents the interactions between local economic activities and the resident population. However more and better quality data would permit a more efficient use of the model potentialities.

We simulated the impact of both the participative and non-participative optimal combinations of functions using the SAM multiplier approach that gives an immediate representation of direct, indirect and circular effects. The participative program is obtained by maximizing the manager’s revenues, taking formally into consideration the preferences of users and residents by including the prices that visitors are willing to pay for each function as weights of the objective function. The simulation analysis showed that the participative program is preferable to the non-participative program for the impact both on production and income level. It follows that the participative regional management program matches both the preferences of users and the interests of local institutions because the territory receives a larger benefit from its implementation.
However the presence of vested interests among local institutions, associations and actors may be a further source of conflict among the stakeholders. This issue will be analyzed in Baggio (2005).
APPENDIX - DATA SOURCES

In this appendix we describe the data sources used to estimate the values content in the SAM. We collected data mainly from the data bank Ionio Cineca. Local information was provided by the population census (Istat, 1991) and the intermediate census of industry and services (Istat, 1996a). From the regional statistical yearbook of Lombardy we collected data related to households’ incomes and expenditure and employers’ professional positions per each observed municipality. Information about value-added and sales of each sector was found in the economic accounts of enterprises yearbook (Istat, 1996b). The value-added produced in agriculture referred to the census of agriculture of 1991 while the agricultural standard gross incomes comes from the Inea yearbook of Italian Agriculture of 1996. Data used to determine value-added, inter-sector transactions, production, income, consumption and labor income are illustrated in sequence.

1. Value-added

The procedure used for determining the value-added at factor costs produced by local firms includes two phases. First, the number of employees by local economic activity, derived from the intermediate census of industry and services, is multiplied by the average value-added per employee, assuming that the West Garda’s firms produce a value-added similar to the average values of the Lombardy Region. The Italian national statistical office (Istat) distinguishes between firms with less than 19 employees and firms with more than 19 employees. We also adopt this classification because within the area considered there are mostly small firms (less than 19 employees). This allows us to be more precise in the estimation. During the SAM
balancing process these values have been compared with the data at the Local Labor System level. The obtained value-added is divided into labor and capital remuneration using regional average values. After having determined the amount of labor expenditure, we subtract social contributions, using percentage values calculated at a national level, in order to obtain values as close as possible to the local labor income levels. We verified the congruence between the obtained labor income and the values determined by multiplying the number of employees as derived from the population census of 1991, by the average annual income reported in the statistical yearbook of the Lombardy region. Table 8 and 9 report the values obtained. Considering that dependent employees (managers, employees and workers) represent only a part of the total number of employees, we needed to determine the income level of self-employed people. We assumed that the self-employed workers are equally distributed among sectors. Finally, we estimated the value-added produced by the agriculture sector using data from two sources: the census of agriculture and the Standard Gross Margin provided by the yearbook of Italian agriculture (Inea, 1996). For the agriculture sector the value-added is derived from the information available on gross incomes, which are close to the value-added produced by the agricultural sector (European Commission, 2002). The values obtained are reported in Table 10. The value-added have then been divided into labor and capital remuneration on the basis of the information on farm budgets collected by Inea and reported in the 1996 yearbook.
2. **Inter-sector transactions**

Given that local input-output tables are not available, the national input-output table has been used in order to define the size of inter-sector transactions under the assumption of constant proportions between the national, regional and local level. After obtaining the total transactions of agriculture, tourism and other sectors we derived the coefficients matrix referred to the intermediate transactions among the three accounts. Since firms are rather small and heterogeneous we assumed that most of the intermediate goods come from firms located outside the area of interest.

3. **Production**

In order to determine the total production of the three sectors considered in this study (agriculture, tourist and other sectors) we consider that the local sales per employee are a reasonable approximation of the average regional values, therefore we multiply average sales per employed by the number of employed, in each sector. The total production of agriculture derives from average regional values. We identified that the value-added produced by agriculture sector represents the 56 per cent of the total. These values were then compared to those obtained from the input-output table following the procedure described above.

4. **Income**

In determining the income and consumption levels of the resident population we need to make further assumptions. Since there is no local information on income and household consumption we assumed that they are similar to the regional and provincial average values. Therefore we derived the average per capita income,
labor income and the distribution of consumption expenditure as shown in Table 11. The resident population was divided into two categories: residents employed in the tourist sector and the remaining resident population. Table 12 shows the income composition of the two categories.

5. **Consumption**

Intermediate consumption of local firms’ products have been determined assuming that the small and heterogeneous local firms purchase mostly from firms located outside the territory of interest. The share of production assigned to final local consumption has been calculated by dividing final consumption by total production derived from the national input-output table (see Table 13). By distinguishing among two typologies of visitors, we calculate resident and non-resident tourist expenditure using information on daily personal expenditure obtained from the travel cost section of the West Garda Regional Forest survey. Moreover, using data on arrivals and the number of nights spent in hotels and supplementary accommodation provided by the Province of Brescia, we determine the average yearly flow of tourists (Table 14).

6. **Labor**

Estimation of labor income follows the procedure described in the ‘Value-added’ section of this appendix. The number of resident and non-resident workers in firms is calculated by comparing data from the population census and the intermediate census of industry and services. Note that the comparison is difficult because they differ both in terms of heterogeneity of units studied and also for the period they
refer to. While the population census refers to households, the intermediate census of industry and services collects information on people employed using local units as a basis.
### Table 8 – Value-added, sales and labor costs of the other sectors (in thousands of euros)

<table>
<thead>
<tr>
<th>OTHER SECTORS</th>
<th>Employed by sector</th>
<th>Value-added</th>
<th>Sales</th>
<th>Wages and salaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 FOOD AND DRINK INDUSTRIES</td>
<td>286</td>
<td>11 074.12</td>
<td>31 461.52</td>
<td>4147.89</td>
</tr>
<tr>
<td>17 TEXTILE INDUSTRIES</td>
<td>66</td>
<td>2199.77</td>
<td>6472.96</td>
<td>870.60</td>
</tr>
<tr>
<td>18 CLOTHING INDUSTRIES</td>
<td>56</td>
<td>1635.86</td>
<td>2568.24</td>
<td>866.45</td>
</tr>
<tr>
<td>20 WOOD AND WOOD AND CORK PRODUCTS</td>
<td>71</td>
<td>1587.74</td>
<td>3912.52</td>
<td>429.83</td>
</tr>
<tr>
<td>21 PAPER AND PAPER PRODUCTS</td>
<td>23</td>
<td>646.19</td>
<td>2410.15</td>
<td>215.60</td>
</tr>
<tr>
<td>22 PUBLISHING AND PRINTING</td>
<td>32</td>
<td>988.29</td>
<td>2631.04</td>
<td>317.87</td>
</tr>
<tr>
<td>24 CHEMICAL PRODUCTS, SYNTHETIC AND ARTIFICIAL FIBERS</td>
<td>5</td>
<td>222.85</td>
<td>945.89</td>
<td>62.04</td>
</tr>
<tr>
<td>25 GUM AND PLASTIC PRODUCTS</td>
<td>4</td>
<td>128.29</td>
<td>369.99</td>
<td>39.89</td>
</tr>
<tr>
<td>26 NON-METALLIFEROUS MINERAL PRODUCTS</td>
<td>5</td>
<td>135.57</td>
<td>411.87</td>
<td>44.79</td>
</tr>
<tr>
<td>28 METAL PRODUCTS</td>
<td>164</td>
<td>5473.16</td>
<td>10 536.55</td>
<td>1956.32</td>
</tr>
<tr>
<td>29 MACHINES AND MECHANICAL MACHINERIES INSTALLATION, ASSEMBLY, REPAIR AND MAINTENANCE</td>
<td>137</td>
<td>6234.98</td>
<td>12 410.36</td>
<td>2656.82</td>
</tr>
<tr>
<td>31 MACHINES AND N.C.A. ELECTRICAL SET</td>
<td>9</td>
<td>255.18</td>
<td>668.86</td>
<td>86.09</td>
</tr>
<tr>
<td>32 RADIO TELEVISION AND COMMUNICATION</td>
<td>3</td>
<td>72.98</td>
<td>198.47</td>
<td>25.05</td>
</tr>
<tr>
<td>33 MEDICAL AND PRECISION MACHINES, AND OPTICAL INSTRUMENTS</td>
<td>24</td>
<td>649.50</td>
<td>1709.27</td>
<td>196.14</td>
</tr>
<tr>
<td>35 MOTOR VEHICLES</td>
<td>31</td>
<td>765.29</td>
<td>2364.70</td>
<td>238.32</td>
</tr>
<tr>
<td>36 FURNITURE AND OTHER MANUFACTURING INDUSTRIES</td>
<td>26</td>
<td>525.03</td>
<td>1583.15</td>
<td>172.06</td>
</tr>
<tr>
<td>40 PRODUCTION AND DISTRIBUTION OF ENERGY, GAS AND WATER</td>
<td>1</td>
<td>69.62</td>
<td>363.69</td>
<td>16.28</td>
</tr>
<tr>
<td>41 WATER COLLECTION, PURIFICATION AND DISTRIBUTION</td>
<td>1</td>
<td>39.35</td>
<td>92.50</td>
<td>11.70</td>
</tr>
<tr>
<td>45 CONSTRUCTION</td>
<td>731</td>
<td>16 837.84</td>
<td>49 192.16</td>
<td>4842.52</td>
</tr>
<tr>
<td>50 TRADE, MAINTENANCE AND REPAIRING OF AUTOS AND MOTOR VEHICLES</td>
<td>175</td>
<td>3407.32</td>
<td>29 228.88</td>
<td>1134.03</td>
</tr>
<tr>
<td>51 WHOLESALE, REPAIRING AND REPAIRING OF AUTOS AND MOTOR VEHICLES</td>
<td>279</td>
<td>12 481.04</td>
<td>73 601.93</td>
<td>3048.48</td>
</tr>
<tr>
<td>52 RETAIL, AUTO AND MOTOR VEHICLES EXCLUDED, REPAIR OF PERSONAL AND HOUSE GOODS</td>
<td>902</td>
<td>15 279.69</td>
<td>81 056.88</td>
<td>3206.35</td>
</tr>
<tr>
<td>60 LAND AND CONDUCT TRANSPORT</td>
<td>64</td>
<td>1976.58</td>
<td>5113.34</td>
<td>411.63</td>
</tr>
<tr>
<td>61 SEA AND WATER TRANSPORT</td>
<td>6</td>
<td>93.58</td>
<td>201.11</td>
<td>38.70</td>
</tr>
<tr>
<td>63 BEARING AND AUXILIARY TRANSPORT</td>
<td>46</td>
<td>1786.53</td>
<td>8127.28</td>
<td>600.44</td>
</tr>
<tr>
<td>64 POST AND TELECOMMUNICATIONS</td>
<td>3</td>
<td>60.27</td>
<td>448.85</td>
<td>28.50</td>
</tr>
<tr>
<td>65 MONEY AND FINANCIAL SERVICES</td>
<td>2</td>
<td>40.18</td>
<td>105.87</td>
<td>19.10</td>
</tr>
<tr>
<td>67 AUXILIARY ACTIVITY OF FINANCE INTERMEDIATION</td>
<td>81</td>
<td>2342.65</td>
<td>4287.88</td>
<td>496.08</td>
</tr>
<tr>
<td>70 ESTATE</td>
<td>171</td>
<td>9334.80</td>
<td>19 473.27</td>
<td>584.72</td>
</tr>
<tr>
<td>71 HIRE OF MACHINERY AND GOODS FOR PERSONAL USE</td>
<td>5</td>
<td>114.65</td>
<td>484.95</td>
<td>23.60</td>
</tr>
<tr>
<td>72 INFORMATIC AND RELATED ACTIVITIES</td>
<td>47</td>
<td>1572.92</td>
<td>3599.76</td>
<td>431.35</td>
</tr>
<tr>
<td>73 RESEARCH AND DEVELOPMENT</td>
<td>2</td>
<td>94.00</td>
<td>135.62</td>
<td>7.48</td>
</tr>
<tr>
<td>74 OTHER PROFESSIONAL ACTIVITIES</td>
<td>571</td>
<td>22 595.31</td>
<td>35 033.75</td>
<td>5335.92</td>
</tr>
<tr>
<td>90 SOLID RUBBISH DISPOSAL AND DRAINS</td>
<td>5</td>
<td>259.00</td>
<td>791.21</td>
<td>61.98</td>
</tr>
<tr>
<td>92 RECREATIONAL, CULTURAL AND SPORT ACTIVITIES</td>
<td>26</td>
<td>1267.59</td>
<td>3022.62</td>
<td>183.98</td>
</tr>
<tr>
<td>93 OTHER ACTIVITIES</td>
<td>143</td>
<td>1691.24</td>
<td>3404.64</td>
<td>436.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4203</strong></td>
<td><strong>123 938.97</strong></td>
<td><strong>398 421.71</strong></td>
<td><strong>33 245.30</strong></td>
</tr>
</tbody>
</table>

Source: Intermediate industry and services census, 1996
Table 9 – Value-added, sales and labor costs of the tourist sector (in thousands of euros)

<table>
<thead>
<tr>
<th>TOURIST SECTOR</th>
<th>Employed by sector</th>
<th>Value-added</th>
<th>Sales</th>
<th>Wages and salaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 2 RETAIL OF FOOD, DRINKS AND TOBACCO IN SPECIFIC SHOPS</td>
<td>69</td>
<td>1169</td>
<td>6201</td>
<td>245</td>
</tr>
<tr>
<td>55 HOTELS AND RESTAURANTS</td>
<td>1719</td>
<td>30 692</td>
<td>72 710</td>
<td>11 709</td>
</tr>
<tr>
<td>92 RECREATIONAL, CULTURAL AND SPORTIVE ACTIVITIES</td>
<td>20</td>
<td>975</td>
<td>2325</td>
<td>142</td>
</tr>
<tr>
<td>93 OTHER ACTIVITIES</td>
<td>29</td>
<td>343</td>
<td>690</td>
<td>89</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1837</td>
<td>33 179</td>
<td>81 926</td>
<td>12 185</td>
</tr>
</tbody>
</table>

Source: Intermediate census of industry and services, (Istat 1996a)

Table 10 - Agriculture sector value-added (in thousands of euros)

<table>
<thead>
<tr>
<th>AGRICULTURAL SECTOR</th>
<th>Cereals</th>
<th>Permanent cultivation</th>
<th>Livestock</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gardone Riviera</td>
<td>7.10</td>
<td>47.92</td>
<td>21.81</td>
<td>76.82</td>
</tr>
<tr>
<td>Gargnano</td>
<td>36.27</td>
<td>160.28</td>
<td>110.17</td>
<td>306.72</td>
</tr>
<tr>
<td>Limone sul Garda</td>
<td>0.63</td>
<td>77.60</td>
<td>0.85</td>
<td>79.07</td>
</tr>
<tr>
<td>Magasa</td>
<td>7.94</td>
<td>0.00</td>
<td>62.89</td>
<td>70.83</td>
</tr>
<tr>
<td>Salò</td>
<td>334.47</td>
<td>275.72</td>
<td>153.57</td>
<td>763.76</td>
</tr>
<tr>
<td>Tignale</td>
<td>88.53</td>
<td>73.25</td>
<td>74.91</td>
<td>236.69</td>
</tr>
<tr>
<td>Toscolano-Maderno</td>
<td>76.37</td>
<td>196.23</td>
<td>67.48</td>
<td>340.07</td>
</tr>
<tr>
<td>Tremosine</td>
<td>110.79</td>
<td>59.16</td>
<td>475.86</td>
<td>645.80</td>
</tr>
<tr>
<td>Valvestino</td>
<td>5.37</td>
<td>0.00</td>
<td>71.37</td>
<td>76.74</td>
</tr>
<tr>
<td>TOTAL</td>
<td>667.45</td>
<td>890.15</td>
<td>1038.90</td>
<td>2596.51</td>
</tr>
</tbody>
</table>

Source: Our elaborations; INEA (1996)

Table 11 - Incomes and consumptions of resident population (in thousands of euros)

<table>
<thead>
<tr>
<th>INCOME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident population</td>
<td>27 164</td>
</tr>
<tr>
<td>Per capita average annual income (Lombardy)</td>
<td>10.08</td>
</tr>
<tr>
<td>Total income</td>
<td>273 735</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONSUMPTION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% Consumption/income (Lombardy)</td>
<td>94 %</td>
</tr>
<tr>
<td>Total consumption expenditure</td>
<td>257 311</td>
</tr>
<tr>
<td>Total savings</td>
<td>16 424</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INCOME COMPOSITION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% Labor income/total income (Province of Brescia)</td>
<td>65.87 %</td>
</tr>
<tr>
<td>Total labor income</td>
<td>180 309</td>
</tr>
<tr>
<td>Total other income</td>
<td>93 426</td>
</tr>
</tbody>
</table>

Source: Quantitative distribution of income in surveys of Italian family budgets (Istat, 1996c)
Table 12 – Composition of the resident population’s income

<table>
<thead>
<tr>
<th>SOURCES</th>
<th>Resident population employed in the tourist sector</th>
<th>Rest of the resident population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor income from domestic sectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>-</td>
<td>0.52</td>
</tr>
<tr>
<td>Tourism</td>
<td>64.45</td>
<td>-</td>
</tr>
<tr>
<td>Other sectors</td>
<td>-</td>
<td>45.63</td>
</tr>
<tr>
<td>Other incomes (include incomes of residents</td>
<td>35.55</td>
<td>53.85</td>
</tr>
<tr>
<td>employed in non-local firms, in education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and health sectors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 13 - Final consumption of goods produced by local firms of the first 8 sectors (in thousands of euros)

<table>
<thead>
<tr>
<th>OTHER SECTORS</th>
<th>Employees</th>
<th>Sales</th>
<th>Final Consumption /production</th>
<th>Final consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 FOOD AND DRINK INDUSTRIES</td>
<td>286</td>
<td>31462</td>
<td>50.0</td>
<td>15746</td>
</tr>
<tr>
<td>17 TEXTILE INDUSTRIES</td>
<td>66</td>
<td>6473</td>
<td>21.2</td>
<td>1370</td>
</tr>
<tr>
<td>18 CLOTHING INDUSTRIES</td>
<td>56</td>
<td>2568</td>
<td>65.2</td>
<td>1674</td>
</tr>
<tr>
<td>20 WOOD AND WOOD AND CORK PRODUCTS</td>
<td>71</td>
<td>3913</td>
<td>7.1</td>
<td>276</td>
</tr>
<tr>
<td>21 PAPER AND PAPER PRODUCTS</td>
<td>23</td>
<td>2410</td>
<td>6.9</td>
<td>165</td>
</tr>
<tr>
<td>22 PUBLISHING AND PRINTING</td>
<td>32</td>
<td>2631</td>
<td>29.7</td>
<td>782</td>
</tr>
<tr>
<td>24 CHEMICAL PRODUCTS, SYNTHETIC AND ARTIFICIAL FIBERS</td>
<td>5</td>
<td>946</td>
<td>14.1</td>
<td>133</td>
</tr>
<tr>
<td>25 GUM AND PLASTIC PRODUCTS</td>
<td>4</td>
<td>370</td>
<td>8.7</td>
<td>32</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4203</strong></td>
<td><strong>50772</strong></td>
<td></td>
<td><strong>20180</strong></td>
</tr>
</tbody>
</table>

Source: Istat, 1996b
Istat, 2000
Table 14 - Arrivals and nights spent by Italian and foreign tourists in hotels

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>ITALIANS</th>
<th></th>
<th></th>
<th></th>
<th>FOREIGN VISITORS</th>
<th></th>
<th></th>
<th></th>
<th>TOTAL</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arrivals</td>
<td>Nights spent</td>
<td>Arrivals</td>
<td>Nights spent</td>
<td>Arrivals</td>
<td>Nights spent</td>
<td>Arrivals</td>
<td>Nights spent</td>
<td></td>
<td>Arrivals</td>
<td>Nights spent</td>
<td>Arrivals</td>
</tr>
<tr>
<td>JANUARY</td>
<td>1492</td>
<td>8280</td>
<td>423</td>
<td>2039</td>
<td>1915</td>
<td>10319</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>1904</td>
<td>7733</td>
<td>725</td>
<td>1798</td>
<td>2629</td>
<td>9531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARCH</td>
<td>2942</td>
<td>10355</td>
<td>6095</td>
<td>2238</td>
<td>9037</td>
<td>32915</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APRIL</td>
<td>10104</td>
<td>34513</td>
<td>27267</td>
<td>129847</td>
<td>37371</td>
<td>164360</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td>9300</td>
<td>47356</td>
<td>32964</td>
<td>160429</td>
<td>42264</td>
<td>207785</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JUNE</td>
<td>9684</td>
<td>60478</td>
<td>28476</td>
<td>193178</td>
<td>38160</td>
<td>253656</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JULY</td>
<td>11541</td>
<td>91189</td>
<td>31270</td>
<td>234121</td>
<td>42811</td>
<td>325310</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUGUST</td>
<td>15893</td>
<td>139750</td>
<td>38223</td>
<td>267911</td>
<td>54116</td>
<td>407661</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEPTEMBER</td>
<td>7842</td>
<td>53506</td>
<td>31274</td>
<td>203132</td>
<td>39116</td>
<td>256638</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCTOBER</td>
<td>3994</td>
<td>12662</td>
<td>18872</td>
<td>101157</td>
<td>22866</td>
<td>113819</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOVEMBER</td>
<td>1884</td>
<td>6121</td>
<td>1219</td>
<td>5106</td>
<td>3103</td>
<td>11227</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DECEMBER</td>
<td>1805</td>
<td>6407</td>
<td>713</td>
<td>2087</td>
<td>2518</td>
<td>8494</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>78385</td>
<td>478530</td>
<td>217521</td>
<td>1303043</td>
<td>295906</td>
<td>1801715</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Province of Brescia, Ufficio promozioni e statistica.

NOTES

1 The High Garda Natural Park extends for about 38 000 hectares, half of which are covered by woods. It embraces the municipalities of Salò, Gardone Riviera, Toscolano Maderno, Valvestino, Magasa, Gargnano, Limone, Tignale and Tremosine. The territory has heterogeneous morphological characteristics. It ranges from a height of 65m to 2000m above the sea level. It presents also very different climatic conditions, typical of a Mediterranean system in the land surrounding the lake shores and the ‘alpine systems’ on the north-west side of Garda Lake.
REFERENCES


European Commission, (2002), *Definitions of Variable Used in FADN Standard Results*, RI/CC 8882 Rev. 7.0, Brussels.


Province of Brescia, Ufficio promozione e statistica at:

http://www.provincia.brescia.it/turismo/turismo-uffici.php

Pyatt, G. and J. I. Round (1979), ‘Accounting and Fixed Price Multipliers in a Social

Regional Statistical Yearbook of Lombardy in http://www.ring.lombardia.it/.


NOTE DI LAVORO DELLA FONDAZIONE ENI ENRICO MATTEI
Fondazione Eni Enrico Mattei Working Paper Series
Our Note di Lavoro are available on the Internet at the following addresses:
http://www.feem.it/Feem/Pub/Publications/WPapers/default.html
http://www.repec.org

NOTE DI LAVORO PUBLISHED IN 2004

IEM 1.2004
Anil MARKANDYA, Suzette PEDROSO and Alexander GOLUB: Empirical Analysis of National Income and So2 Emissions in Selected European Countries

ETA 2.2004
Masahisa FUJITA and Shlomo WEBER: Strategic Immigration Policies and Welfare in Heterogeneous Countries

PRA 3.2004
Adolfo DI CARLUCCIO, Giovanni FERRI, Cecilia FRALE and Ottavio RICCHI: Do Privatizations Boost Household Shareholding? Evidence from Italy

ETA 4.2004
Victor GINSBURGH and Shlomo WEBER: Languages Disenfranchisement in the European Union

PRA 5.2004
Romano PIRAS: Growth, Congestion of Public Goods, and Second-Best Optimal Policy

CCMP 6.2004
Herman R.J. VOLLEBERGER: Lessons from the Polder: Is Dutch CO2-Taxation Optimal

PRA 7.2004
Sandro BRUSCO, Giuseppe LOPOMO and S. VISWANATHAN (lxv): Merger Mechanisms

PRA 8.2004
Wolfgang AUSSENEGG, Pegaret PICHLER and Alex STOMPER (lxv): IPO Pricing with Bookbuilding, and a When-Issued Market

PRA 9.2004
Pegaret PICHLER and Alex STOMPER (lxv): Primary Market Design: Direct Mechanisms and Markets

PRA 10.2004
Florian ENGLMAIER, Pablo GUILLEN, Loreto LLORENTE, Sander ONDERSTAL and Rupert SAUSGRUBER (lxv): The Chopstick Auction: A Study of the Exposure Problem in Multi-Unit Auctions

PRA 11.2004
Bjarne BRENDSTRUP and Harry J. PAARSCH (lxv): Nonparametric Identification and Estimation of Multi-Unit, Sequential, Oral, Ascending-Price Auctions With Asymmetric Bidders

PRA 12.2004
Ohad KADAN (lxv): Equilibrium in the Two Player, k-Double Auction with Affiliated Private Values

PRA 13.2004
Maarten C.W. JANSEN (lxv): Auctions as Coordination Devices

PRA 14.2004
Gadi FIBICH, Arieh GAVIOUS and Aner SELA (lxv): All-Pay Auctions with Weakly Risk-Averse Buyers

PRA 15.2004
Orly SADE, Charles SCHNITZLEIN and Jaime F. ZENDER (lxv): Competition and Cooperation in Divisible Good Auctions: An Experimental Examination

CCMP 16.2004
Marta STRYSZOWSKA (lxv): Late and Multiple Bidding in Competing Second Price Internet Auctions

PRA 17.2004
Slam Ben YOUSSEF: R&D in Cleaner Technology and International Trade

NRN 18.2004
Angelo ANTOCI, Simone BORGHESI and Paolo RUSSU (lxv): Biodiversity and Economic Growth: Stabilization Versus Preservation of the Ecological Dynamics

SIEV 19.2004
Guido CANDELA and Roberto CELLINI (lxvii): Investment in Tourism Market: A Dynamic Model of Differentiated Oligopoly

NRM 20.2004
Jacqueline M. HAMILTON (lxvii): Climate and the Destination Choice of German Tourists

NRM 21.2004
Javier Rey-MAQUEIRA PALMER, Javier LOZANO IBÁÑEZ and Carlos Mario GÓMEZ GÓMEZ (lxvii): Land, Environmental Externalities and Tourism Development

NRN 22.2004
Pius ODUNGA and Henk FOLMER (lxvii): Profiling Tourists for Balanced Utilization of Tourism-Based Resources in Kenya

NRM 23.2004
Jean-Jacques NOWAK, Mondher SAHLI and Pasquale M. SGRO (lxvii): Tourism, Trade and Domestic Welfare

NRN 24.2004
Riaz SHAREEF (lxvii): Country Risk Ratings of Small Island Tourism Economies

NRN 25.2004
Juan Luis EUGENIO-MARTÍN, Noelia MARTÍN MORALES and Riccardo SCARPA (lxvii): Tourism and Economic Growth in Latin American Countries: A Panel Data Approach

NRN 26.2004
Raul Hernández MARTÍN (lxvii): Impact of Tourism Consumption on GDP. The Role of Imports

CSR 27.2004
Nicoletta FERRO (lxvii): Cross-Country Ethical Dilemmas in Business: A Descriptive Framework

NRN 28.2004
Marian WEBER (lxvii): Assessing the Effectiveness of Tradable Landuse Rights for Biodiversity Conservation: an Application to Canada’s Boreal Mixedwood Forest

NRN 29.2004
Trond BJORNDAAL, Phoebe KOUNDOURI and Sean PASCOE (lxvii): Output Substitution in Multi-Species Trawl Fisheries: Implications for Quota Setting

CCMP 30.2004
Marzio GALEOTTI, Alessandra GORIA, Paolo MOMBRINI and Evi SPANTIDAKI: Weather Impacts on Natural, Social and Economic Systems (WISE) Part I: Sectoral Analysis of Climate Impacts in Italy

CCMP 31.2004
Marzio GALEOTTI, Alessandra GORIA, Paolo MOMBRINI and Evi SPANTIDAKI: Weather Impacts on Natural, Social and Economic Systems (WISE) Part II: Individual Perception of Climate Extremes in Italy

CTN 32.2004
Wilson PEREZ: Divide and Conquer: Noisy Communication in Networks, Power, and Wealth Distribution

KTHC 33.2004

KTHC 34.2004
Linda CHAIB (lxviii): Immigration and Local Urban Participatory Democracy: A Boston-Paris Comparison
An Application to the Recreational Value of Forests
Gernot KLEPPER and Sonja PETERSON:

Andrea BIGANO and Stef PROOST:

Francesco RICCI:

Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the

Kiflemariam HAMDE

Dinko DIMITROV, Peter BORM, Ruud HENDRICKX and Shao CHIN SUNG:

Anastasios XEPAPADEAS and Constadina PASSA:

Valentina BOSETTI, Mariaester CASSINELLI and Alessandro LANZA

E.C.M. RUIJGROK

Netherlands

Kiflemariam HAMDE

Györgyi BELA, György PATAKI, Melinda SMALE and Mariann HAJDÚ

Marc ESCRIHUELA-VILLAR: Cartel Sustainability and Cartel Stability

Sebastian BEROYETS and Nicolas GRAVEL (lxvi): Appraising Diversity with an Ordinal Notion of Similarity: An Axiomatic Approach

Signe ANTHON and Bo JELLESMARK THORSEN (lxvi): Optimal Afforestation Contracts with Asymmetric Information on Private Environmental Benefits

John MBERU (lxvi): Wildlife Conservation and Management in Kenya: Towards a Co-management Approach

Ekim BIROL, Ágnes GYOVAI and Melinda SMALE (lxvi): Using a Choice Experiment to Value Agricultural Biodiversity on Hungarian Small Farms: Agri-Environmental Policies in a Transition al Economy

Gernot KLEPPER and Sonja PETERSON: The EU Emissions Trading Scheme: Allowance Prices, Trade Flows, Competitiveness Effects

Scott BARRETT and Michael HOEL: Optimal Disease Eradication

Dinko DIMITROV, Peter BORM, Ruud HENDRICKX and Shao CHIN SUNG: Simple Priorities and Core Stability in Hedonic Games

Francesco RICCI: Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the Theory

Anna ALBERINI, Maureen CROPPER, Alan KRUPNICK and Nathalie B. SIMON: Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?

Ingo BRÄUER and Rainer MARGGRAF (lxvi): Valuation of Ecosystem Services Provided by Biodiversity Conservation: An Integrated Hydrological and Economic Model to Value the Enhanced Nitrogen Retention in Renaturated Streams

Timo GOESCHL and Tun LIN (lxvi): Biodiversity Conservation on Private Lands: Information Problems and Regulatory Choices

Tom DEDEURWAERDERE (lxvi): Bioprospection: From the Economics of Contracts to Reflexive Governance

Koen REHDDANZ and David MADDISON: The Amenity Value of Climate to German Households

Francesco RICCI: Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the Theory

Anna ALBERINI, Maureen CROPPER, Alan KRUPNICK and Nathalie B. SIMON: Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?

Ingo BRÄUER and Rainer MARGGRAF (lxvi): Valuation of Ecosystem Services Provided by Biodiversity Conservation: An Integrated Hydrological and Economic Model to Value the Enhanced Nitrogen Retention in Renaturated Streams

Timo GOESCHL and Tun LIN (lxvi): Biodiversity Conservation on Private Lands: Information Problems and Regulatory Choices

Tom DEDEURWAERDERE (lxvi): Bioprospection: From the Economics of Contracts to Reflexive Governance

Koen REHDDANZ and David MADDISON: The Amenity Value of Climate to German Households

Francesco RICCI: Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the Theory

Anna ALBERINI, Maureen CROPPER, Alan KRUPNICK and Nathalie B. SIMON: Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?

Ingo BRÄUER and Rainer MARGGRAF (lxvi): Valuation of Ecosystem Services Provided by Biodiversity Conservation: An Integrated Hydrological and Economic Model to Value the Enhanced Nitrogen Retention in Renaturated Streams

Timo GOESCHL and Tun LIN (lxvi): Biodiversity Conservation on Private Lands: Information Problems and Regulatory Choices

Tom DEDEURWAERDERE (lxvi): Bioprospection: From the Economics of Contracts to Reflexive Governance

Koen REHDDANZ and David MADDISON: The Amenity Value of Climate to German Households

Francesco RICCI: Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the Theory

Anna ALBERINI, Maureen CROPPER, Alan KRUPNICK and Nathalie B. SIMON: Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?

Ingo BRÄUER and Rainer MARGGRAF (lxvi): Valuation of Ecosystem Services Provided by Biodiversity Conservation: An Integrated Hydrological and Economic Model to Value the Enhanced Nitrogen Retention in Renaturated Streams

Timo GOESCHL and Tun LIN (lxvi): Biodiversity Conservation on Private Lands: Information Problems and Regulatory Choices

Tom DEDEURWAERDERE (lxvi): Bioprospection: From the Economics of Contracts to Reflexive Governance

Koen REHDDANZ and David MADDISON: The Amenity Value of Climate to German Households

Francesco RICCI: Channels of Transmission of Environmental Policy to Economic Growth: A Survey of the Theory

Anna ALBERINI, Maureen CROPPER, Alan KRUPNICK and Nathalie B. SIMON: Willingness to Pay for Mortality Risk Reductions: Does Latency Matter?
Rob DELLINK and Ekko van IERLAND: Pollution Abatement in the Netherlands: A Dynamic Applied General Equilibrium Assessment

Rosella LEVAGGI and Michele MORETTO: Investment in Hospital Care Technology under Different Purchasing Rules: A Real Option Approach

Salvador BARBERA and Matthew O. JACKSON (lxx): On the Weights of Nations: Assigning Voting Weights in a Heterogeneous Union

Alex ARENAS, Antonio CABRALES, Albert DÍAZ-GUILERA, Roger GUIMERÀ and Fernando VEGA-REDONDO (lx): Optimal Information Transmission in Organizations: Search and Congestion

Francis BLOC and Armando GOMES (lxx): Contracting with Externalities and Outside Options

Rahab AMIR, Effrosyni DIAMANTOUDI and Licun XUE (lx): Merger Performance under Uncertain Efficiency Gains

Francis BLOC and Matthew O. JACKSON (lx): The Formation of Networks with Transfers among Players

Daniel DIEMEWER, Hilya ERASLAN and Antonio MERLO (lx): Bicameralism and Government Formation

Rod GARRATT, James E. PARCO, Cheng-ZHONG QIN and Amnon RAPOPORT (lx): Potential Maximization and Coalition Government Formation

Kfir ELIAZ, Debraj RAY and Ronny RAZIN (lx): Group Decision-Making in the Shadow of Disagreement

Sanjeev GOTAL, Marco van der LEIJ and José Luis MORAGA-GONZÁLEZ (lx): Economics: An Emerging Small World?

Edward CARTWRIGHT (lx): Learning to Play Approximate Nash Equilibria in Games with Many Players

Finn R. FØRUND and Michael HOEL: Properties of a Non-Competitive Electricity Market Dominated by Hydroelectric Power

Elisaios PAPYRAXIS and Reyer GERLAGH: Natural Resources, Investment and Long-Term Income

Marzio GALEOTTT and Claudia KEMPFERT: Interactions between Climate and Trade Policies: A Survey

A. MARKANDYA, S. PEDROSO and D. STREMIKIENE: Energy Efficiency in Transition Economies: Is There Convergence Towards the EU Average?

Rolf GOLOMBEK and Michael HOEL: Climate Agreements and Technology Policy

Sergei IZMALKOV (lx): Multi-Unit Open Ascending Price Efficient Auction

Gianmarco U.P. OTTAVIANO and Giovanni PERI: Cities and Cultures

Massimo DAL GIACCO: Agglomeration, Integration, and Territorial Authority Scale in a System of Trading Cities, Centralisation versus de-centralization

Pierre-André JOUVET, Philippe MICHEL and Gilles ROTILLON: Equilibrium with a Market of Permits

Bob van der ZWAAN and Reyer GERLAGH: Climate Uncertainty and the Necessity to Transform Global Supply

Francesco BOSSELLO, Marco LAZZARIN, Roberto ROSON and Richard S.J. TOL: Economy-Wide Estimates of the Implications of Climate Change: Sea Level Rise

Gustavo BERGANTÍNOS and Juan J. VIDAL-PUGA: Defining Rules in Cost Spanning Tree Problems Through the Canonical Form

Siddhartha BANDYOPADHYAY and Mandar OAK: Party Formation and Coalitional Bargaining in a Model of Proportional Representation

Hans-Peter WEIKARD, Michael FINUS and Juan-Carlos ALTAMIRANO-CABRERA: The Impact of Surplus Sharing on the Stability of International Climate Agreements

Chiara M. TRAVISI and Peter NIJKAMP: Willingness to Pay for Agricultural Environmental Safety: Evidence from a Survey of Milan, Italy, Residents

Chiara M. TRAVISI, Raymond J. G. M. FLORAX and Peter NIJKAMP: A Meta-Analysis of the Willingness to Pay for Reducing Pesticide Risk Exposure

Valentina BOSETTI and David TOMBERLIN: Real Options Analysis of Fishing Fleet Dynamics: A Test

Alessandra GORIA e Gretel GAMBARELLI: Economic Evaluation of Climate Change Impacts and Adaptability in Italy


John BENNETT, Saul ESTRIN, James MAW and Giovanni URG: Privatisation Methods and Economic Growth in Transition Economies

Kira BÖRNER: The Political Economy of Privatization: Why Do Governments Want Reforms?

Pehr-Johan NORBACK and Lars PERSSON: Privatization and Restructuring in Concentrated Markets

Angela GRANZOTTO, Fabio PRANOVI, Simone LIBRALATO, Patrizia TORRICELLI and Danilo MAINARDI: Comparison between Artisanal Fishery and Manilla Clam Harvesting in the Venice Lagoon by Using Ecosystem Indicators: An Ecological Economics Perspective

Somdeb LAHIRE: The Cooperative Theory of Two Sided Matching Problems: A Re-examination of Some Results

Giuseppe DI VITA: Natural Resources Dynamics: Another Look

Anna ALBERINI, Alistair HUNT and Anil MARKANDYA: Willingness to Pay to Reduce Mortality Risks: Evidence from a Three-Country Contingent Valuation Study

Valeria COSTANTINI and Francesco GRACCEVA: Oil Security, Short- and Long-Term Policies
IEM 116.2004 Valeria COSTANTINI and Francesco GRACCEVA: Social Costs of Energy Disruptions
Christian EGENHOFER, Kyriakos GIALOGLOU, Giacomo LUCIANI, Maroeska BOOTS, Martin SCHEEPERS,
IEM 117.2004 Valeria COSTANTINI, Francesco GRACCEVA, Anil MARKANDYA and Giorgio VICINI: Market-Based Options for Security of Energy Supply
IEM 119.2004 Giacomo LUCIANI: Security of Supply for Natural Gas Markets. What is it and What is it not?
IEM 120.2004 L.J. de VRIES and R.A. HAKVOORT: The Question of Generation Adequacy in Liberalised Electricity Markets
KTHC 121.2004 Alberto PETRUCCI: Asset Accumulation, Fertility Choice and Nondegenerate Dynamics in a Small Open Economy
NRM 122.2004 Carlo GIUPPONI, Jaroslav MYSIAK and Anita FASSIO: An Integrated Assessment Framework for Water Resources Management: A DSS Tool and a Pilot Study Application
ETA 124.2004 Paul MENSINK: Instant Efficient Pollution Abatement Under Non-Linear Taxation and Asymmetric Information: The Differential Tax Revisited
NRM 125.2004 Mauro FABIANO, Gabriella CAMARSA, Rosanna DURSI, Roberta VALDI, Valentina MARIN and Francesca PALMISANI: Integrated Environmental Study for Beach Management: A Methodological Approach
PRA 126.2004 Irena GROSFELD and Iraj HASHI: The Emergence of Large Shareholders in Mass Privatized Firms: Evidence from Poland and the Czech Republic
CCMP 127.2004 Maria BERRITELLA, Andrea BIGANO, Roberto ROSON and Richard S.J. TOL: A General Equilibrium Analysis of Climate Change Impacts on Tourism
NRM 129.2004 Elíasos PAPYRakis and Reyer GERLAGH: Natural Resources, Innovation, and Growth
PRA 130.2004 Bernardo BORTOLOTTI and Mara FACCIO: Reluctant Privatization
IEM 133.2004 Santiago J. RUBIO: On Capturing Oil Rents with a National Excise Tax Revisited
ETA 134.2004 Ascensión ANDINA DÍAZ: Political Competition when Media Create Candidates’ Charisma
SIEV 135.2004 Anna ALBERINI: Robustness of VSL Values from Contingent Valuation Surveys
ETA 137.2004 Herbert DAWID, Christophe DEISSENBERG and Pavel ŠEVČIK: Cheap Talk, Gullibility, and Welfare in an Environmental Taxation Game
CCMP 139.2004 Reyer GERLAGH and Marjan W. HOFKES: Time Profile of Climate Change Stabilization Policy
NRM 140.2004 Chiara D’ALPAOS and Michele MORETTO: The Value of Flexibility in the Italian Water Service Sector: A Real Option Analysis
PRA 141.2004 Patrick BAJARI, Stephanie HOUTHAGON and Steven TADELIS (lxxi): Bidding for Incompete Contracts
PRA 143.2004 David GOLDBREICH (lxxi): Behavioral Biases of Dealers in U.S. Treasury Auctions
PRA 144.2004 Roberto BURGUEt (lxxi): Optimal Procurement Auction for a Buyer with Downward Sloping Demand: More Simple Economics
PRA 147.2004 Claudio MEZZETTI, Aleksandar PEKE and Ilia TSETLIN (lxxi): Sequential vs. Single-Round Uniform-Price Auctions
PRA 148.2004 John ASKER and Estelle CANTILLON (lxxi): Equilibrium of Scoring Auctions
PRA 149.2004 Philip A. HAILE, Han HONG and Matthew SHUM (lxxi): Nonparametric Tests for Common Values in First-Price Sealed-Bid Auctions
PRA 150.2004 François DEGEORGE, François DERRIEN and Kent L. WOMACK (lxxi): Quid Pro Quo in IPOs: Why Bookbuilding is Dominating Auctions
CCMP 151.2004 Barbara BUCHNER and Silvia DALL’OLIO: Russia: The Long Road to Ratification. Internal Institution and Pressure Groups in the Kyoto Protocol’s Adoption Process
CCMP 152.2004 Carlo CARRARO and Marcozio GALEOTTI: Does Endogenous Technical Change Make a Difference in Climate Policy Analysis? A Robustness Exercise with the FEEM-RICE Model
ETA 154.2004 Nicola ACOCELLA, Giovanni Di BARTOLOMEO and Wilfried PAUWELS: Is there any Scope for Corporatism in Stabilization Policies?
CTN 155.2004 Johan EYCKMANS and Michael FINUS: An Almost Ideal Sharing Scheme for Coalition Games with Externalities
CCMP 156.2004 Cesare DOSI and Michele MORETTO: Environmental Innovation, War of Attrition and Investment Grants
Valentina BOSETTI, Marzio GALEOTTI and Alessandro LANZA: How Consistent are Alternative Short-Term Climate Policies with Long-Term Goals?


William BROCK and Anastasios XEPAPADEAS: Spatial Analysis: Development of Descriptive and Normative Methods with Applications to Economic-Ecological Modelling

Alberto PETRUCCI: On the Incidence of a Tax on PureRent with Infinite Horizons

Xavier LABANDEIRA, José M. LABEAGA and Miguel RODRÍGUEZ: Microsimulating the Effects of Household Energy Price Changes in Spain

NOTE DI LAVORO PUBLISHED IN 2005

Stéphane HALLEGATTE: Accounting for Extreme Events in the Economic Assessment of Climate Change

Qiang WU and Paulo Augusto NUNES: Application of Technological Control Measures on Vehicle Pollution: A Cost-Benefit Analysis in China

Andrea BIGANO, Jacqueline M. HAMILTON, Maren LAU, Richard S.J. TOL and Yuan ZHOU: A Global Database of Domestic and International Tourist Numbers at National and Subnational Level

Andrea BIGANO, Jacqueline M. HAMILTON and Richard S.J. TOL: The Impact of Climate on Holiday Destination Choice

Hubert KEMPF: Is Inequality Harmful for the Environment in a Growing Economy?

Valentina BOSETTI, Carlo CARRARO and Marzio GALEOTTI: The Dynamics of Carbon and Energy Intensity in a Model of Endogenous Technical Change


Lorenzo PELLEGRINI and Reyer GERLAGH: An Empirical Contribution to the Debate on Corruption

Angelo ANTOCI: Environmental Resources Depletion and Interplay Between Negative and Positive Externalities in a Growth Model

Francesco SINDICO: The GMO Dispute before the WTO: Legal Implications for the Trade and Environment Debate

Carla MASSIDDA: Estimating the New Keynesian Phillips Curve for Italian Manufacturing Sectors

Michele MORETTO and Gianpaolo ROSSINI: Start-up Entry Strategies: Employer vs. Nonemployer firms

Clara GRAZIANO and Annalisa LUPORINI: Ownership Concentration, Monitoring and Optimal Board Structure

Parashar KULKARNI: Use of Ecolabels in Promoting Exports from Developing Countries to Developed Countries: Lessons from the Indian LeatherFootwear Industry

Adriana DI LIBERTO, Roberto MURA and Francesco PIGLIARU: How to Measure the Unobservable: A Panel Technique for the Analysis of TFP Convergence

Alireza NAGHAVI: Asymmetric Labor Markets, Southern Wages, and the Location of Firms

Alireza NAGHAVI: Strategic Intellectual Property Rights Policy and North-South Technology Transfer

Mombert HOPPE: Technology Transfer Through Trade

Roberto ROSON: Platform Competition with Endogenous Multihoming

Barbara BUCHNER and Carlo CARRARO: Regional and Sub-Global Climate Blocs. A Game Theoretic Perspective on Bottom-up Climate Regimes

Fausto CAVALLARO: An Integrated Multi-Criteria System to Assess Sustainable Energy Options: An Application of the Promethee Method

Michael FINUS, Pierre v. MOUCHE and Bianca RUNDSHAGEN: Uniqueness of Coalitional Equilibria

Wietze LISE: Decomposition of CO2 Emissions over 1980–2003 in Turkey

Susanne MENZEL and Riccardo SCARPA: Protection Motivation Theory and Contingent Valuation: Perceived Realism, Threat and WTP Estimates for Biodiversity Protection

Maximilian MAZZANTI and Anna MONTINI: The Determinants of Residential Water Demand Empirical Evidence for a Panel of Italian Municipalities

Laurent GILOTTE and Michel de LARA: Precautionary Effect and Variations of the Value of Information

Paul SARFO-MENSAH: Exportation of Timber in Ghana: The Menace of Illegal Logging Operations

Andrea BIGANO, Alessandra GORIA, Jacqueline HAMILTON and Richard S.J. TOL: The Effect of Climate Change and Extreme Weather Events on Tourism

Maria Angeles GARCIA-VALINAS: Decentralization and Environment: An Application to Water Policies

Chiara D’ALPAOS, Cesare DOSI and Michele MORETTO: Concession Length and Investment Timing Flexibility

Joseph HUBER: Key Environmental Innovations

Antoni CALVÓ-ARMENGOL and Rahimi ILKILİÇ (lxxii): Pairwise-Stability and Nash Equilibria in Network Formation

Francesco FERI (lxxii): Network Formation with Endogenous Decay

Frank H. PAGE, Jr. and Myrna H. WOODERS (lxxii): Strategic Basins of Attraction, the Farsighted Core, and Network Formation Games
Margherita GRASSO and Matteo MANERA: Asymmetric Error Correction Models for the Oil-Gasoline Price Relationship

Umberto CHERUBINI and Matteo MANERA: Hunting the Living Dead A “Peso Problem” in Corporate Liabilities Data

Hans-Peter WEIKARD: Cartel Stability under an Optimal Sharing Rule

Joëlle NOAILLY, Jeroen C.J.M. van den BERGH and Cees A. WITTHAGEN (lxxvi): Local and Global Interactions in an Evolutionary Resource Game

Joëlle NOAILLY, Cees A. WITTHAGEN and Jeroen C.J.M. van den BERGH (lxxvi): Spatial Evolution of Social Norms in a Common-Pool Resource Game

Maximiliano MAZZANTI and Roberto ZOBOLI: Economic Instruments and Induced Innovation: The Case of End-of-Life Vehicles European Policies

Anna LASUT: Creative Thinking and Modelling for the Decision Support in Water Management

Valentina BOSETTI and Barbara BUCHNER: Using Data Envelopment Analysis to Assess the Relative Efficiency of Different Climate Policy Portfolios

IEM 84.2005

José Ignacio MUñOZ: Intellectual Property Rights and Biotechnology: How to Improve the Present Patent System

Giulio CAILLENI, Susanna MANCINELLI and Massimiliano MAZZANTI: Social Capital, R&D and Industrial Districts

ETA 85.2005

Rosella LEVAGGI, Michele MORETTO and Vincenzo REBBA: Quality and Investment Decisions in Hospital Care when Physicians are Devoted Workers

Valentino BOSETTI and Laurent GILOTTE: Carbon Capture and Sequestration: How Much Does this Uncertain Option Affect Near-Term Policy Choices?

Nicoleta FERRO: Value Through Diversity: Microfinance and Islamic Finance and Global Banking

A. MARKANDYA and S. PEDROSO: How Substitutable is Natural Capital?

Anil MARKANDYA, Valeria COSTANTINI, Francesco GRACCEVA and Giorgio VICINI: Security of Energy Supply: Comparing Scenarios From a European Perspective

Vincent M. OTTO, Andreas LÖSCHEL and Rob DELLINK: Energy Biased Technical Change: A CGE Analysis

Carlo CAPUANO: Energy Biased Technical Change: A CGE Analysis


Sabrina AUCI and Leonardo BECCHETTI: The Stability of the Adjusted and Unadjusted Environmental Kuznets Curve

Francesco BOSELLO and Jian ZHANG: Assessing Climate Change Impacts: Agriculture

Alessandro CAPPARRÓS, Jean-Christophe PEREAU and Tarik TAZDAÏT: Bargaining with Non-Monolithic Players


Rob DELLINK, Michael FINUS and Niels OLJEMAN: Coalition Formation under Uncertainty: The Stability of Likelihood of an International Climate Agreement

Valeria COSTANTINI, Riccardo CRESCENZI, Fabrizio DE FILIPPIS, and Luca SALVATICI: Bargaining Coalitions in the Agricultural Negotiations of the Doha Round: Similarity of Interests or Strategic Choices?

An Empirical Assessment

Giuliola FREY and Matteo MANERA: Econometric Models of Asymmetric Price Transmission

Alessandro COLOGNI and Matteo MANERA: Oil Prices, Inflation and Interest Rates in a Structural Cointegrated VAR Model for the G-7 Countries

Chiara M. TRAVISI and Roberto CAMAGNI: Sustainability of Urban Sprawl: Environmental-Economic Indicators for the Analysis of Mobility Impact in Italy

L. M. S. LUBOOBI and Joseph Y.T. MUGISHA: The Stability of the Adjusted and Unadjusted Environmental Kuznets Curve

Anna ALBERINI, Erik LICHTENBERG, Dominic MANCINI, and Gregmar I. GALINATO: Was It Something I Ate? Implementation of the FDA Seafood HACCP Program

Anna ALBERINI and Aline CHIABAI: Security of Energy Supply: Comparing Scenarios From a European Perspective

Rob DELLINK, Michael FINUS and Niels OLJEMAN: Coalition Formation under Uncertainty: The Stability of Likelihood of an International Climate Agreement

Valeria COSTANTINI, Riccardo CRESCENZI, Fabrizio DE FILIPPIS, and Luca SALVATICI: Bargaining Coalitions in the Agricultural Negotiations of the Doha Round: Similarity of Interests or Strategic Choices?

An Empirical Assessment

Giuliola FREY and Matteo MANERA: Econometric Models of Asymmetric Price Transmission

Alessandro COLOGNI and Matteo MANERA: Oil Prices, Inflation and Interest Rates in a Structural Cointegrated VAR Model for the G-7 Countries

Chiara M. TRAVISI and Roberto CAMAGNI: Sustainability of Urban Sprawl: Environmental-Economic Indicators for the Analysis of Mobility Impact in Italy

L. M. S. LUBOOBI and Joseph Y.T. MUGISHA: The Stability of the Adjusted and Unadjusted Environmental Kuznets Curve

Anna ALBERINI, Erik LICHTENBERG, Dominic MANCINI, and Gregmar I. GALINATO: Was It Something I Ate? Implementation of the FDA Seafood HACCP Program

Anna ALBERINI and Aline CHIABAI: Security of Energy Supply: Comparing Scenarios From a European Perspective

Rob DELLINK, Michael FINUS and Niels OLJEMAN: Coalition Formation under Uncertainty: The Stability of Likelihood of an International Climate Agreement

Valeria COSTANTINI, Riccardo CRESCENZI, Fabrizio DE FILIPPIS, and Luca SALVATICI: Bargaining Coalitions in the Agricultural Negotiations of the Doha Round: Similarity of Interests or Strategic Choices?

An Empirical Assessment
NRM 115.2005  
Martin D. SMITH and Larry B. CROWDER (lxxvi): Valuing Ecosystem Services with Fishery Rents: A Lumped-Parameter Approach to Hypoxia in the Neuse River Estuary

NRM 116.2005  
Dan HOLLAND and Kurt SCHNIER (lxxvi): Protecting Marine Biodiversity: A Comparison of Individual Habitat Quotas (IHQs) and Marine Protected Areas

PRCG 117.2005  
John NELLIS: The Evolution of Enterprise Reform in Africa: From State-owned Enterprises to Private Participation in Infrastructure — and Back?

PRCG 118.2005  
Bernardo BORTOLOTTI: Italy’s Privatization Process and its Implications for China

SIEV 119.2005  
Anna ALBERINI, Marcella VERONESI and Joseph C. COOPER: Detecting Starting Point Bias in Dichotomous-Choice Contingent Valuation Surveys

CTN 120.2005  
Federico ECHENIQUE and Mehmet B. YENMEZ: A Solution to Matching with Preferences over Colleagues

KTHC 121.2005  
Valeria GATTAI and Corrado MOLTENI: Dissipation of Knowledge and the Boundaries of the Multinational Enterprise

KTHC 122.2005  
Valeria GATTAI: Firm’s Intangible Assets and Multinational Activity: Joint-Venture Versus FDI

CCMP 123.2005  
Socrates KYPREOS: A MERGE Model with Endogenous Technological Change and the Cost of Carbon Stabilization

CCMP 124.2005  
Fuminori SANO, Keigo AKIMOTO, Takashi HOMMA and Toshimasa TOMODA: Analysis of Technological Portfolios for CO2 stabilizations and Effects of Technological Changes

CCMP 125.2005  
Fredrik HEDENUS, Christian AZAR and Kristian LINDGREN: Induced Technological Change in a Limited Foresight Optimization Model

CCMP 126.2005  
Reyer GERLAGH: The Value of ITC under Climate Stabilization

PRCG 127.2005  
John NELLIS: Privatization in Africa: What has happened? What is to be done?

PRCG 128.2005  
Raphaël SOUBEYRAN: Contest with Attack and Defence: Does Negative Campaigning Increase or Decrease Voters’ Turnout?

PRCG 129.2005  
Pascal GAUTIER and Raphaël SOUBEYRAN: Political Cycles: The Opposition Advantage

ETA 130.2005  
Giovanni DI BARTOLOMEO, Nicola ACOCELLA and Andrew HUGHES HALLETT: Dynamic Controllability with Overlapping targets: A Generalization of the Tinbergen-Nash Theory of Economic Policy

SIEV 131.2005  
Elissaios PAPYRAKIS and Reyer GERLAGH: Institutional Explanations of Economic Development: the Role of Precious Metals

ETA 132.2005  
Giovanni DI BARTOLOMEO and Nicola ACOCELLA: Tinbergen and Theil Meet Nash: Controllability in Policy Games

IEM 133.2005  
Adriana M. IGNACIUK and Rob B. DELLINK: Multi-Product Crops for Agricultural and Energy Production – an AGE Analysis for Poland

IEM 134.2005  
Raffaele MINIACI, Carlo SCARPA and Paola VALBONESI: Restructuring Italian Utility Markets: Household Distributional Effects

SIEV 135.2005  
Valentina ZANATTA, Paolo ROSATO, Anna ALBERINI and Dimitrios REPPAS: The Impact of Speed Limits on Recreational Boating in the Lagoon of Venice

NRM 136.2005  
Chi-CHUR CHAO, Bharat R. HAZARI, Jean-Pierre LAFFARGUE, Pasquale M. SGRO, and Eden S. H. YU (lxxviii): Tourism, Jobs, Capital Accumulation and the Economy: A Dynamic Analysis

NRM 137.2005  
Michael McALEER, Riaz SHAREEF and Bernardo da VEIGA (lxxviii): Risk Management of Daily Tourist Tax Revenues for the Maldives

NRM 138.2005  
Guido CANDELA, Paolo FIGINI and Antonello E. SCORCI (lxxviii): The Economics of Local Tourist Systems

NRM 139.2005  
Paola De AGOSTINI, Stefania LOVO, Francesco PECCI, Federico PERALI and Michele BAGGIO (lxxviii): Simulating the Impact on the Local Economy of Alternative Management Scenarios for Natural Areas
### 2004 SERIES

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Title</th>
<th>Editor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCMP</td>
<td>Climate Change Modelling and Policy</td>
<td>Marzio Galeotti</td>
</tr>
<tr>
<td>GG</td>
<td>Global Governance</td>
<td>Carlo Carraro</td>
</tr>
<tr>
<td>SIEV</td>
<td>Sustainability Indicators and Environmental Valuation</td>
<td>Anna Alberini</td>
</tr>
<tr>
<td>NRM</td>
<td>Natural Resources Management</td>
<td>Carlo Giupponi</td>
</tr>
<tr>
<td>KTHC</td>
<td>Knowledge, Technology, Human Capital</td>
<td>Gianmarco Ottaviano</td>
</tr>
<tr>
<td>IEM</td>
<td>International Energy Markets</td>
<td>Anil Markandya</td>
</tr>
<tr>
<td>CSRM</td>
<td>Corporate Social Responsibility and Sustainable Management</td>
<td>Sabina Ratti</td>
</tr>
<tr>
<td>PRA</td>
<td>Privatisation, Regulation, Antitrust</td>
<td>Bernardo Bortolotti</td>
</tr>
<tr>
<td>ETA</td>
<td>Economic Theory and Applications</td>
<td>Carlo Carraro</td>
</tr>
<tr>
<td>CTN</td>
<td>Coalition Theory Network</td>
<td>Carlo Carraro</td>
</tr>
</tbody>
</table>

### 2005 SERIES

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Title</th>
<th>Editor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCMP</td>
<td>Climate Change Modelling and Policy</td>
<td>Marzio Galeotti</td>
</tr>
<tr>
<td>SIEV</td>
<td>Sustainability Indicators and Environmental Valuation</td>
<td>Anna Alberini</td>
</tr>
<tr>
<td>NRM</td>
<td>Natural Resources Management</td>
<td>Carlo Giupponi</td>
</tr>
<tr>
<td>KTHC</td>
<td>Knowledge, Technology, Human Capital</td>
<td>Gianmarco Ottaviano</td>
</tr>
<tr>
<td>IEM</td>
<td>International Energy Markets</td>
<td>Anil Markandya</td>
</tr>
<tr>
<td>CSRM</td>
<td>Corporate Social Responsibility and Sustainable Management</td>
<td>Sabina Ratti</td>
</tr>
<tr>
<td>PRCG</td>
<td>Privatisation Regulation Corporate Governance</td>
<td>Bernardo Bortolotti</td>
</tr>
<tr>
<td>ETA</td>
<td>Economic Theory and Applications</td>
<td>Carlo Carraro</td>
</tr>
<tr>
<td>CTN</td>
<td>Coalition Theory Network</td>
<td>Carlo Carraro</td>
</tr>
</tbody>
</table>