

Organisation

CURSA University Consortium for Socioeconomic and Environmental Research, University of Molise and Lands srl – Expert Network for Sustainable Development.

Primary methodology reference

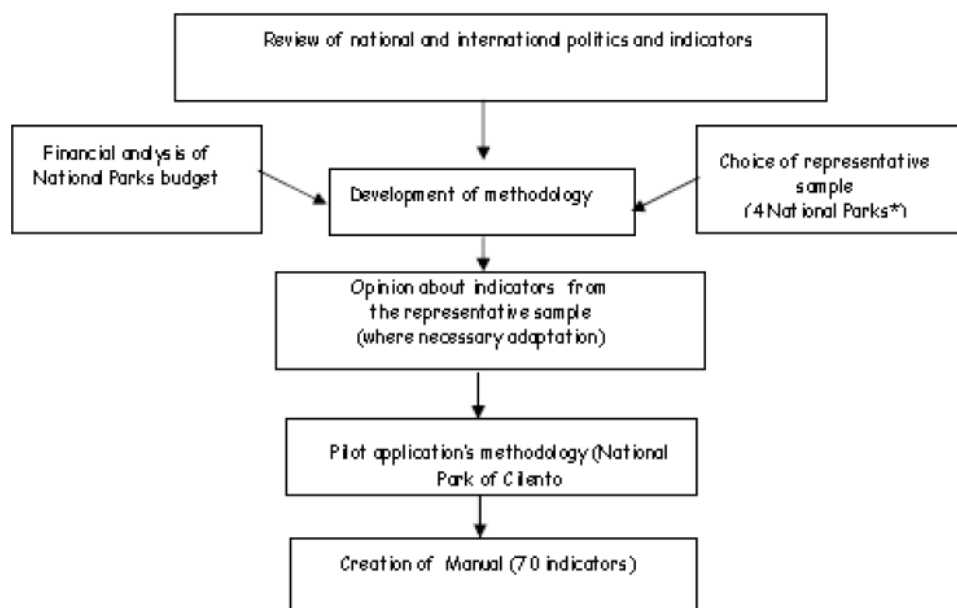
Marino D., (eds), Gaglioppa P., Marucci A., Palmieri M., Pizzuto P. (2012) “La valutazione di efficacia per le aree protette. Proposta di un modello di analisi (MEVAP) e manuale di applicazione” FrancoAngeli, Milano, Italy.

Marino D., (eds), Gaglioppa P., Marucci A., Palmieri M., Pizzuto P. (2012), “Protected Area Management Effectiveness Assessments. Proposal of an analysis model (MEVAP) and application manual” FrancoAngeli, Milano, Italy.

Brief description of methodology

The aim of MEVAP (Monitoring and Evaluation of Protected Areas) methodology is to assess and monitor protected areas management effectiveness through a set of indices. The method developed for the Italian protected areas takes into account the instructions and recommendations from national and international policies on biodiversity and sustainable development (General policy law n° 394, CBD, etc.).

Path to work



*Gran Paradiso, Dolomiti Bellunesi, Majella, Cilento Vallo di Diano National Parks

MEVAP allows:

- ✓ A macrolevel assessment of protected area management: the achievement of national goals and objectives in observance of international treaties and national strategies;
- ✓ A microlevel assessment of protected area management: developing methods and criteria in order to diffuse Best Practice arising from the assessment of local management system.

The evaluation of management effectiveness is achieved by the assessment of a set of selected indices. The criteria used for selecting indices are:

- ✓ Ease of collection;
- ✓ Quantification;
- ✓ Representativeness;

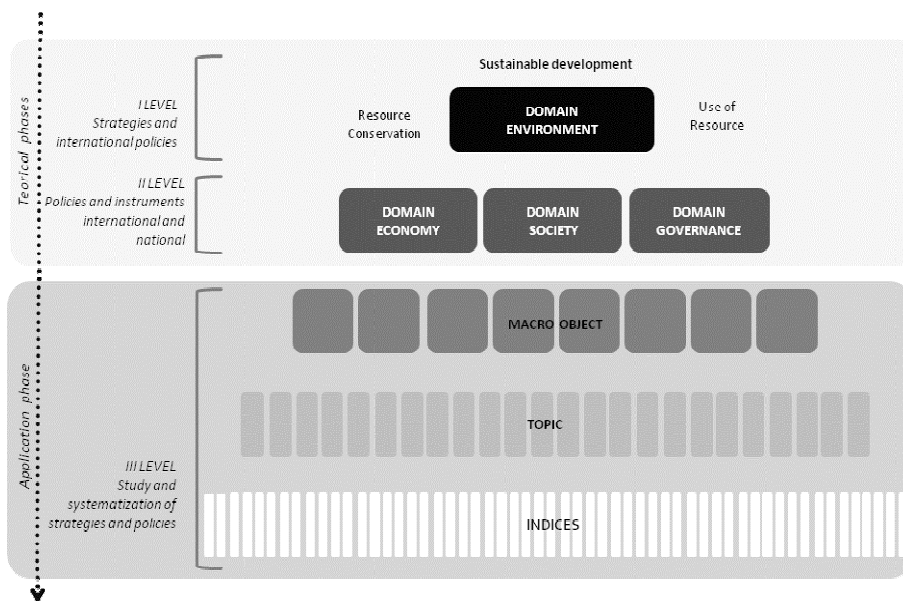
- ✓ Scientific relevance;
- ✓ Transferability.

Indices are associated with 4 domains: Environment, Economy, Governance, Society. Every domains is related with macroobjectives and topics. Successively the methodology has been adapted to IUCN-WCPA framework (see paragraph on elements and indices).

Example:

Domain	Macro-object	Topic	Index
Environment	Natural capital	Biodiversity and genetic resources	Levels of threat to animal species
Economy	Reconversion of productivity and promotion of sustainable activities (L. 394/91)	Δ+ products with quality certification	Presence of trademark
Society	Access to resources and benefits	Access to basic services (Quality of services)	Society
Governance	Increase management efficiency	Park as a generator of creative projects	Promotion of international co-operation

Theoretic Model



The figure shows the hierarchical order among elements of Sustainable Development referring to Protected Areas. Conservation and Resources Exploitation can be effected and can interact with Society, Economy and Governance, put under them. On the top there is Sustainable Development meant as the synthesis between two trends, Resources Conservation and Resources Exploitation. Society, Economy and Governance are Sustainability management tools able to generate processes affecting its evolution. For this reason the assessment of PA management effectiveness must take into consideration the maintenance of biodiversity without neglect social, economic and governance aspects and as well as human needs.

Purposes

- ✓ To improve management (adaptive management) primarily at a microlevel and afterwards at a Macrolevel widening the range of the study to a National Park network at a system level;
- ✓ For accountability/audit;
- ✓ To raise best practices and support to Protected Areas authorities.

Objectives and application

MEVAP is a scientific tool designed to be flexible and accessible to different needs and context. It is made up of a wide range of 87 indices which have been divided in core and supplementary. The set of indices can be adapted and used in different circumstances and context:

- Evaluation or selfevaluation of protected areas management effectiveness;
- To provide support for Best Practice diffusion;
- Supporting different environmental procedures and programs like ISO 14001, The EU EcoManagement and Audit Scheme (EMAS) and Agenda 21 or State of the Environment Reports;
- In sectorial studies concerning protected areas (tourism, agriculture, etc.);
- Supporting procedures for Environment Balance and/or Sustainability Balance.

Origins

The General Directorate “Nature Protection” of The Ministry of the Environment and Territory charted prof. Davide Marino and continued by C.U.R.S.A. (University Consortium for Socioeconomic and Environmental Research), University of Molise and Lands srl – Expert Network for Sustainable Development with workingout a plan to assess the Italian National Parks in order to fulfil obligations under CBD’s Programme of Work on Protected Areas (goal 4.2 To evaluate and improve the effectiveness of protected areas management). Finally was created API to evaluate of management effectiveness of protected areas in Italy. Today, API consists of a set of 250 indicators divided in 4 sectors: Environment, Economy, Governance and Society. The detail of the indicators recorded down to municipal level. The online API database (www.bancadatiapi.it) is designed as a scientific portal, for the exchange of experience and information about the world of protected areas in Italy: the institutions, working groups, students may increase the website’s content by publishing their researches.

Strengths

- High information details
- Possibility to evaluate Park management effectiveness in relation to the context
- A lot of data are objective and quantitative. Their information retrieval are official and outside the Park Authority. Because of these reasons the data are useful to a selfevaluation.
- The methodology is set out in high number of indices and related index and can be applied to different needs and context (see paragraph on objectives and application).

Constraints and weaknesses

- The information retrieval can be complex and expensive
- The information retrieval can be not updated and/or not reliable in territorial scale
- Sometimes the data analysis and evaluation can be not effective because of unavailability of historical series

How the methodology is implemented

The work is in progress. MEVAP’s team is assessing Cilento Vallo di Diano National Park, Gran Paradiso National Park and Circeo National Park but the aim of the project is to develop an evaluation of the wide Italian National Parks. Taking into account the nature of methodology

(flexible and accessible to different needs) MEVAP can be also implemented in different kind of protected areas (marine reserves, etc).

MEVAP: Indices

<i>Domain</i>	<i>Macro- objective</i>	<i>Topic</i>	<i>Index</i>
Environment	Natural capital	Biodiversity and genetic resources	Floristic richness
Environment	Natural capital	Biodiversity and genetic resources	Faunistic richness
Environment	Natural capital	Biodiversity and genetic resources	Fichness of vetetation
Environment	Natural capital	Biodiversity and genetic resources	Natura 2000 network
Environment	Natural capital	Biodiversity and genetic resources	Level of threat to vegetable species
Environment	Natural capital	Biodiversity and genetic resources	Level of threat to animal species
Environment	Natural capital	Biodiversity and genetic resources	Level of threat to Habitats
Environment	Natural capital	Biodiversity and genetic resources	Ecosystem services (ES)
Environment	Natural capital	Water Resources	Surface waters quality
Environment	Natural capital	Water Resources	Groundwaters quality
Environment	Natural capital	Water Resources	Marine and costal waters quality
Environment	Natural capital	Forest resources and landscape	Forest fire
Environment	Natural capital	Forest resources and landscape	Forest area condition and quality
Environment	Natural capital	Forest resources and landscape	Level conservation landscape
Environment	Natural capital	Soil and subsoil	Geological fragility
Environment	Level of use (sustainability of resource use)	Biodiversity and genetic resources	Genetic variation in agriculture and in zootechnics
Environment	Level of use (sustainability of resource use)	Water Resources	Intensity of water exploitation
Environment	Level of use (sustainability of resource use)	Forest resources and landscape	Forest resources exploited
Environment	Level of use (sustainability of resource use)	Soil and subsoil	Soil exploitation
Environment	Maintenance and management of resources	Biodiversity and genetic resources	Collection and germplasm bank and/or conservatory
Environment	Maintenance and management of resources	Biodiversity and genetic resources	Management of fauna
Environment	Maintenance and management of resources	Biodiversity and genetic resources	Recovery of agricultural and zootechnic genetic resources
Environment	Maintenance and management of resources	Water Resources	Waste water management
Environment	Maintenance and management of resources	Forest resources and landscape	Reforestation
Environment	Maintenance and management of resources	Forest resources and landscape	Management of forest resources
Environment	Maintenance and management of resources	Forest resources and landscape	Activity of environment recovery
Environment	Maintenance and management of resources	Soil and subsoil	Cost to prevent damages from hydrogeological upheaval
Environment	Maintenance and management of resources	Soil and subsoil	Cost to restore damages from hydrogeological upheaval

<i>Domain</i>	<i>Macro- objective</i>	<i>Topic</i>	<i>Index</i>
Economy	Socio-economic impact	Impact on resources	Agriculture pressure in the environment
Economy	Socio-economic impact	Impact on resources	Sewage purification capacity
Economy	Socio-economic impact	Impact on resources	Tourist intensity
Economy	Socio-economic impact	Impact on resources	Production of urban solid waste
Economy	Socio-economic impact	Impact on resources	Proximity of sites at risk of incident
Economy	Socio-economic impact	Impact on resources	Pressure from road infrastructure
Economy	Socio-economic impact	Income	Economic welfare
Economy	Socio-economic impact	Employed	Employment in economic sectors
Economy	Green economy	Carbon efficiency	Consumption of energy
Economy	Green economy	Carbon efficiency	Sustainable mobility
Economy	Green economy	Carbon efficiency	Energy production through alternative energy resources - Countries
Economy	Green economy	Level of dematerialisation	Energetic intensity
Economy	Green economy	Level of dematerialisation	Production of services and goods with a low intensity of material

Economy	Green economy	Certified products	Local products
Economy	Green economy	Certified products	Farms and zootechnical enterprises agreeing to environmentally friendly measures and which practise organic farming
Economy	Green economy	Certified products	Sustainable management from local authorities and local enterprise
Economy	Green economy	$\Delta+$ Sink CO2	absorption capacity forest ecosystems
Economy	Green economy	$\Delta+$ Sink CO2	Absorption capacity agropastoral ecosystems
Economy	Green economy	Hydrological balance	Water Balance
Economy	Conversion of the economic system	Carbon efficiency	Energy independence (Park)
Economy	Conversion of the economic system	Carbon efficiency	Alternative Energy Project Funding (Park)
Economy	Conversion of the economic system	Park laboratory	Enterprises related with the park respect the total of enterprises
Economy	Conversion of the economic system	Park laboratory	Certified products deriving from projects promoted by Park
Economy	Impact of local socio-economic system	Tourism	Tourist flows
Economy	Conversion of the economic system	Certified products	Presence of trademark

<i>Domain</i>	<i>Macro- objective</i>	<i>Topic</i>	<i>Index</i>
Society	Human capital	Socio demographic characteristics	Population density and development
Society	Human capital	Social capital	Level of instruction
Society	Access to resources and benefits	Access to basic services (Quality of life)	Social capital quality
Society	Access to resources and benefits	Access to basic services (Quality of life)	Socio-cultural activities
Society	Access to resources and benefits	Access to basic services (Quality of life)	Quality of life
Society	Access to resources and benefits	Access to basic services (Quality of services)	Stakeholders' perception of benefits
Society	Access to resources and benefits	Access to basic services (Quality of services)	Local residents' perception of benefits
Society	Educational and scientific function	Access to goods and services protected area	Structures managed by the park
Society	Educational and scientific function	Access to goods and services protected area	Visitors' satisfaction
Society	Educational and scientific function	Access to goods and services protected area	Environmental education
Society	Educational and scientific function	Access to goods and services protected area	biking and hiking trails
Society	Educational and scientific function	Access to goods and services protected area	Botanical garden
Society	Educational and scientific function	Access to goods and services protected area	Faunistic Area
Society	Educational and scientific function	Access to goods and services protected area	Scientific research

<i>Domain</i>	<i>Macro- objective</i>	<i>Topic</i>	<i>Index</i>
Governance	Increasing the management capacity territory	Function rate	Administration complexity
Governance	Increasing the management capacity territory	Function rate	Functioning of Park board
Governance	Increasing the management capacity territory	Function rate	Management and planning instruments
Governance	Increasing the management capacity territory	Function rate	Other management plans
Governance	Increasing the management capacity territory	Function rate	Management of AIB service (Antifire wooded plan)
Governance	Increasing the management capacity territory	Function rate	Payment for environmental services (territory)
Governance	Increasing the management capacity territory	Function rate	Indemnification
Governance	Increasing the management capacity territory	Function rate	Administrative sanctions
Governance	Increasing the management capacity territory	Function rate	Intervention plans
Governance	management capacity of the territory (local authority)	Function rate	Other plans obligatory
Governance	management capacity of the territory (local authority)	Function rate	Civil protection structures

Governance	management capacity of the territory (local authority)	Level of planning	Environmental planning capacity (local authority)
Governance	Increase management efficiency	Park as a generator of creative projects	Environmental planning capacity (protected areas)
Governance	Increase management efficiency	Park as a generator of creative projects	Promotion of international co-operation
Governance	Increase management efficiency	Park as a generator of creative projects	Funding through planning activities
Governance	Increase management efficiency	Park as a generator of creative projects	Bioecological architecture
Governance	Increase management efficiency	Park as a generator of creative projects	Payment for environmental services
Governance	Increase management efficiency	Economic efficiency and financial	Staff
Governance	Increase management efficiency	Economic efficiency and financial	Balance indicators about revenue
Governance	Increase management efficiency	Economic efficiency and financial	Indicators on budgetary expenditure

Elements and indices

<i>WCPA Elements</i>	<i>Environment</i>	<i>Economy</i>	<i>Society</i>	<i>Governance</i>
Context	<ul style="list-style-type: none"> Floristics richness Faunistic richness Richness of vegetation Natura 2000 network Level of threat to vegetable species Level of threat to animal species Level of threat to Habitats Surface waters quality Groundwaters quality Marine and costal waters quality Wooded fire Forest area condition and quality Level conservation landscape Genetic variation in agriculture and in zootechnics Territory geologic brittleness 	<ul style="list-style-type: none"> Soil exploitation Agriculture pressure in the environment Tourist intensity* Production of urbansolid waste* Proximity of sites at risk of incident Consumption of energy Sustainable mobility* Pressure from road infrastructure Intensity of water exploitation Local products* Farms and zootechnical enterprises agreeing to environmentally friendly measures and which practice organic farming* Energy production through alternative energy resources* Production of services and goods with a low intensity of material * Energetic intensity Water Balance Economic welfare Absorption capacity* 	<ul style="list-style-type: none"> Growth and population density Social capital quality Quality of life 	<ul style="list-style-type: none"> Bioecological Architecture*
Planning				<ul style="list-style-type: none"> Environmental planning capacity Administration Complexity management and planning instruments Indicators on fulfilment of legal obligations
Input			<ul style="list-style-type: none"> Environmental education* 	<ul style="list-style-type: none"> Funding through planning activities Staff Balance indicators about revenue
Process		<ul style="list-style-type: none"> Sewage purification capacity Sustainable management from local authorities and local enterprise 		<ul style="list-style-type: none"> Functioning of Park board National and international cooperation activities Indicators on

<i>WCPA Elements</i>	<i>Environment</i>	<i>Economy</i>	<i>Society</i>	<i>Governance</i>
				budgetary expenditure <ul style="list-style-type: none"> • Management of AIB service (Antifire wooded plan) • Surveillance and sanction activities • Indemnification • Cost to prevent damages from hydrogeological upheaval • Cost to restore damages from hydrogeological upheaval • Intervention plan
Output	<ul style="list-style-type: none"> • Botanical garden • Faunistic Area • Collection and germplasm bank and/or conservatory 	<ul style="list-style-type: none"> • Tourist intensity* • Production of urban solid waste* • Sustainable mobility* • Local products* • Farms and zootechnical enterprises agreeing to environmentally friendly measures and which practice organic farming* • Energy production through alternative energy resources* • Production of services and goods with a low intensity of material * • Enterprises related with the park respect the total of enterprises • Presence of trademark • Sustainable wooden production 	<ul style="list-style-type: none"> • Stakeholders' perception of benefits • Local residents' perception of benefits • Environmental education* 	<ul style="list-style-type: none"> • Management of forest resources • Management of fauna • Activity of environment recovery • Reforestation • Bioecological Architecture*
Outcome	<ul style="list-style-type: none"> • Botanical garden • Faunistic Area • Collection and germplasm bank and/or conservatory 	<ul style="list-style-type: none"> • Absorption capacity* 	<ul style="list-style-type: none"> • Visitors' satisfaction 	

*Some indices can be valued both as context and as output. They can be put in the output box when the Park promotes (directly or indirectly) projects and activities related with indices and/or aimed at their achievement. Otherwise they can be put in the context box.

* "Absorption capacity" can be valued both as context and as outcome depending on Park's policy and intervention in this field

*Taking into account the different index of this indices, "Environmental education" can be valued both as input (index: voluntary camp) and as output (index: doctoral thesis, environmental education centres etc.)