

Ecosystem Services Assessment, Valuation and Market-based Approaches What's Going on in Protected Areas?

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Abstract

This report presents the results of the workshop “Improving Governance of Protected Areas through Payments for Ecosystem Services and other self-financing mechanisms”. The workshop was held at the conference “Little Sydney: Protecting Nature in Europe”, between May 28 and 31, 2015 in Hainburg-Donau, Austria. It includes brief summaries provided by the workshop speakers, invited contributions, as well as concluding remarks by the organizers of the conference. The report provides case studies that discuss participatory and site-based approaches to the valuation of ecosystem services, and highlights the opportunities and challenges related to the development of market-based mechanisms, including payment for ecosystem services schemes, that are established to specifically support protected areas and biodiversity conservation.



This publication is a record of proceedings and the views expressed are those of the authors and participants and not necessarily official policy of IUCN, IUCN CEESP or IUCN WCPA.

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Table of contents

Introduction, p 4

1. The LIFE + Making Good Natura Project: Participatory Approaches to Payment for Ecosystem Services by Davide Pellegrino, Pierluca Gaglioppa and Davide Marino, p 6
 2. Potential Contributions of TESSA to the Development of a Payments for Ecosystem Services Scheme by Kelvin S.H. Peh and Jennifer C. Merriman, p 11
 3. Quantifying and Evaluating the Effects of Protected Areas on the Economy and Society: A Case from Catalonia by Marta Subirà, Spain, p 15
 4. Payment for Ecosystem Services and the GESTIRE Project by Oliviero Spinelli, p 18
 5. PA BAT: The Protected Area Benefit Assessment Tool by Kasandra-Zorica Ivanić, p 20
 6. Biodiversity Offsets: An Opportunity for Funding Protected Areas in Chile by Victoria Alonso, p 23
 7. Partnering Business and Nature to Preserve Freshwater Ecosystems in Agricultural landscapes by Csaba Vaszkó, p 26
 8. Payments for Ecosystem Services: Linking Active Management to Bottom-up Market-based Mechanisms towards Effective Conservation in Natura 2000 Sites by Catie Burlando, p 30
- Conclusions, p 33

From Little Sydney to Hawaii

Little Sydney: Protecting Nature in Europe by Andrej Sovinc, p 37

From Little Sydney to the IUCN World Conservation Congress 2016 and beyond by Boris Erg, p 39

References, p 40

Introduction

Exclusionary conservation approaches in protected areas have met several challenges, including low effectiveness in biodiversity conservation, increased pressure from use of natural resource, as well as ethical and equity concerns (Lele et al., 2010). Recently, payment-based schemes for ecosystem services (PES or PES-like schemes) have been seen as a way to address or mitigate these challenges, to directly address the divergence between social and private benefits, as well as bypass government inefficiency, bureaucratic procedures and scarcity of budgetary resources (Wunder, 2005; Wunder, 2015). At the same time, new payment-based schemes can be seen as a real bottom up approach that recognizes (and gives back) a strong role to local communities. Yet, their real implementation requires addressing issues such as the marketization and privatization of nature, high transaction costs, inequities in decision-making and redistribution among local and external actors, as well as shifts in the role of the state (Corbera et al., 2007; Muradian et

New relationship models between public institutions and local actors, flexible regulatory systems, as well as legislation and governmental action are seen as essential prerequisites for establishing and developing effective and efficient PES schemes (Matzdorf et al., 2014). Further, the socio-cultural environment and existing institutional settings contribute to influencing outcomes. Thus, one of the main challenges regards the governance of PES schemes in protected areas, and specifically the integration of local communities and other stakeholders. The inclusion of all relevant stakeholders on both the buyer and the supplier side is crucial for uncovering the key factors influencing willingness to participate and to pay, as well as to heighten the motivation and trust of the parties involved (Matzdorf et al., 2014). However, the involvement of different stakeholders is challenging and new transdisciplinary methods are needed for integrating collective decisions (García-Nieto et al., 2014). As successful PES are often developed “bottom up”, attention to the role of intermediaries, the players mediating between service providers and beneficiaries, is crucial. For example, public institutions often act as regulators, co-financers or buyers on behalf of their citizens, in an attempt to serve public interest goals (Matzdorf et al., 2014).

In order to discuss these issues, the LIFE+ Making Good Natura team developed a workshop on “Improving Governance of Protected Areas through Payments for Ecosystem Services and other self-financing mechanisms” at the conference “Little Sydney: Protecting Nature in Europe”, held between May 28 and 31 in Hainburg-Donau, Austria.

The first part of the session featured several case study presentations focusing on the key emergent issues of PES and conservation financing mechanisms in the governance of protected areas. The second part featured a round table involving interaction between speakers and the public, and discussing the following three questions:

1. What are the risks associated with the valuation and commodification of nature when a PES schemes is introduced and developed?
2. What role do public institutions and other stakeholders play in the governance of protected areas when a PES-scheme is introduced and developed?
3. How can participatory approaches be integrated in the definition and implementation of a PES scheme?

We include brief summaries provided by the workshop speakers, invited contributions, as well as concluding remarks by the organizers of the conference “Little Sydney: Protecting Nature in Europe”.

1. The LIFE + Making Good Natura Project: Participatory Approaches to Payment for Ecosystem Services

Davide Pellegrino, Sapienza University
Pierluca Gaglioppa, LANDS NGO
Davide Marino, University of Molise

The Natura 2000 network is the cornerstone of the EU Biodiversity Strategy aimed at halting the loss of biodiversity and ecosystem services. One of the main challenges for Member States remains the lack of funding which is needed to implement management plans or address conservation issues. Funded by the European LIFE Programme under the “Environmental Policy and Governance” category, the LIFE+ Making Good Natura (MGN) project aims to develop innovative approaches to environmental governance, and improve Natura 2000 sites management effectiveness on the basis of the evaluation of Ecosystem Services (ES). Indeed, inclusion of ES analysis in conservation can increase the social acceptance and attainment of conservation objectives, as well as raise new arguments and tools in favour of biodiversity conservation.

In the context of uncertain state funding for biodiversity conservation, the MGN project seeks to define new ES governance and management tools, better known as Payment for Environmental Services (PES) for 21 Italian Natura 2000 sites (Figure 1). PES is a “voluntary” transaction where a “well-defined” ecosystem service (ES) or a land-use likely to secure that service is being “bought” by at least one ES “buyer” from at least one ES “provider”, if and only if, the ES provider secures ES provision (a requirement known as conditionality). However, the majority of PES schemes differ in practice from the above definition depending on the stakeholders involved, the institutional frameworks in place, and the environmental regulations in which PES schemes are developed.

The MGN project introduced the ES concept and the PES approach in 21 Italian Natura 2000 sites to support above all biodiversity conservation and the attainment of Natura 2000 conservation goals as well as to increase management effectiveness and social acceptability. The MGN project started by mapping ES through GIS analysis based on CORINE Land Cover (Figure 2), distribution of species and habitats and other geographic information needed as a basis to give a value to the different ES identified in the Millennium Ecosystem Assessment. From the initial phases of the project, we

engaged management authorities as well as local stakeholders through a participatory approach, including questionnaires, one to one interviews and public meetings, because we considered the role of public institutions and local stakeholders to be crucial for introducing as well as managing a PES scheme.

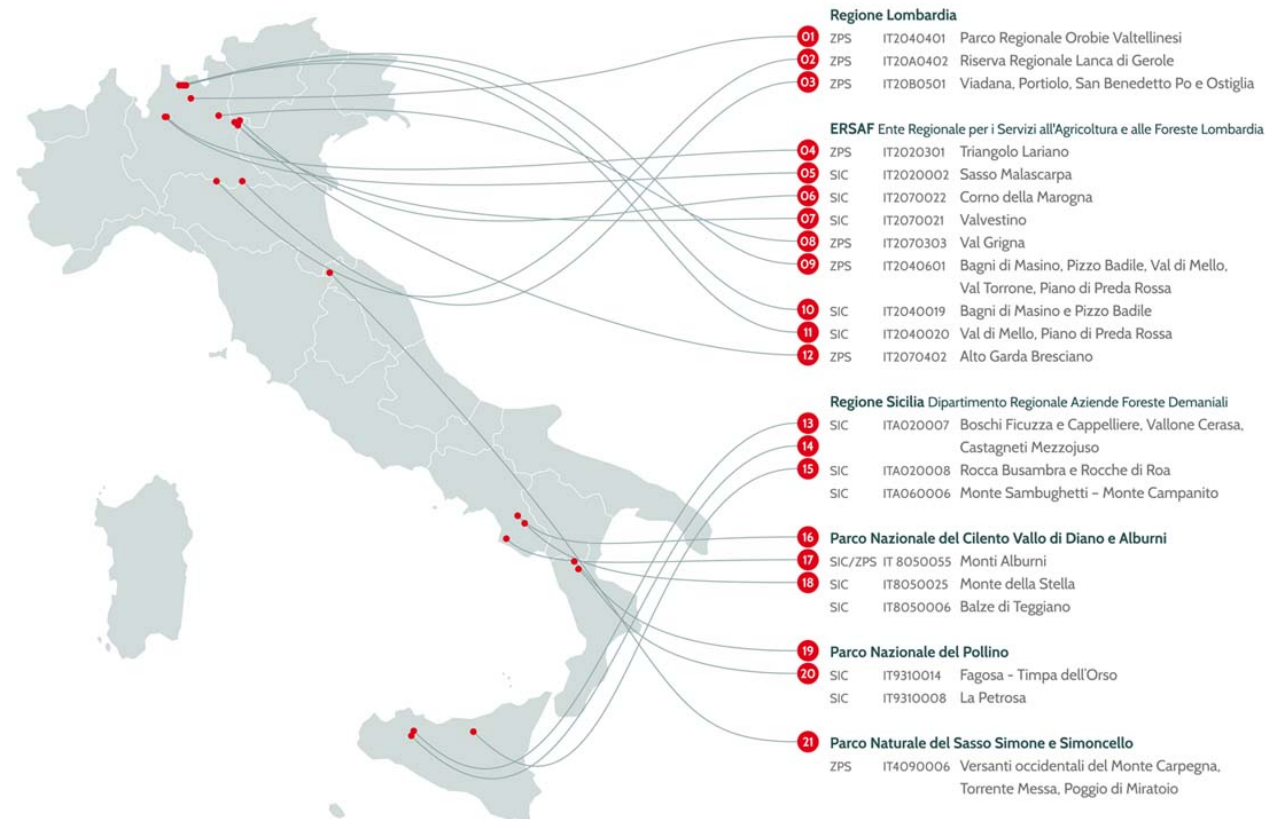


Figure 1. The 21 Natura 2000 sites involved in the LIFE+ MGN project. Source: <http://www.lifemgn-serviziecosistemici.eu>

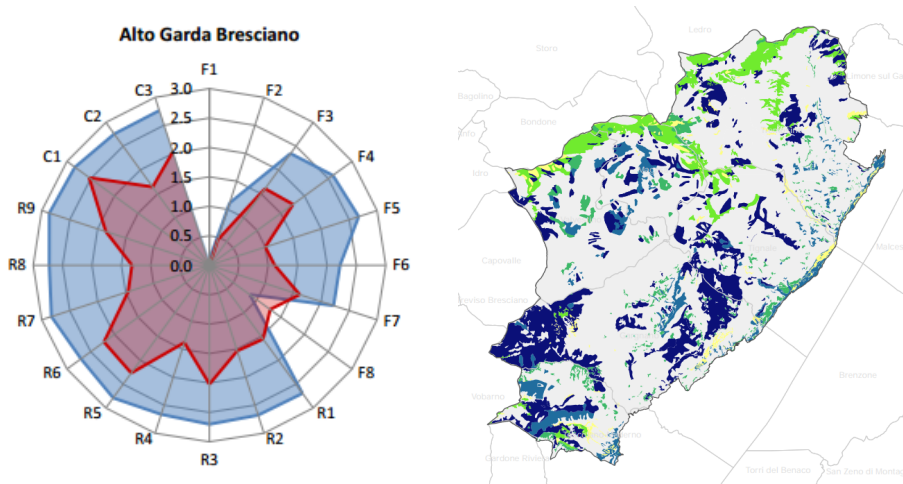


Figure 2. First qualitative evaluations and GIS analysis of ES for Alto Garda Bresciano site.
Source: http://www.lifemgn-serviziosistemici.eu/IT/Documents/doc_mgn/LIFE+MGN_Report_A2.4.pdf

The process unveiled a number of both expected and unexpected difficulties, including in identifying the ES and developing PES schemes through bottom-up approaches in the contexts where there was weak demand for ES and few intermediaries. Furthermore, we attempted to introduce PES schemes in areas with consolidated governance systems, where PES scheme already existed. These included agri-environmental payments for farmers and other kinds of environmental agreements, such as water tariffs and hydro power station duties.

Public consultation efforts, involvement and face to face meetings with service providers and local and regional authorities, as well as with the main local stakeholders and individual citizens, has allowed the team to develop valuable community relationships that are a fundamental requirement for defining and implementing effective PES schemes (Figure 3).



Figure 3. One of the first meeting with local stakeholders. Photo credit: LIFE+MGN

At present, we have defined and implemented several PES-like schemes, including:

- An agreement to support the conservation of genetic resources for the *Pinus leucodermis*, stipulated between the Pollino National Park and the group of volunteering associations engaged in forest fire prevention. The PES scheme represents an effective and concerted effort by the Park Authority to communicate the value of the pine to local associations. It also represents a first step towards addressing some of the threats imperiling this unique Mediterranean pine.
- An agreement to support sustainable grazing and pasture management between the Sasso Simone e Simon-

cello Natural Park and local breeders operating in an area designated for military activities within the boundaries of the park. The agreement commits breeders to pay an annual fee and to follow good pasture management practices (grazing frequency and intensity, other activities in the area, etc.). In return, the Park Authority is obliged to use this revenue specifically for conservation and restoration activities.

The LIFE MGN project will be finalized in 2016. The team continues to conduct fieldwork activities to identify two ES for each site, and to define and develop potential PES schemes in each of the 21 Natura 2000 Italian sites. The definition and implementation of PES schemes could follow different patterns according to the type of ES: a local level process for many water services, including spring and tap water and cultural services or, conversely, a national level scheme for ES, such as carbon sequestration, which provide widespread benefits.

For further information on the project, please visit the project link: <http://www.lifemgn-serviziecosistemici.eu>.

2. Potential Contributions of TESSA to the Development of a Payments for Ecosystem Services Scheme

Kelvin S.H. Peh, Centre for Biological Science, University of Southampton
Jennifer C. Merriman, BirdLife International

Simple tools for understanding the relationship between site conservation and ecosystem service provision have often been excluded from the development of Payments for Ecosystem Services (PES) schemes. Yet this information is important in order to understand what services are provided, to whom, and what the impact of changes in state of a site would be in terms of ecosystem services provision.

The Toolkit for Ecosystem Service Site-based Assessment (TESSA) has been designed to provide useful information on the benefits that people derive from a site compared to a plausible alternative (converted) state, thus helping to guide management and decision-making. TESSA can identify which ecosystem services may be important at a site; provide simple assessments of these services and assess how these would change if the site were altered; and indicate who would be the 'winners' and who would be the 'losers' as a result of any change in land use and ecosystem service delivery. Currently it contains a suite of rapid ecosystem service assessment tools for quantitative and/or qualitative estimates of five ecosystem services – climate regulation services, hydrological services, use of wild goods, nature-based recreation and cultivated goods. The guidance is suitable for a range of practitioners (e.g. conservation professionals, project or site managers, field officers, academic researchers and students), without necessitating investment of considerable resources or requiring specialist technical knowledge. By using TESSA, non-experts with limited capacity (i.e. limited budget, little manpower, time constraints) can provide scientifically credible data for decision-making and monitoring.

TESSA scientists and their collaborators have applied this decision-support toolkit in over 60 places around the world, thus TESSA has proven to be adaptable to diverse policy and management contexts. Outlined below are key areas that TESSA might be useful for in the design of a cost-effective PES. This will be explored for the first time in the Acaponeta watershed of north-western Mexico (Figure 4) through a project implemented by Pronatura Noroeste and BirdLife International, funded by the Tinker Foundation.

TESSA's potential contributions to a PES scheme development:

1. Scoping – identify the most relevant/important ecosystem services supplied within the site, and who benefits from these;

2. Identify and engage key stakeholders who receive benefits from the site or who incur current costs; including potential service buyers and providers, and involve them in all development stages as an important means to gaining support, initiating dialogue and building momentum for pursuing a PES scheme;
3. Assess current status – establish a baseline of ecosystem service provisioning by quantifying their supply, location and value;
4. Quantify the potential change in ecosystem services between plausible alternatives – e.g. demonstrate the change in benefit provisioning in terms of quality and quantity between the current state of the site and an alternative state (e.g. restored ecosystem / conversion to farming);
5. Determine where ecosystem service co-benefits or trade-offs exist;
6. Contribute to monitoring of the status of ecosystem service provision after establishment of the PES scheme.

The usefulness of TESSA, to a large degree, depends on relevant services being identified at the site, and the availability and the quality of the data collected at the site or from reliable sources. The data collected using TESSA methods could potentially be used for monitoring purposes although this is yet to be explored.

TESSA is not able to assess the feasibility of a PES in relation to governance, institutional capacity or financial mechanisms. The toolkit cannot define use thresholds or determine desired levels of service provisioning. Nevertheless, the toolkit can help to implement participatory approach and facilitate long-term engagement with the service providers (Figure 5) whilst providing an initial indication of the current provision of ecosystem services and how they may be affected by a change in state of the site. Hence, it could be used to complement other tools and approaches in supporting the development of a PES scheme.



Figure 4. The Acaponeta watershed of north-western Mexico. Photo credit: Isadora Angarita.



Figure 5. A participatory approach with the service providers from the Acaponeta watershed. Photo credit: Isadora Angarita.

For further information on TESSA, please visit the project link: <http://tessa.tools>.

3. Quantifying and Evaluating the Effects of Protected Areas on the Economy and Society: A Case from Catalonia

Marta Subirà, Director General for Environmental Policies, Government of Catalonia

PES-schemes have to address the difficult issues associated with the valuation and commodification of nature, including the task of assigning a value to one or more ecosystem services. Even though the risks of pricing nature are many, we have to admit that social and economic values are more widely understood than other intangible or less immediate values, such as the natural or conservation value themselves. Governments have to address this issue when protected areas are established, especially where local populations are reluctant to have their lands under a legal protection. Parks and protected areas are still too often seen as an obstacle to development by society in general. To overcome the negative perception associated with parks, the Government of Catalonia has developed a report showcasing the social and economic importance of 16 protected areas in Catalonia (Figure 6), seeking to quantify and evaluate the economic value of these protected areas and their surroundings. Our valuation study shows that the positive values accounted are only a small part of the overall benefits associated to protected areas. We believe this is a relevant and most valuable information to be communicated when designing a system of protected areas.

The study focussed on quantifying the Gross Added Value (GAV) and the number of jobs created in agriculture and in the service sector related to existing protected areas, as well as in activities associated to the management of the protected areas themselves. The results indicate that the 16 protected areas assessed generate €192 million per annum in terms of Gross Added Value, 83% of which in the service sector, 9% in the management of the protected areas and 8% in agriculture. In terms of employment, they generate 5,110 jobs (Figure 7).

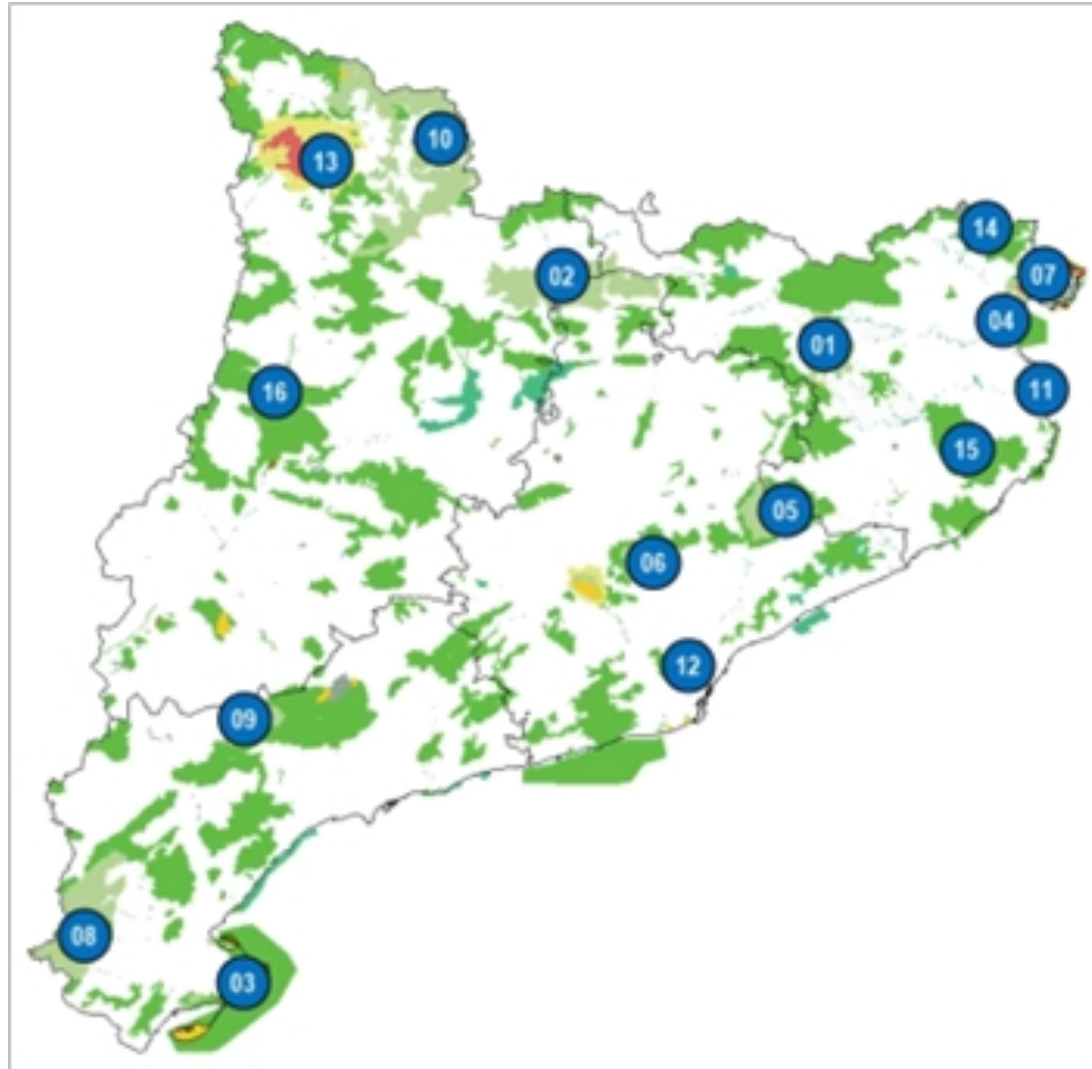


Figure 6. The case study sites in Catalonia.

http://mediambient.gencat.cat/ca/05_ambits_dactuacio/patrimoni_natural/senp_catalunya/impacte-economic-i-social-dels-espais-naturals-protegits/

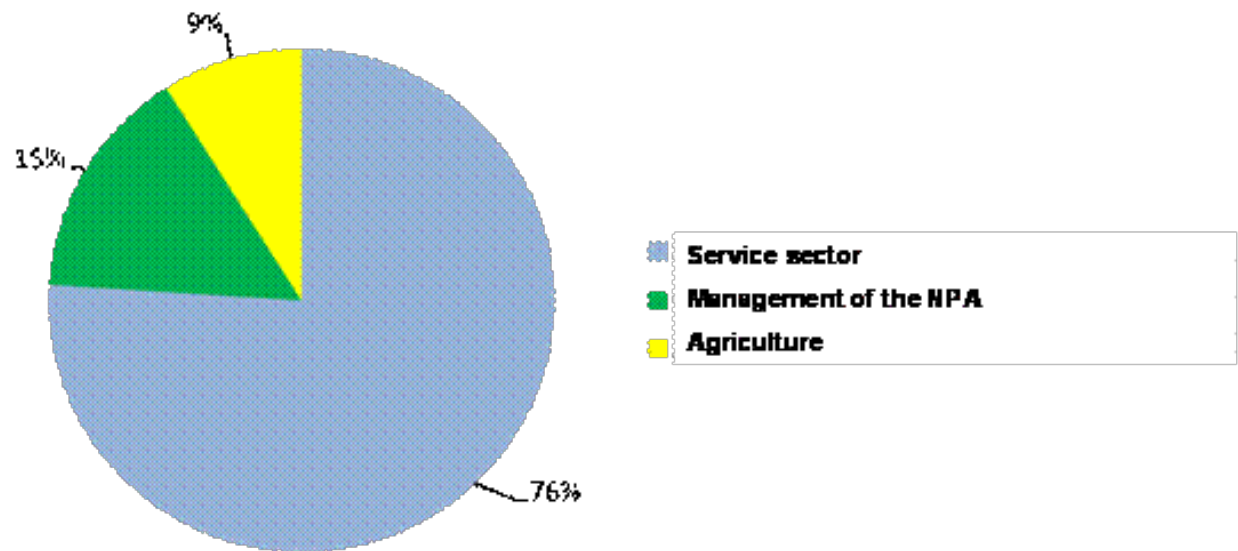


Figure 7. Percentage of Gross Added Value by sector. Source: Government of Catalonia.

The revenue from the service sector generates 1.26% of the total Gross Added Value from tourism in Catalonia. This is equivalent to:

- 1.5 times the revenue generated by the Gala-Dali Foundation;
- 2.6 times the revenue generated by the National Art Museum of Catalonia;
- 5% of the revenue generated by the cultural heritage of Catalonia as a whole.

In conclusion, our study shows that for every Euro invested in a protected area, 8.8 Euros of GAV are generated through a wide range of economic activities.

To access the full results of the report, please visit the project link:

http://obrasocial.lacaixa.es/deployedfiles/obrasocial/Estaticos/pdf/Medio_Ambiente/impacto_economico_y_social_espacios_naturales_protegidos_catalunya_ca.pdf

4. Payment for Ecosystem Services and the GESTIRE Project

Oliviero Spinelli, Comunità Ambiente

Cuts in public administration budgets and a growing interest by ordinary people in nature conservation are producing an expanding debate on the merits and risks connected to payments for ecosystem services (PES).

The “GESTIRE” project is aimed at defining methods and tools to build a regional strategy for the management Natura 2000 sites in the Lombardy region and is among one of the initiatives taking into consideration whether and how PES could be included in its regional strategy.

Managed by the Lombardy region and co-funded by both the European Commission through the LIFE program and by the Cariplo Foundation, GESTIRE aims at developing a Prioritised Actions Framework (PAF), from which to identify actions and financial resources needed for the conservation of the Natura 2000 sites.

The discussions surrounding the use of PES in Lombardy have raised a number of issues connected to the lack of a clear understanding of what is at issue. Should a PES scheme pay farmers and landowners to implement actions aimed at enhancing habitats of endangered species and/or at improving the quality of waters? Should the regional administration recognize the financial benefits in terms of carbon sequestration associated with the expansion of forests? Moreover, how can a service be distinguished from another, i.e. between above ground water and groundwater? How should the payer system work? Can a regional fund of compensation measures obtained outside the European ecological network be used to pay for services linked to Natura 2000? Which citizens should pay for which services?

In order to address these questions, the project developed and carried out a very detailed survey on citizen's willingness to pay for specific ecosystem services located in both the urban and rural areas of the Lombardy region. The survey results showed, among other, an increasing willingness to pay values according to increasing levels for the attributes. Despite high variability among responses, the willingness to pay seems to be higher for services producing benefits that are not strictly site-limited (e.g. carbon sequestration) while it is lower for services that are more site-related (e.g. thematic/floristic recreation trails). Once finalized, the research outputs could be suitable for informing future land management policies and strategies at both local and regional scale even though further research is needed to scale-up results through a function benefit transfer that considers demographic and socio-economic features, as well as territorial ones (Figure 8).

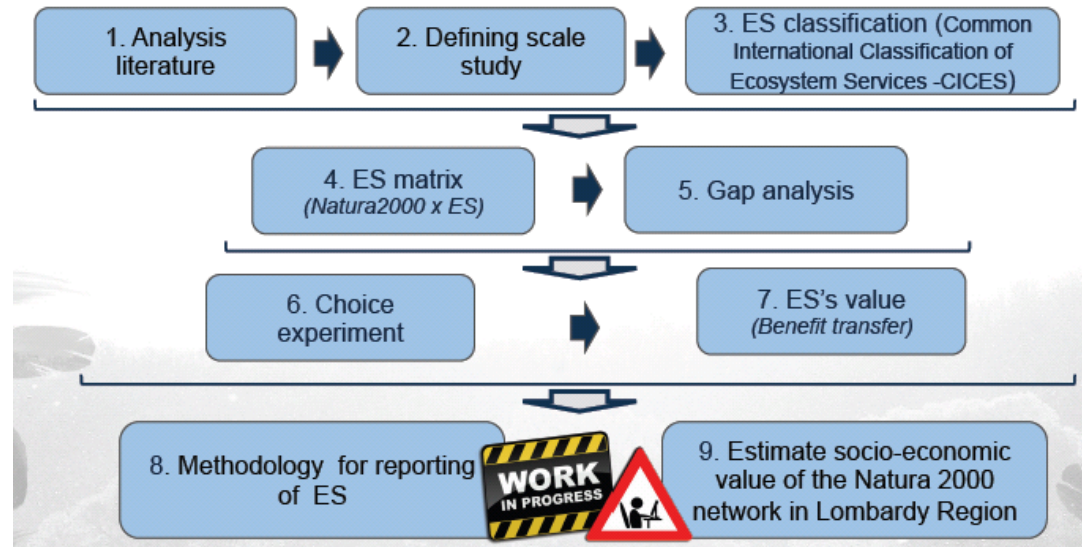


Figure 8. Regional approach for the estimation of the ecosystem services value. Source: LIFE+ GESTIRE.

The results of the study also show that the debate on how to adopt PES and PES-like schemes has other implications. Valuing the economic contribution of ecosystem services can increase the awareness of policy makers but can also oversimplify the complex functions of nature and produce a set of commodities stripped from their social, cultural and ecological context. The results of both actions and process associated with the GESTIRE project offer a significant contribution to the debate on the economic valuation of ecosystem services produced by the European ecological network.

Its contributions are due to the regional scale of study of Natura 2000, the acquired experience of collaboration between public and private entities within the Lombardy region and the expertise of the partners of the project. Partners include, among others, the regional agriculture and forests agency (Ente Regionale per i Servizi all'Agricoltura e alle Foreste, ERSAF), the environment Lombardy Foundation (Fondazione Lombardia per l'ambiente), the Italian Birdlife NGO (LIPU Lega Italiana Protezione Uccelli onlus), the environmental sector of the Centro Turistico Studentesco e Giovanile and Comunità Ambiente, a SME providing services focused on the European ecological network, Natura 2000.

The GESTIRE project, which is being carried out in strict collaboration with the University of Padova, will also result in providing a better knowledge base of regional biodiversity, enhancing product and process innovations to protect and conserve its environment, and creating new opportunities for knowledge-based jobs.

For further information on the GESTIRE project, please visit the project link: <http://www.naturachevale.it/en/>

5. PA BAT: The Protected Area Benefit Assessment Tool

Kasandra-Zorica Ivanić, WWF Adria

WWF assessed the values and benefits of protected areas through participatory workshops in 58 PAs in 8 countries in the territory of the Dinaric Arc region. This was the biggest ever participatory assessment of protected area benefits in the region. Over 1250 participants took part, and due to that, WWF now has a database of information about benefits from over 50% of the protected areas territory in the Dinaric Arc with over 22,000 pieces of information.

The major aims of the PA BAT are to:

- Collate information on the full range of current and potential benefits of PAs;
- Work with stakeholders to identify important values and benefits that PAs bring to a range of stakeholders;
- Utilize a standard typology for results that can be aggregated to provide an overview of a portfolio of PAs.

The methodology is balanced to assess the views of 8 different stakeholder groups and give guidelines to protected areas management (

Figure 9). The process itself is equally important because meaningful dialogue and active participation of stakeholders in park management is still being developed in this region, and the neutral role of the facilitator is key for this process. In most PAs stakeholders and managers met for the first time and shared their opinions and problems. An important benefit that the participatory process has brought is the integration of local and scientific knowledge and more clarity on the flow of economic benefits to different stakeholder groups in and around protected areas.

Workshops were also learning opportunities, as 94% of participants noted they could use the knowledge gained during the PA BAT workshops while 72% of the participants would like to develop future collaboration with someone they met at the workshop. Results show that economic development shifts away from traditional use of natural resources to developing cultural and educational assets. The benefit assessment provided insight into the major economic benefits for the assessed PAs: tourism and recreation, commercial water use, water quantity and quality, wood and jobs in protected areas. In 96% of evaluated PAs some of the stakeholders receive economic gain from tourism and in 60 % locals have economic benefits from selling local food products. The problem noted in the entire region is low recognition of ecosystem services and the benefits that arrive from them, such as clean water. Water is the most treasured natural resource for locals and PA BAT has shown that in 51% of PAs commercial water use has major economic value, primarily for business and governments.

The potential for creating new jobs and local development is recognised in tourism, nature-based educational activities, local/niche products and production methods which will enhance rural livelihoods. The PA benefit assessment provides

arguments for better protection and dialogue with resource use sectors, politicians and businesses. WWF will try to make policy shifts together with parks, and to support green jobs and green growth throughout the region (Figure 10).

Protected areas create a wealth of opportunities for sustainable development in places where there are few alternatives. Parks create jobs, both for people employed directly by protected areas and more significantly because tourists are drawn there, looking for local authentic food, accommodation and souvenirs. In 25% of protected areas jobs linked to conservation are the only source of income. Other opportunities do not exist in high mountain areas, forests and abandoned agricultural lands that are already experiencing problems of under-development, farming decline and depopulation.

National reports are being prepared and they will soon be on project web page: <http://www.parksdinarides.org/en/>



Figure 9. PA-BAT workshop in Pelister National Park, FYR Macedonia. WWF Protected Areas Benefit Assessment in the Dinaric Arc (2014), WWF Dinaric Arc Parks Project, WWF Mediterranean programme, Zagreb, Croatia.

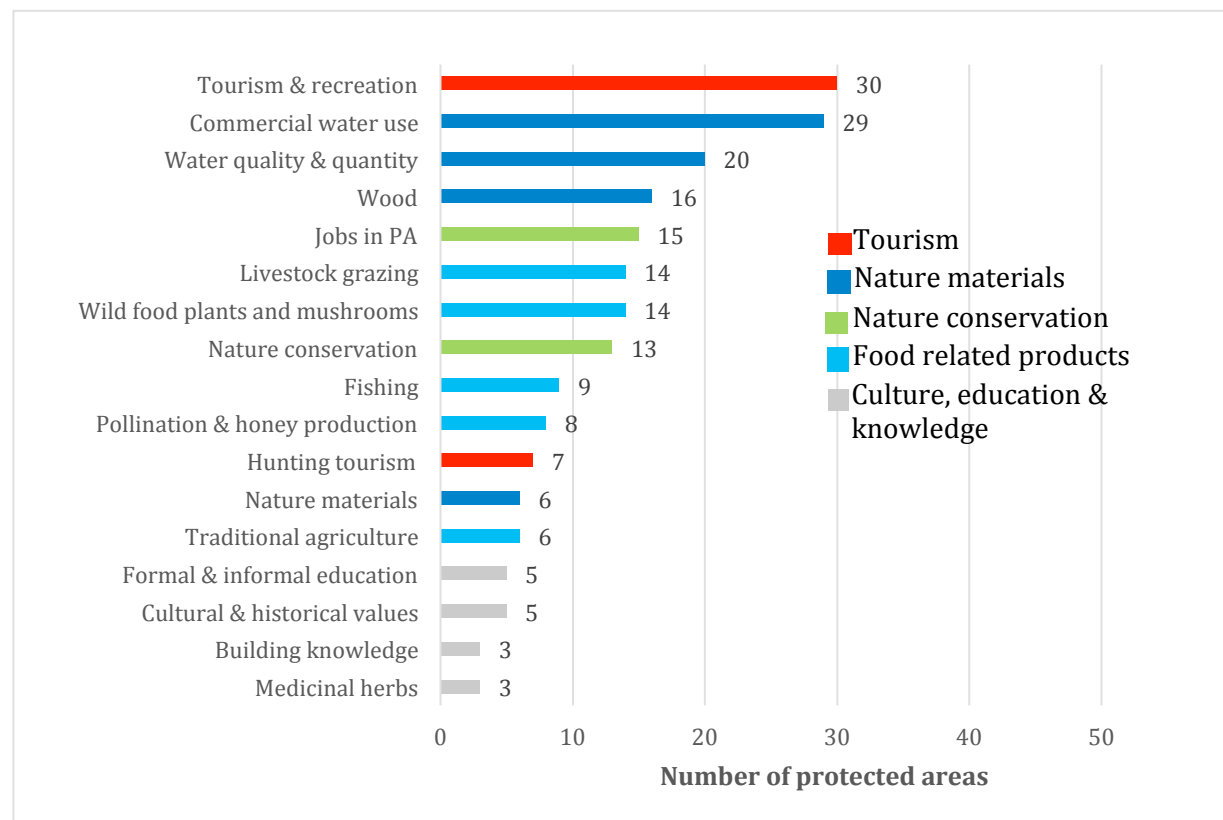


Figure 10. The assessment of major economic benefits valued by all stakeholder groups in protected areas in the Dinaric Arc. Color coding highlights the results in benefit groups with red representing benefits related to tourism, blue to natural resource, green to nature conservation, light blue to local food production and grey relating to culture, education and knowledge. Photo credit: Andrea Štefan/MWF Adria.

6. Biodiversity Offsets: An Opportunity for Funding Protected Areas in Chile

Victoria Alonso, Co-Founder, Templado

In Chile, resource extraction and development continues to greatly impact biodiversity, despite the availability of legislation to mitigate those impacts (Figure 11). In fact, Chile has one of the highest rates of biodiversity loss among OECD countries.

Due to lack of capacities and limited experience, this legislation has been historically poorly applied. Following international conventions and pressure from international partners, as well as the increasing availability of best practices, the opportunity to implement appropriate biodiversity offsets on ongoing projects has arisen recently. These pilot cases could help to assess the implementation of offsets and set up a precedent for the “polluter pays” principle.

Currently, 95% of all approved national Environmental Impact Statements (EIS) do not comply with required biodiversity offsets guidelines, but for the most part compensate with infrastructure. At the same time, 17% of the country is protected but underfunded and poorly managed. It further represents only a fraction of all ecosystems. As a result, the State has recognized the need to engage the private sector in biodiversity conservation in order to broaden the availability of resources for conservation.

Templado is leading the first offset pilot project following the Business and Biodiversity Offsets Program (BBOP) with the aim of both reducing the rate of biodiversity loss and protect its ecosystem services (Figure 12). In designing the project, Templado has explored the possibility of using this pilot project as a model to channel resources to existing public protected areas. The question of assessing additionality is still unresolved but interest among public and private stakeholders has increased.



*Figure 11. Open copper mine pit operated by Compañía Minera Cerro Colorado in Chile's First region.
Photo credit: Ander Uriarte*

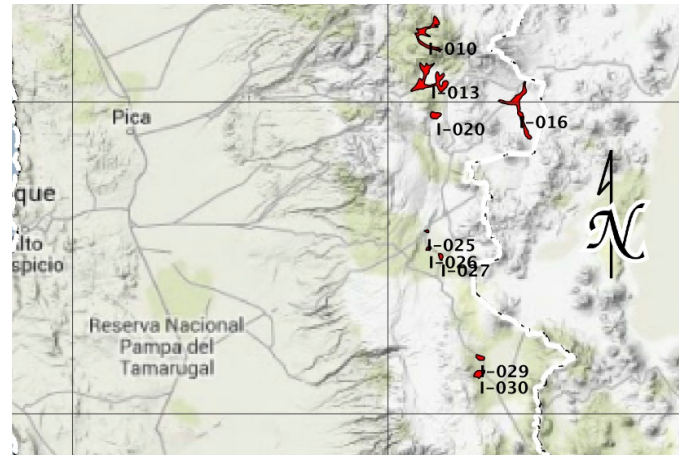


Figure 12. Potential sites for biodiversity offset project by Compañía Minera Cerro Colorado in Chile's First Region.
Photo credit: Ander Uriarte

One key aspect inherent in the implementation of this kind of offsets model is the role of public institutions and other stakeholders. Communities understand and support the value of ecosystem services but are confused by the fact that they have been historically compensated with money instead of being compensated in biodiversity or equivalent ecosystem services. On the other hand, businesses are divided into those who want to implement appropriate biodiversity offsets and those who are comfortable with the current situation: “they pay to trash”. In parallel, public institutions are tasked with defining conservation priorities and guide implementation and monitoring, but dramatically lack internal capacity. Yet, all three stakeholders are essential for the proper validation of any biodiversity offset program.

Another key aspect rests with the integration of participatory approaches in the definition and implementation of biodiversity offsets. In Chile, this integration is not consolidated yet. Companies are skeptic, communities are the weakest link, and public institutions are unable to guide. For this reason, a pilot project is necessary to level the field and provide direction. In the early phases of feasibility assessment, our work has already identified some of the perceived risks. First, not enough “like for like” sites for offset will be available to offset for most of the biodiversity impacts currently happening (Figure 13). Secondly, if the first pilot projects are too complicated, too expensive or not broadly validated, they will not be replicable at a broader scale.

From Templado’s experience to date, the following actions are recommended:

- Secure an informed and guided participation of public institutions and provide stakeholders with information to ensure validation;
- Guide participation of public institutions and provide all stakeholders with information to ensure validation;

- Ensure long term management, financing and *responsibility*;
- Establish conservation priorities;
- Asses support for existing public protected areas.

Please visit the site at: www.templado.cl



Figure 13. Chile's biodiversity is represented, among others, in Mediterranean and Temperate ecosystems which face today serious threats to their subsistence. Photo credit: Karl Yunis.

7. Partnering Business and Nature to Preserve Freshwater Ecosystems in Agricultural landscapes

Csaba Vaszkó, WWF Hungary

WWF Hungary has initiated an innovative pilot project next to the Tisza River in north-eastern Hungary. Its goal was to develop and test innovative Payment for Ecosystem Services schemes to restore the area's natural floodplains while increasing and diversifying local income streams. The Tisza is a major tributary of Danube and an important ecological corridor between the Danube and the Carpathians. The area is home to globally significant species such as the black stork, white-tailed eagle and countless water birds that migrate to the area in the spring, including herons and geese. The floodplains traditionally provide many ecosystem services to local communities such as food, raw materials, medicinal plants, but also flood mitigation, carbon sequestration or habitats for species. Local communities and businesses have limited knowledge of their dependence on these services. Intensive agriculture has been the main driver of the mismanagement of the floodplain ecosystem services. The river was regulated, channelled, the floodplain was narrowed and the many habitats have been converted to non-productive croplands. Together with climate change, this has led to severe and unpredictable floods and long drought periods. All of these have led to a broken balance between nature and people and have led to the rapid expansion of invasive plant species.

Amorpha fruticosa is an invasive plant which negatively impacts biodiversity as well as flood management, and it has colonised large areas of many floodplains in Hungary, Croatia, Slovenia, Bulgaria and Romania. This expansion has caused serious economic and environmental problems such as habitat loss and fragmentation, increased land use costs and reduced floodwater retention capacity. On the other hand, it is a promising energy source due to the high caloric value. WWF sought to address this problem, in a way which would answer to the Tisza region's socio-economic challenges, and open up new opportunities for floodplain ecosystem management.

WWF deployed a participatory approach to implement a PES scheme in the Tiszatarjan village (*Figure 14*). The local community started to remove wild bushes of the highly invasive *Amorpha* species, which is partly used as biomass source for heating the local public buildings and partly sold to an energy company. A reasonable part of the profit is being invested back as a payment for ecosystem services. With the help of this payment large areas of land formerly covered by the *Amorpha*, together with less productive arable lands, are now being given back to nature, to restore the floodplain's former ecosystem services. Some of the area is being replanted with native, energy useful willow trees, which will serve as a long-term, sustainable supply of "biomass". Another important element is to set some lands aside for wetland and grassland conservation, the management of which is being paid for by revenues from biomass sales. Additional project "mechanisms" include the introduction of grazing animals such as grey cattle and water buffalo to prevent the return of invasive species, and to assist with grassland management. Finally, these changes provide an at-

tractive landscape for eco-tourism, which will bring in additional revenues to economically diversify and better sustain this rural community.

As a result, a new local biomass supply chain has been developed providing biomass for heating public buildings. Biomass from floodplain is economically competitive with natural gas, which means 25,000-30,000€ in energy costs are saved and more than 50,000m³ of natural gas replaced annually. This significantly contributes to the increased resilience of the local communities. Water buffaloes, Hungarian Grey Cattle and beavers have been reintroduced in the floodplains' project area, as the former native ecological engineers are supposed to diversify the wetland's landscape. Removing and grazing invasive shrubs have increased the floodwater retention capacity of the floodplain. The resultant improvements to the landscapes and biodiversity make the area more attractive to tourists.

Opportunities exist for expansion along the rivers in Slovenia, Croatia or Romania. Eventually much of these river sections could be transformed. This would mean more green energy, more income, more profit, more jobs, and more nature (*Figure 15*).

For further information on the project, please visit the link:

http://wwf.panda.org/what_we_do/where_we_work/project/projects_in_depth/one_europe_more_nature/sites/tisza_floodplains_hungary/

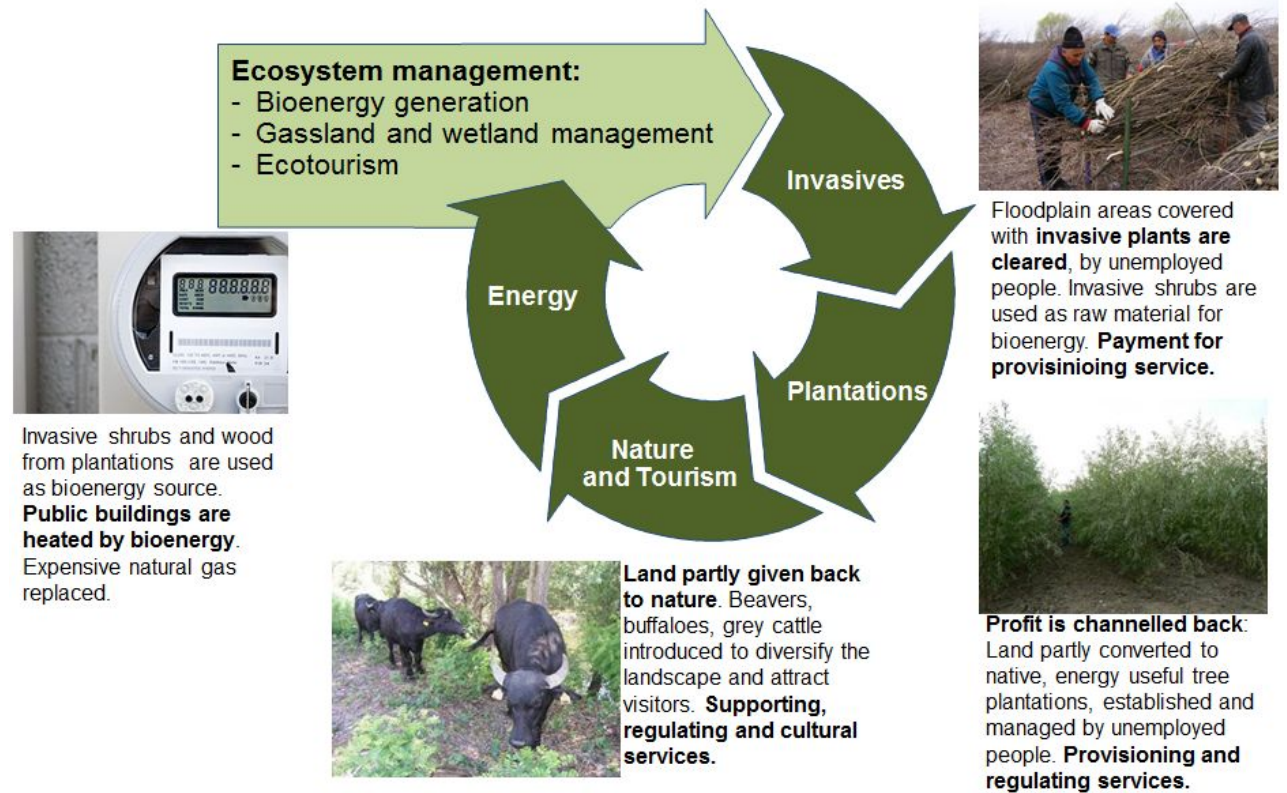


Figure 14. The process of the market based mechanism. Photo credit: Csaba Vaszkó

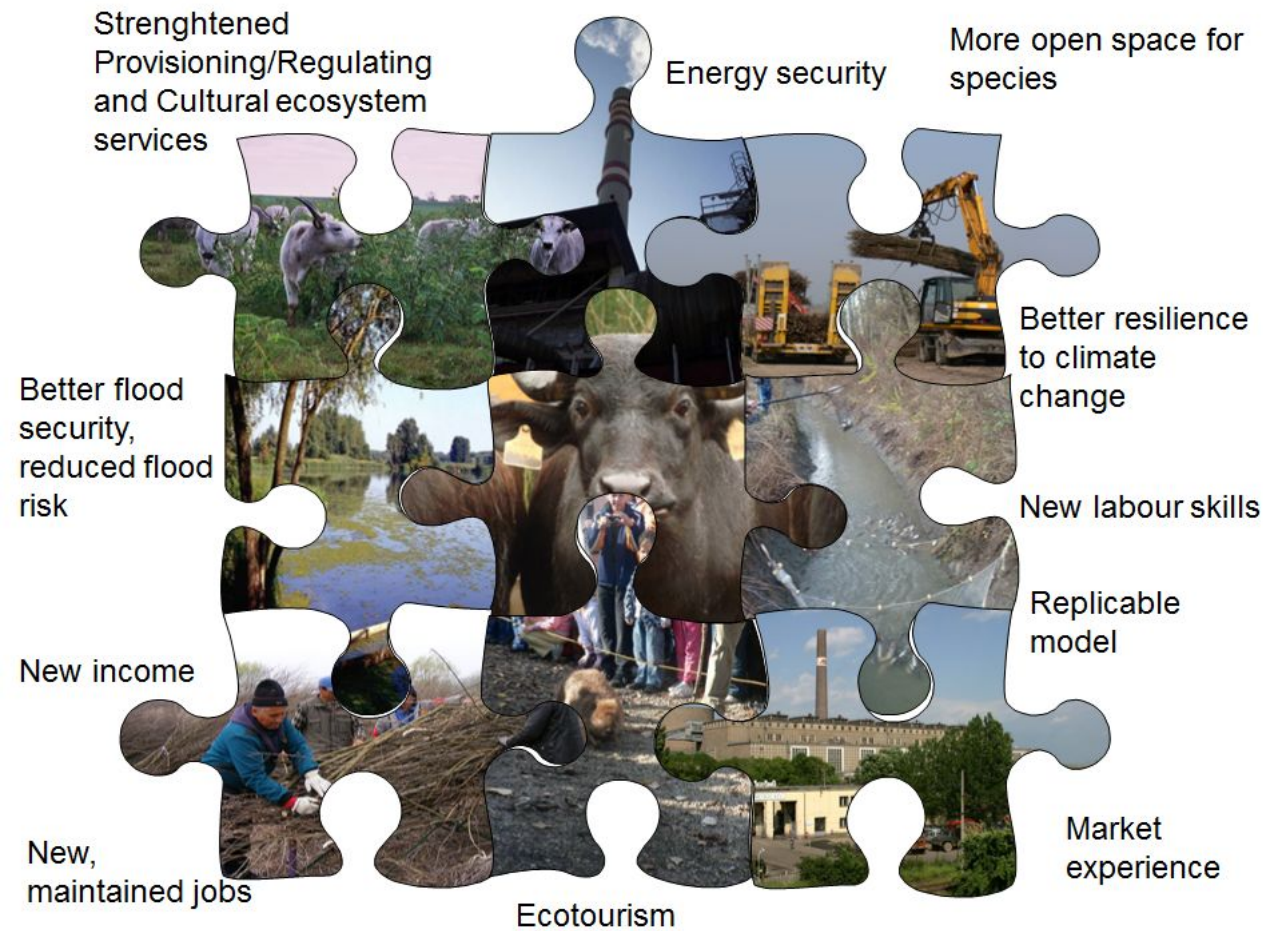


Figure 15. The positive spillover effects. Photo credits: Csaba Vaszko, Viktoria Siposs and Laszlo Galhidy

8. Payments for Ecosystem Services: Linking Active Management to Bottom-up Market-based Mechanisms towards Effective Conservation in Natura 2000 Sites¹

Catie Burlando, IUCN Commission on Environmental, Economic and Social Policy

Funding towards achieving both effective and equitable conservation efforts in protected areas and Natura 2000 network (comprising both state-managed protected areas, as well as private and common areas) is increasingly limited in European countries facing tightened national budgets and spending cuts. Besides reliance on Direct and Structural European Funds and the agro-environmental measures specifically supporting conservation-oriented outcomes, there are calls to make greater use of market-based mechanisms such as payment for ecosystem-services and PES –like schemes. This shift has occurred in parallel to a discursive shift emphasizing the valuation of nature, ecosystem services and natural capital.

I was recently invited as an IUCN Commission on Environmental, Economic and Social Policy (CEESP) member to moderate the workshop on "Improving governance of protected areas through payments for ecosystem services and self-financing mechanisms" at Little Sydney: Protecting Nature in Europe, held May 28-31, 2015 in Austria. CURSA, Lands NGO and the Universities of Molise and La Sapienza organized the event as part of the EU LIFE project "Making Good Natura", and followed up with a series of recommendations and actions point from the round table discussion (see Conclusion). While there is heated debate on the merits and limitations of introducing market-based tools in the field of conservation, I believe there is a need to reflect upon the relationships between land-based production, provision of ecosystem services, and the trade-offs generated by PES schemes in terms of social and economic practice on the land. Ensuring the continuous provision of ecosystem services does not necessarily equate with maintaining biodiversity. There are documented trade-offs among diverse ecosystem services; among land uses supporting different types of environmental services; and between effectiveness and equity outcomes, in terms of possible changes to access and targeted stakeholders. The identification, definition and valuation of ecosystem services and biodiversity are in themselves socially, culturally and politically defined, and there may be differences in meaning and implementation approaches between local populations and technical advisors. While economic valuation is a first step towards increasing awareness of 'nature's value', and a first step towards setting up a PES scheme, it may hide, or be incommensurable with, social, cultural and ethical values at the heart of local approaches to biodiversity conservation. The recent report by IPBES on conceptualizing diverse values to nature and its benefits recognizes the cultural component mediating relationships between people and their environment and values.

¹ A version of this article was published in the CEESP Newsletter, in July 2015.

As documented in the literature, market-based payments can lead to trade-offs in terms of access to resources, social relations and institutions tied to the use of natural resources, transaction-costs, personal motivation and ultimately equity and fairness. This is particularly relevant when the provision of ecosystem services and conservation outcomes depend on the continuation of land-based practices (see article by Vaszkó). PES schemes introduce new economic and social institutions, as norms and rules, which may either support or constrain land-based practices generating ecosystem services. In alpine grasslands and meadows, for example, haying and grazing support high levels of biodiversity at the species and habitat levels, providing for landscape diversity and structure. The maintenance of these practices are tied to economic viability, tradition and knowledge transmission, as well as to land tenure and larger demographic and cultural shifts. Rather than rely on passive management, PES and PES-like schemes may be more effective when they integrate the land-based practices that support the delivery of ecosystem services, and when they are developed from context specific understandings of drivers influencing land-based practice at different spatial and institutional levels.

In some regions of Europe, productive economic activities in the primary and secondary sector have declined sharply in protected areas, and shifts towards tourism and the service sector have not always had the investments required to either foster, or take advantage of, increasing visitation. In many mountain areas, loss of activities in agriculture and animal rearing have led to increasing forest cover to the detriment of landscape mosaics and bio-cultural diversity (Figure 16). In this case, small scale PES schemes which reward active management and couple local industry with the land-based services provided by local land-users, whether they be in agriculture, forestry, fishing and animal rearing, may have a greater degree of local acceptance and success. The specific inclusion of labour and employment in PES schemes may enable the regeneration of local community enterprises. This may be particularly relevant in common areas, where benefits can be more equitably distributed through existing institutions.

Finally, the shift in discourse from “biodiversity” to “ecosystem services” and “natural capital” has important implications. As we shift our discourses towards a more fragmented worldview (ecosystem services versus biodiversity), which rewards economic valuation, we risk losing sight not only of the social, cultural and ethical values associated with our bio-cultural diversity, but also of the social and economic drivers which enable the maintenance of these same values. The inclusion of new actors and networks in conservation practice, most notably the business sector, means a shift towards market-based forms of valuation (increasingly oriented towards the financialization of nature), higher investment capabilities (whether realized or not), but ultimately interests at higher levels which may not coincide with those of local level users or conservation actors. PES schemes developed at the local level could be one of the options available for communities to safeguard and promote their use of resources and ecosystems, improve equity and sustainable development opportunities as well as maintain flexibility in light of contemporary needs and challenges of the global context (see article by Vaszkó, this issue).



Figure 16. High mountain pastures in the Dolomites, Italy. Photo credit: Catie Burlando

Conclusions

The workshop in Hainburg-Donay was well attended and saw a rich discussion follow the speakers' presentations. The presenters themselves introduced a wide range of issues associated with the topic of assessing, valuing and developing market-based mechanisms for addressing conservation issues.

First, there are different ways to conceptualize the assessment of benefits derived from protected areas and identify socially and culturally appropriate valuation approaches. Different methodologies and tools can be used to identify and value the contribution of ecosystem services and/or protected areas to local social and economic well-being and development. When market-based mechanisms are introduced, these need to be developed from context specific needs, in order to support conservation actions effectively and equitably.

- In Catalonia, Subirà showed how the regional government identified the economic contribution of protected areas through an analysis of tangible economic outputs, including Gross Added Value by sector and employment.
- In the Dinaric Arc region, Ivanic demonstrated how participatory workshops using the Protected Areas Benefit Assessment Tool helped to identify the wide range of benefits stemming from protected areas, the main beneficiaries, as well as shifts in economic development patterns.
- In the Italian region of Lombardy, Spinelli argued that simple reliance on "willingness to pay" does not work. Rather than to given (economic) values, more attention should be paid to the motives behind people's valuation and to the risks associated with oversimplifying complex ecological functions.
- In Chile, Alonso showed how biodiversity offsets could be used to fund concrete conservation outcomes associated with protected areas establishment and management.
- In Hungary, Vaszkó presented a PES scheme that generated new local revenue by actively using floodplain invasive species for biomass and energy production, while increasing floodplain protection and benefitting the local recreational and tourism economy.
- Through a review of the challenges involved in the shift towards market-bases discourses, Burlando proposed that PES schemes could be developed at the local level to support communities' land based activities and active management of resources, and specifically improve equity and local sustainable development opportunities.

Secondly, there are also different ways to conceptualize the role and level of participation required for identifying, assessing and valuing ecosystem services at different scales. During the definition of a PES scheme, stakeholder engagement can support understanding and agreeing on several aspects. These include (1) the environmental issues at stake and the ES to be restored or maintained; (2) the possible role of a PES scheme; (3) the legal aspects and suggested ways to formalize the PES deal and transfers, as well as (4) the fiscal aspects of PES transfers. During implementation, stakeholder engagement can support sharing progress and results of monitoring and making necessary adjustments. Yes, scale issues are a crucial determinant in all steps of the process.

- Peh showed how it is possible to develop field methods for identifying ES and possible trade-offs, as well as for valuing ecosystem services under alternate scenarios at the site level, contrary to most methodologies which are used at the landscape, regional or national levels.
 - Through a cross-section of Natura 2000 sites in Italy, Pellegrino and Gaglioppa showed that there is still a gap between the definition of PES and the participation of stakeholders because of different perceptions of ES between management authorities and local communities.
 - Spinelli demonstrated that the regional level is the most adapted to address issues of identification and monitoring of ES, foster conservation actions, and lead to the convergence of European funds.
- Finally, there is general agreement that PES and PES-like scheme need to be geared at conservation actions. While the IUCN has a no net loss policy which needs to be upheld when implementing these schemes, it should ensure that the social, economic and environmental effects of offset policies are monitored on the ground and that appropriate changes to IUCN, international and national policies are taken by all relevant stakeholders to address emerging challenges and observed infringements.

The following recommendations were submitted to the organizers of the Little Sydney conference, and a summary of the conference discussions can be downloaded at the following site: http://cmsdata.iucn.org/downloads/lis_summary_final.pdf.

Key recommendation 1: Promote and communicate the range of tools available for the valuation of ecosystem services that involve both scientific/technical and participatory approaches.

Key recommendation 2: Based on both scientific and local knowledge, increase awareness of the social, cultural and economic benefits associated with the provision of ecosystem services and biodiversity conservation at the community, regional and national levels.

Key recommendation 3: Evaluate, develop and monitor different options for achieving conservation, including Payment for Ecosystem Services schemes that specifically support effective and equitable conservation actions and avoid the risks associated with the commodification of nature (e.g. privatization of the commons, induced land use changes, introduction of market logic in nature conservation, shifts in behavior).

Key recommendation 4: Develop PES schemes and other conservation financing mechanisms based on bottom-up approaches, identify context-specific institutional levels for effective and equitable implementation, and address environmental and social trade-offs associated with delivery of specific ES.

Key recommendation 5: Following a principle of proximity, support redistribution of financial resources from the urban service users to the rural service providers, as well as to the protected areas that support provision of ecosystem services.

Key action points

Action point		Objective	Response to key recommendations	Who	By when	Desired outcome
1	Promote and communicate biodiversity conservation and provision of ES through EU funds	Promote awareness on the value of nature and the social, cultural and economic benefits that derive from the provision of ES	1, 2	EU and member countries, IUCN, EUROPARC	EU funding programming period 2014/2020	Find a common language with local communities to support biodiversity conservation and provision of ES
2	Through the Common Agricultural Policy, include and implement measures for the development of PES and other economic mechanisms in Protected Areas	Finance biodiversity conservation and provision of ES	3	EU and member countries	EU funding programming period 2014/2020	Payments to ES providers that promote biodiversity conservation Handbook for financing mechanisms that support provision of ES
3	Develop mechanisms for compensation and redistribution of benefits among Protected Areas networks	Finance provision of ES in protected areas	5	EU Member States and Regions with the support of IUCN	By 2020	Establishment of Regional and National policy and legislation/regulation in support of compensation measures
4	Define the conservation measures that can be financed through PES and PES-like schemes in protected areas	Create funding mechanisms that support biodiversity conservation in protected areas (Habitat Directive art. 8)	3, 4	EU, Member countries, Regions, with support from LIFE MGN, IUCN and EUROPARC	By 2020	Handbook of conservation actions by habitat, specie and biogeographic region, including possible mechanisms for self-financing

Action point		Objective	Response to key recommendations	Who	By when	Desired outcome
5	Develop ES valuation and monitoring tools, as well as local level implementation methods in Protected areas	Communicate and share methodologies for the valuation, monitoring and governance of ES	1, 2	EU, Member countries, Regions, with support from LIFE MGN, IUCN and EUROPARC	By 2020	Best Practice Manual including case studies and lessons learnt from the application of governance methods
6	Support local communities' establishment and management of PES schemes	Encourage bottom-up development and implementation of PES	4	EU, Member countries, Regions, with support from IUCN and EUROPARC	By 2020	Best Practice Manual on bottom-up development and implementation of PES
7	Promote assessment of effectiveness and equitability in protected areas, including Natura 2000 sites and Indigenous and Local Communities Conserved areas (ICCAs)	Build capacity of communities to evaluate effectiveness of protected areas in promoting biodiversity conservation and provision of ES	3, 4	EU, Member countries, Regions, with support from LIFE MGN, IUCN and EUROPARC	By 2020	Development of assessment methodologies for PAs, including Natura 2000 sites and ICCAs
8	Implement a system of environmental accounting of ES to support decision-making	Promote the integration of economic, social and cultural values of ES in environmental accounting and reporting in order to increase awareness and involvement of decision-makers and stakeholders at all levels		EU, Member countries, Regions, with support from LIFE MGN, IUCN and EUROPARC	By 2020	Development and implementation of environmental accounting methodologies based on the triple bottom line

From Little Sydney to Hawaii

Little Sydney: Protecting Nature in Europe

Andrej Sovinc, IUCN World Commission on Protected Areas

Building on the legacy of the IUCN World Parks Congress and the Promise of Sydney, the “Little Sydney: Protecting Nature in Europe” conference was organized in Hainburg-Donau, Austria, from 28-31 May 2015, to showcase and discuss original approaches and priorities for protected areas and nature conservation in Europe. With more than 200 key experts from five continents, Little Sydney proved to be one of the milestone international events on protected areas in Europe.

The conference was organized by IUCN/WCPA Europe under the auspices of the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management and the Donau-Auen National Park authority. The conference was made possible through the generous support received from the Rural Development Fund of the European Union, the French Ministry of Environment, the MAVA Foundation, the German Federal Agency for Nature Conservation, UNEP’s World Conservation Monitoring Centre and the Donau-Auen National Park.

Little Sydney was organized around four key themes: Reaching Conservation Goals, Supporting Human Life, Influencing Policy and Institutional Responses, and Partnerships, Governance, Capacity Development and Resources, discussed through 20 working sessions. The Conference highlighted key findings from the IUCN World Parks Congress and discussed how to realize, bring out and implement those elements of the Promise of Sydney most relevant to Europe.

Summary of key messages from Little Sydney ...

...for PARKS in Europe

Strengthen systematic conservation planning and ambition for protected areas across Europe to ensure ecological representation and effective management, with a particular focus on Key Biodiversity Areas, geoheritage and marine areas. Enrich diversity and resilience of protected area networks like Natura 2000 and Emerald sites emphasising connectivity opportunities through transboundary and wilderness areas and other corridors including restoration efforts as appropriate.

Improve protected area management performance through the application of IUCN Green List standards to Natura 2000 sites, and promote the use of other quality and data management measures, including the standards within the World Database on Protected Areas (WDPA)/Protected Planet.

... for PEOPLE in Europe

Enhance governance and management approaches that place protected areas at the heart of multifunctional landscapes.

Value and take into account protection of ecosystem services while managing natural landscapes with the involvement of different sectors, including agriculture, business and industry.

Strengthen cross-sectoral linkages between protected areas and other sectors, in particular health, tourism and natural resource uses and urban planning.

Reconnect people with nature by using protected areas as a powerful tool to create inspiring experiences which will trigger positive emotions with visitors and help to build a constituency for conservation.

Promote activities in protected areas to connect people with nature through experience and local action, including involving youth groups and urban populations as part of inspiring a new generation.

...for PLANET in Europe

Strengthen policy advocacy and better integrate protected areas in spatial planning with other sectors for sustainable development, at local, national and EU level, in particular through the policies and incentives for economic growth.

Consider connectivity conservation and investments in green infrastructure as key tools in using natural solutions to support sustainable development.

Increase attention on economic valuation as a tool to emphasise the value of protected areas and natural habitats, and to make the argument for appropriate financial flows and investments in conservation.

Design and manage protected areas for change, including climate change. Use policy platforms to discuss climate change and other environmental issues as a forum to communicate and demonstrate the value of protected areas to address such challenges.

...cross-cutting issues through European policies and PA agenda

Mobilize support for strong advocacy for professional development standards and investment in protected area professionals through existing European frameworks and protected area agencies.

From Little Sydney to the IUCN World Conservation Congress 2016 and beyond

Boris Erg, Director IUCN Programme Office for South-Eastern Europe

With more than 200 key experts from five continents, and a vast legacy from the 2014 IUCN World Parks Congress, the “Little Sydney: Protecting Nature in Europe” conference was undoubtedly the most influential conference on protected areas in Europe thus far in 2015. Building on the results of the WPC and the Promise of Sydney, Little Sydney discussed original approaches and priorities for protected areas and nature conservation in Europe and provided ways for effectively implementing them. More than 20 working sessions were organized around four key conference themes: Reaching Conservation Goals, Supporting Human Life, Influencing Policy and Institutional Responses, and Partnerships, Governance, Capacity Development and Resources. The discussions centered on an array of issues of relevance for protected areas in Europe, and resulted in a number of recommendations and proposals for how to strengthen the network of PAs in Europe. The Little Sydney recommendations suggested for ways to enlarging the network, and leading to more effectively managed and better governed protected areas.

The closing of the Little Sydney Conference ushers in a new phase for all the participants and contributors, namely to translate recommendation into policy and action. We expect the IUCN, as the main conveyor of the conference, to take the most proactive role in sharing the message and advocating for implementation. Yet, this tasks also rests in the hands of the champions in protected areas, public authorities, expert institutions, civil society, and various sectors, to take a portion of the Little Sydney recommendations and implement it in their spheres of work, influencing others to do likewise.

To build on the framing of Little Sydney, IUCN will take the conclusions of the conference to develop its next quadrennial work plan for Europe, North and Central Asia for the 2017-2020 period, thus giving it a clear programmatic frame and developing it into a lasting effort. In terms of measuring success, the IUCN World Conservation Congress in 2016 in Hawai'i will provide a sounding board to share lessons learnt and present some of the achievements stemming from the action points agreed at Little Sydney. Thanks to the submission of a number of events focused on protected areas, it will be possible to assess the impact and change spurred from Little Sydney's recommendations. In the meanwhile, the results of Little Sydney will be presented at the IUCN Regional Conservation Forum in December 2015 in Helsinki, with a view to discussing about moving on from planning to action.

For more information, and to keep abreast of the developments leading to Helsinki and Hawai'i, please visit the link:

<http://www.iucnworldconservationcongress.org> and

https://www.iucn.org/about/union/secretariat/offices/europe/regional_conservation_forum/

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