WORKSHOP –REPORT

"Environmental accounting and ecological balance for the management of protected areas"

ALPARC's Working Group "Environmental performance evaluation and ecological balance"

14th of June 2010

Cimolais - Italy

PRESENTS *(in alphabetical order)*

BOGNER Daniel (Umweltbüro Klagenfurt)	IACOLETTIG Gabriele (protected fauna service of Friuli Venezia Giulia Region)
BURLANDO Maurizio (Beigua Natural Park)	LA RAGIONE Claudio (Orobie Valtellinesi Natural Park)
CIPOLAT MIS Valentina (University of Trieste-IT)	MARANGON Francesco (University of Udine-IT)
COPETTI Filippo (Prealpi Giulie Natural Park)	MASELLI Elena (Task Force Protected Areas)
COSSUTTA Antonio (Cooperativa S.T.A.F.-Dolomiti Friulane Natural Park)	POLITTI Emilio (Umweltbüro Klagenfurt)
CRISTIN Diana (University of Udine)	SANTI Stefano (Prealpi Giulie Natural Park)
DANELIN Graziano (Dolomiti Friulane Natural Park)	SPOTO Maurizio (Natural Reserve Marina of Miramare)
DI BERNARDO Sandro (Dolomiti Friulane Natural Park)	TROIANO Stefania (University of Udine)
GRANZIERA Eugenio (Dolomiti Friulane Natural Park)	VISINTIN Francesca (C.E.T.A. – Centre for Theoretical and Applied Ecology)

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The Task Force Protected Areas of the Permanent Secretariat of the Alpine Convention organises this event for the Alpine Network of Protected Areas - ALPARC.

Monday, 14th of June 2010

1. **Introduction and welcoming by the President of the Dolomiti Friulane Natural Park (Mr.MARTINI)**

2. **Welcoming by the Director of the Dolomiti Friulane Natural Park (Mr.DANELIN)**

3. **Introduction ALPARC (Mrs MASELLI)**

Presentation of the participants going round the table => mains ideas developed:

- the objective is to collect financial resources via the evaluation of the ecosystem services supplied by parks and to charge them to the users;
- the importance to be able to translate into monetary value the services supplied by parks
- different Italian regions ask to the parks to be self-financed in their actions of management and nature conservation
- we need to create markets for the ecosystem services (ex: working of TROIANO on PES/PESAL)
- Quite a lot of expectations on the SARA model
- The Italian parks are more used "to make" than "to say" but today it is necessary to communicate more and to think of the strategies (with eco-balance)

Presentation of ALPARC Network *(referring to the PPT presentation)*

The theme on indicators will be a working priority in the new working program of the ALPARC network for years 2011-2012.
Furthermore, the ALPARC network introduced a working project with the Swiss parks network for the elaboration of an indicators system to estimate the efficiency of the management measures of the protected areas. A workshop on this theme will be held in Switzerland next September (in September 8-9-10th, 2010 in Entlebuch- CH). For more information, consult the www.alparc.org .

4. **Introduction to the Workshop (Mr SANTI)**

Presentation of the workgroup.
The working group "Environmental performance evaluation and ecological balance" is the last one born in the Network of the Alpine Protected Areas (ALPARC). It was established to realize evaluation of the value of the services furnished by the ecosystems in the protected areas (also from an economic-monetary point of view) and to realize a common methodology for the realization of a model of ecological balance and environmental accounting of the protected areas.

Two workshops have been realized on the theme: " Indicators and efficiency of protected areas management 1) Dobbiaco / Toblach ,May 11-12th 2006
2) Cogne , May 10-11th 2007

The objectives of this Working group meeting are:
1 – to present activities of the working group
2 – to present the S.A.R.A. project
3 – to propose a common working methodology and evaluate the services furnished by protected areas
4 – to enable staff from different protected areas to meet and know each other.

5. **Introduction to the topic (Mr MARANGON)**

(referring to the PPT presentation)
By looking at the materials balance model, we have been able to identify clearly three economic functions of the environment:

- resource supplier

- waste assimilator
- direct source of utility

They are economic functions because they all have a positive economic value: if we bought and sold these functions in the market-place they would all have positive prices.
The dangers arise from the mistreatment of natural environments because we do not recognize the positive prices for these economic functions.

- Environmental goods and services often have no market price tag and a considerable amount of uncertainty can surround their true value.
- To make comparisons involving an unprized good or service, it is necessary to impute a value.
- Imputing values involves finding a willingness to pay measure in circumstances where markets fail to reveal this information

Monetary valuation of non-market environmental assets may be more or less **imperfect** given the particular asset together with its environmental and valuation contexts; but, invariably, some valuation explicitly laid out for scrutiny by policy-makers and the public, **is better than none**, because none can mean some **implicit** valuation shrouded from public scrutiny

Why do we value the environment?
The economic evaluation of the environment helps decision-makers to integrate into the decision-making process the value of environmental services provided by ecosystems. Direct and external environmental effects are expressed in monetary terms in order to integrate them into the calculation of homogenous aggregate CBA indicators of net benefits.

Evaluating environmental impacts in investment projects
Most public infrastructure projects have negative or positive impacts on the local and global environment. Typical environmental impacts are associated with local air quality, climate change, water quality, soil and groundwater quality, biodiversity and landscape degradation, technological and natural risks. A decrease or increase in the quality or the quantity of environmental goods and services will produce some changes, gains or losses in social benefits associated with their consumption.

Different international organization starts to study this topic:

The Economics of Ecosystems and Biodiversity **(TEEB)** study is a major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation, and to draw together expertise from the fields of science, economics and policy to enable practical actions moving forward.

EX: One report estimated the cost of building and maintaining a more comprehensive network of global protected areas – increasing it from the current 12.5%-14% to 15% of all land and from 1% to 30% of the seas – would be $45bn a year, while the benefits of preserving the species richness within these zones would be worth $4-5tn a year".

6. A model of an environmental accounting for the system of the natural protected areas in Friuli Venezia Giulia (Mrs.VISINTIN)

(referring to the PPT presentation)
Presentation of the environmental model of accounting from the SARA project. The plan of the satellite accounts of the environmental system accounting is illustrated.

Since 2007[1] the C.E.T.A. and the Friuli Venezia Giulia Region have collaborated in order to establish an environmental accounting model for the Regional Environmental Areas System. The model aimed to integrate economic (cost and revenue) with environmental accounting, that reflect not only environmental cost but also environmental revenue, that is environmental benefit. The difference

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between costs and benefits, both economic and environmental, assessed the value produced or consumed by the protected areas. The model is indicated as flow budget. The study analysed two of the four flows: biosphere-technosphere, which assessed environmental benefits and economic revenue; technosphere-biosphere, which assessed environmental and economic costs. Flows from biosphere to technosphere are the ecosystem functions (for example Climate regulation, Soil formation, Biological control, Food production, Raw materials, Recreation, Cultural, etc.). Economic valuation of the protected areas ecosystem functions assessed environmental benefits. The technosphere-biosphere template describes how humane activities consume natural resources and reports the monetary valuation. Human activities are divided in sectors labelled with the management scope of the protected areas (management, tourism, education, accounting, etc.). In order to reclassify economic cost and revenues we applied the Long Term Financial Plan (LTFP) model. Valuing and reclassifying as described, we tried to assess the natural heritage produced or consumed by the protected areas. From an analytical point of view, in general protected areas environmental accounting shows net benefits. This means that: natural resources management in protected areas produces heritage and applies sustainable development, conservation and valorisation policies; net benefits covers part of or all public investments.

7. The value of the protected natural areas: the budget of sustainability of the Beigua park (Liguria)

(referring to the PPT presentation)

- ⇨ Presentation of the natural reserve of Beigua.
- ⇨ the main problem concerns that administrators want that the park can be self-financed with a logic of park as a company.
- ⇨ In 2005, the park made a first experience of environmental accounting thanks to the realization of a sustainable balance.

8. The value of the protected natural areas: the environmental accounting of the Natural Reserve Marina of Miramare (Trieste) (Mr SPOTO)

(referring to the PPT presentation)

- ⇨ Specific problems connected to the marine environment and its environmental control.
- ⇨ The second cycle of environmental experiment of the balance accounting in association with the University of Udine and the CETA.
- ⇨ The recurring confusion with the terminology on the various "not traditional" types of balance accounting
- ⇨ the necessity of making more clarity to avoid this confusion, in particular in the outside and towards stakeholders.

9. **Economic and Social Impacts of Protected Areas on Rural Regions: evaluation and parameters (Mr BOGNER)** *See Appendix 1. (pag.6)*

(referring to the PPT presentation)

- ⇨ National parks and other nature protection areas are well monitored when it comes to ecological issues but their economic values have received less attention
- ⇨ Parks become more and more model regions for sustainable development; hence also social and economic impact on rural regions has to be considered and monitored
- ⇨ Case studies exist where the local economic impacts of parks have been estimated. The applied methods vary a lot resulting in incomparable results
- ⇨ There are a lot of studies about economic local effects of PPAA, but incomparable.
- ⇨ Presentation of the ERA eco region alpe adria project (A-IT-Sl)
- ⇨ Indicators: who is the user of results?

10. General discussion, conclusions and definition of a road map for the environmental accounting

- ⇨ The working group decides to present a formal request written to the Friuli Venezia Giulia region to ask for using and for the exploitation of the SARA model at the level of the alpine arc;
- ⇨ The 3 parks leader of this workgroup will take care to write this letter and to send it in association with ALPARC;
- ⇨ **The SARA project could be presented during the General Assembly of the ALPARC Network in October in Switzerland in the form of a poster.**

APPENDIX 1.

Economic and Social Impacts of Protected Areas on Rural Regions: Evaluation and Parameters

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In nowadays, protected areas do not simply comply to nature protection duties but play also a relevant role in supporting the development of local, sustainable economies. Natural Parks support to local economies is given in both direct and indirect ways. In the first case, by employing local labor force, in the second by consuming local goods and services from local suppliers. Nonetheless, Parks act also as attractor for tourists, therefore stimulating local activities such hospitality businesses, agriculture and other commercial initiatives. Yet, Parks give also their contribution at social level by conserving the landscape cultural heritage. Societal contribution is also given by the work opportunities afforded by the Parks. Such chances in fact can prevent emigration phenomena which are typical in neglected, natural areas with little economic development.
All in all, these effects positively affect the local economy which benefits from the existence of the Natural Park. However, despite the value added provided by the Parks, the public opinion perception of such value is not fully understood. In order to effectively communicate their positive impact on the economy and society, Parks need for tools able in first instance, of quantifying these impact and in second place of communication strategies that can convey the gathered information.
The first step toward the recognition of Parks positive socio-economical impacts afforded to the hosting communities is a set of measures that can quantify such benefits.
Benefits given by the Parks are however difficult to measure, in this scope, the use of indicators can lead to a reliable approximation of the real added value brought from Parks. Salient characteristics of indicators are meaningfulness, portability and maintainability.
The gathered measures in fact must carry information which is relevant in estimating the dimension of the socio-economic development stimulated by the Park. Yet, the measure of the indicator has to be easily replicated in other Parks. The ease of replication gives ground to the development of standard indicators sets that can be used for cross comparison among Parks to estimate the best performances and as a basis for improvement plans. Finally, the indicators' measurement has to be periodically repeated in order to supply mid and long term evaluation trends. Periodic measurement implies constant resources and data availability. Once collected, the information regarding the indicators must be aggregated in order to provide an exhaustive overview of the Parks positive effects.
Example of fit indicators to estimate the influence of Parks in the local economy are census data about the average population income, the population age structure and the trend of these indexes. Furthermore, other types of indicators can be the number of overnights staying in local hospitality

facilities, the number of visitors the Park receives or other statistical data gathered through field surveys.
The choice of the indicators must adopt a careful selection strategy to guarantee the fulfillment of the monitoring objective. Yet, a relevant question to be addressed while defining the indicators set and aggregation methodology is the target audience that will use the outcome from the indicators' values analysis. This because managers, policy makers and public opinion are not specialist in environmental accounting. Therefore complex methods or large datasets might not be very suitable for effectively survey the Parks economic value and impact. Inefficiency of complexity lies in the difficulty of results interpretation by non experts. Yet, complex methods require skilled personnel to be operated and maintained.
A good support to the implementation of maintainable, economically sound, usable and portable evaluation can be given by most recent information technologies. Currently there are in fact a large number of open source, freeware and freely accessible cloud or desktop technologies for collecting, storing, processing and displaying data. State of the art technology has the advantage of being easily redistributed, upgraded and, when carefully designed, allows ease of usage.
The Alpine region is not insensitive to the needs of valuing the economical impact of Nature protection areas and National Parks. This attention is witnessed by numerous projects aimed in developing frameworks and methods to evaluate and raise the public opinion awareness about the socio-economic positive impacts given by Parks. Nonetheless, these initiatives, so far, have evolved independently and lack for standardization which can play a key role in the achievement of the monitoring goals.
Homogeneity of measured indicators and evaluation methodology can in fact allow in first, economies of scale in the framework and method development and maintenance. Secondly, standardization would lead to a common format for conveying the evaluation results. This last factor has non trivial implications when coming to communication of results, in fact a standard format widely adopted is more easy to promote and in second instance more recognizable by a broader audience.
Ultimately Parks and Nature protection areas needs for a standard, economically sound and technically feasible indicators set which can easily and meaningfully portray their socio-economic positive impacts. Such necessity is both relevant at management and result dissemination level. The monitoring programs undertake by single Park institutions are a valuable starting point, however, the different experiences need to be brought together. In this perspective, further workshops and technical sessions should be carried on in order to achieve a common, consensus based evaluation tool.