



Community-based Management of Environmental challenges in Latin America

POLICY BRIEF: "IMPLICATIONS FOR MULTI-LEVEL RESOURCE GOVERNANCE IN THE FUTURE"

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This brief summarises how developing scenarios with communities illustrated the importance of cross-scale analysis and concerted action by local, regional, national and international stakeholders.



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Key messages

Using scenarios to think about the future can help communities adapt to global change and understand their current system better. Community-based actions often rely on, or affect, actions by governments, companies and NGOs. Therefore, scenario methods need to engage with multiple stakeholders and consider how the results fit with existing governance arrangements.

This briefing summarises the implications for multi-level governance of natural resources arising from the COMET-LA project across three case studies in Argentina, Colombia and Mexico.

The briefing considers how the current systems for governing and managing natural resources can respond to potential changes in the future. This should help communities prepare for global environmental changes by identifying how current Community-Based Natural Resource Management (CBNRM) arrangements can be adapted. The focus is on enabling resilient and adaptive community management. However, community-based natural resource management is influenced by, and has an influence on, other policies, plans and practices involving governments, Non-Governmental Organisations (NGOs) and commercial companies. Therefore, the policy framework in which CBNRM operates has a pivotal role in facilitating resilience and adaptation.

Who should read it? The briefing is aimed at regional and national policy makers whose policies and plans affect these communities and the natural resources on which they depend.

Introducing COMET-LA

COMET-LA focuses on developing and supporting locally owned solutions.

A socio-ecological system recognizes that people and their environment are intertwined; and changes to one aspect of the system, even if it occurs in another place, or at another time, will have an effect on the other parts of the system

The COMET-LA (Community based Management of Environmental challenges in Latin America) project used civic society-scientific partnerships to understand cross-scale issues arising from the interaction of global and regional strategies and local case studies with specific needs and desires.

Sustainable in this context means that the governance models will balance social, economic and environmental resources in ways that safeguard these for future generations and allow these arrangements to persist through time.

Community in this context means a geographic community, where local people are mutually dependent through their shared reliance on local resources. Communities are not always harmonious or egalitarian, but are often the most affected by changes to natural resources and often have good local knowledge about trends in the environment.

Governance means the ways in which decisions are made by multiple stakeholders, including the government, NGOs and local people. Governance is often **multi-level** as decision making often takes place locally, regionally, nationally and internationally; and can also be 'poly-centric' as decisions are often taken in multiple places and by multiple people at the same time.

Management of natural resources involves a range of approaches including: prohibition and sanctions or incentives and requirements, often set out in legal frameworks; education and information; and traditions or everyday practices. Management often occurs through networks of people interacting together.

Introducing the Case Studies



The three case studies are based in: Community Councils of Bajo Calima and Alto y Medio Dagua (77,724ha and 12,335ha respectively) (**Colombia**); Monte Hermoso Bahia Blanca estuary and an East-West coastal stretch about 100 km in length, encompassing 3 municipalities (**Argentina**); and Santiago de Comaltepec Community in the State of Oaxaca (19,000ha) (**Mexico**).

Each case study has a different focus for their community based natural resource management (CBNRM). The Colombian case considers the management of biodiversity and water resources in a region internationally renowned for biodiversity. However, the area faces many challenges from rapid development and mineral extraction (sometimes illegal). The Argentinian case focuses on coastal and marine management, particularly in regard to the environmental impacts of the harbour development and dredging, tourism development, increased temperatures and drought, and overfishing leading to a decrease in the available fish. The Mexican case focuses on forest management, and the need to improve the economic returns from the forest to stem emigration from the area.



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Existing Governance and management arrangements in the case studies

The case studies participants differ in their ethnicity – the Mexican community participants are indigenous; the Colombian community participants are afro-colombians and the Argentinian participants are white and mestizos. The Colombian and Mexican case studies share a tradition of collective ownership of land and co-management of natural resources. The Colombian case studies are focused on the black community councils, which recognise and respect the autonomy of afro-colombians. These case studies are very different from the Argentinian case study, where there is a tradition of private ownership and large corporations have a strong influence on decision making. In every case, CBNRM takes place within a wider **multi-level** network of decision making and management actions involving non-local stakeholders, such as national governments, international Non-Governmental NGOs and multi-national companies.

The Argentinian case study aimed for "progress towards a more sustainable management of the coastal and fisheries resources for the local people (and to address together the pressure of external agents)"

The Argentinian legal system makes the government responsible for natural resources. Citizens have the right to be consulted about administrative procedures for environmental preservation and protection, but do not participate in formal environmental decision-making. This reflects a tradition of 'top-down' decision making with limited local grass-roots activism. The main stakeholders in this case study are: local governments of the Municipality of Bahía Blanca, Coronel de la Marina and Monte Hermoso; Coastguard; provincial agencies for nature conservation; drainage; and sustainable development; Federal fisheries department; local, national and international nature conservation NGOs; local development organisations; and local fishing organisations.

The Colombian case study aimed for "sustainable management of water and biodiversity, including the decisions of the communities and allowing the improvement of the quality of life in the territory"

The Colombian legal system provides collective ownership rights to the Black Communities along with the rights to use and responsibility to conserve natural resources such as water, flora and fauna. However, the government owns the sub-soil and non-renewable natural resources, of particular relevance to mining activities and its impacts on water, flora and fauna. Therefore, the communities have a long tradition of local decision making and management, although they affected by national government policies regarding illegal crops and may request help from the government to control illegal mining activities. The main stakeholders in this case study are: the local community councils; the municipality of Buenaventura; government of Valle del Cauca department and Valle del Cauca regional corporation for environmental issues; relevant national government ministries; local, national and international nature conservation NGOs; national and international aid agencies; and national/local farmer organisations.

The Colombian case study aimed for environmental and socio-economic sustainability through a use of the forest that allows its current conservation status while permitting the community's youth to live and work locally, keeping the culture and traditions of their assembly governing system"

The Mexican legal system recognises community ownership via the concept of *ejidos* (common land). Ejido residents own the land they have been given and forest resources within the common land are administered by the community. These communities have a local government system based on "indigenous uses and customs" (*cargos*), which allow all members of the Community Assembly to take part in decision-making affecting natural resource management. The municipal development plan and municipal programme for Environmental Conservation and Protection protects the environment, and is implemented by the local government. Therefore, there is a strong tradition of local decision making and co-management, although there is some interaction with local government. The main stakeholders in this case study are: Community Assembly; Citizen Assembly, Municipal government; regional government; national and international conservation NGOs; and regional forest producer organisations.

Using Scenarios to explore Community-Based Natural Resource Governance

Scenario methods are useful to help people explore complex and poorly understood issues in a systematic way.

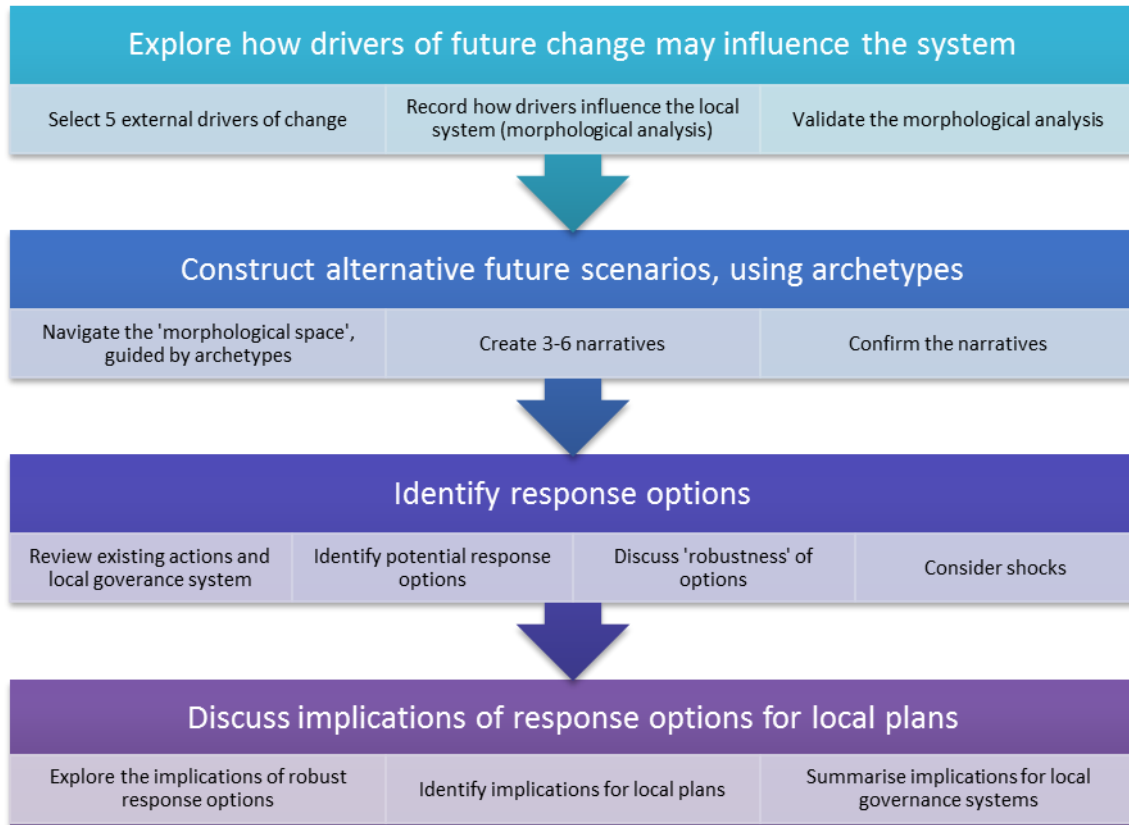
The methods can encourage people to share local knowledge and see their socio-ecological system in a new light. Scenario methods allow people to think creatively about several plausible futures and to explore how they might respond to these futures. This allows a process that is less likely to be constrained by path dependency and vested interests. The methods can lead to the identification of robust strategies to allow adaptation to future change. A crucial final step is for the communities to identify and evaluate new models for community based management and governance; and if they adopt a new model this may mean adapting or changing current **multi-level governance** processes.



Where might the future take us?

The process described in Fig 2 below allowed the communities to explore how social, technological, environmental, economic and political changes might affect the most important factors in their socio-ecological systems, looking ahead 20 years to around 2034. Using narratives in texts and sometimes pictures, the communities considered what these potential futures might mean for them and what would need to be done to manage these new situations. Communities discussed how to implement robust response options and who, beyond the communities themselves, might be involved at different levels of governance. To ensure these 'response options' were truly useful; they had to be appropriate for the full range of future scenarios and able to withstand a shock (an unlikely and unexpected but very disruptive event). The final set of 'robust' response options were then considered in light of their fit with existing governance processes and plans.

The approach focused on social learning and systems thinking by local people to help build their adaptive capacity. Therefore it prioritised putting resources into these community-level processes to support change rather than improving the data available to make predictions about the possible future states.



Overview of Scenario Development Method (see [Waylen et al., 2014a](#)).

Insights from creating scenarios at the community level

In all three case studies, ordinary citizens were able to actively participate in the scenario methodology through a series of 3-4 workshops described in Fig 2 above. This suggests that policy makers and NGOs could also accommodate the process in their activities.

The method introduced communities to structured thinking about how to respond

The approach helped the community participants think more systematically about how they could respond to external forces, such as climate change or commodity market fluctuations. The approach also allowed participants to consider how climate change and other social, technological, economic and political issues combined in specific ways, providing both opportunities and threats for their communities. Therefore, the COMET-LA process helped the

and adapt to external factors beyond their control

communities recognise their interdependencies with the wider world, providing some concrete steps to enable them better adapt to external changes whilst maintaining a sense of continuity and control.

Handling complexity

The structured approach helped ensure that all possible elements of the system were considered within a variety of narratives describing possible futures under different conditions. The process of generating the scenarios illustrated the complex and multi-directional interactions that occur in these case studies. This rich complexity is handled on a daily basis as part of CBNRM activities in the case studies and illustrates that local communities can work with system complexity if well facilitated.

Different settings, similar issues

Despite the very different settings, the scenarios focused on similar aspects of their socio-ecological systems. Social, Economic and Political settings (e.g. Livelihoods); government systems (e.g. Fishermen associations) and Users (e.g. Ancestral knowledge) were common to all three case studies; although Mexico had the most emphasis on government systems and Argentina on Users. Despite the structured approach, there was less emphasis on natural processes within ecosystems than might be expected, and more on the processes of how resources are governed. Therefore, although the focus was on natural resource management, it was aspects of the governance processes that were identified as most relevant to help them adapt to future change.

Raising awareness

Thinking about the future for all three communities made them aware of wider social and political issues facing their communities. The process helped them identify issues with the current system that needed changing, such as the fact that the existing governance of their natural resources was more fragmented than they had realised. This illustrates the importance of considering how the communities interact with their regional, national and international settings and how they might participate in multi-level governance systems.

Supporting Robust Responses through multi-level governance



Discussing Response Options in Colombia.

The communities were able to identify several response options that were appropriate for all scenarios and would help them respond to unlikely but highly disruptive events (e.g. a civil war or massive forest fire).

Response options common across the three cases included:

- The importance given to education, and specifically passing on local knowledge and traditions; and understanding their governance systems;
- capacity building for self-organisation and training in CBNRM;
- strengthening the sense of community; and
- strengthening links between the community and external organizations.



Discussing Response Options in Argentina.

Again, there is a strong focus on Users, government systems and Social, Economic and Political settings and less explicit focus on resources or ecology, illustrating the importance that these participants placed on governance and management processes to ensure that the resources on which they depend for their living were sustained. Many of the discussions indicated the inter-relationships between these response options, illustrating systems thinking connecting response options to one another and identifying synergies. For example, linking education about the community governance system, building capacity for self-organisation, and strengthening the sense of community together would help enable the communities interact with external stakeholders. The local research teams are in discussion with the communities on how to monitor the implementation of the new or modified response options identified during the project.



Discussing Response Options in Mexico.

The focus on linking scenarios to response options helped make the general ideas more concrete and aligned to the existing legal, market and governance systems. In general, the plans and programmes that had been previously established could accommodate much of what had emerged from COMET-LA's scenario process. However, there were areas where the legal framework allowed community participation in CBNRM but it was not happening effectively. The focus in Colombia and Mexico was on ensuring that the communities were empowered to play a more active part in existing planning processes, such as ensuring meaningful community participation in Buenaventura's *Land Use Plan* for the municipality and Oaxaca's *Municipal Development Plan* and the *Forest Management Plan*. However, in Argentina, the participants felt the legal framework needed to change: the pending draft laws on coastal management should be revised and implemented to support fair access to the fisheries and conservation of the coastal resources.

Connecting communities to wider governance networks

Connecting the communities to their wider governance networks was seen as a crucial response option. There are many external stakeholders, beyond the communities themselves, which could support the delivery of response options and help overcome some of the challenges identified. Therefore, it is not only communities that may need to take action. The emphasis on plans and laws above suggest that local, regional and national governments have a particularly important role to play. For example, ministries of education could support the introduction of ethno-ecology and governance into the school curriculum (as is in progress in Colombia); whilst the environmental agencies could work more closely with communities with regard to monitoring change and preventing resource degradation.

The role for NGOs

NGOs have a crucial role to play. For example, in Mexico, the Forestry Stewardship Council provides the community access to global markets through ensuring compliance with environmental standards and could play an important role in increasing economic returns from the forest; in Colombia FUNDAPAV, an NGO supporting the community councils, could help ensure the Black communities' interests and local knowledge are represented in the territorial plan; and in Argentina, local fishery groups may provide the foundation for future grass roots collective action.



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The role for commercial companies

However, there has been very little input from commercial companies in the case studies and these are very important stakeholders in multi-level governance. They may not have a direct role to play in supporting all the response options identified above, but they will be part of the communities' future development and often have access to national governance processes through well-organised and well-funded lobby groups. Involving these companies remains a challenge, as they often see no need to engage with others, nor any advantage in investing time in such participatory processes. However, mechanisms such as Colombia's *Consulta Previa* that requires any project to consult communities before initiation can help ensure such interaction becomes mainstream.

Brokering cooperation

Therefore, sustaining relationships with external stakeholders was also seen as part of the problems to be resolved, particularly in times of increasing globalisation. For example, the fishery conflict in Argentina was worsened when some of the fishing community signed an agreement with a large floating fish processor, or in Mexico where commercial contracts were perceived to be undermining traditional approaches to forest resource use. The process illustrated that external links are vital, but they require careful implementation to ensure the communities remain an equal partner and a common outcome is sought and agreed by all parties. Without external cooperation, communities may not be able to put into action the robust response responses they identified. Governments may have a key role in brokering these agreements.

Outcomes of Using Scenarios for Multi-level Natural Resource Management

All three case studies found the approach useful

The scenario process gave the communities an opportunity to think strategically and systematically about their future, when it was more common to focus on short-term immediate issues (Argentina and Mexico). The Colombian case study had already participated in a scenario planning process but found the methodology useful as it focused on taking the strategic vision into an operational plan and onto action.

Supporting community deliberation and empowerment

Given the existing governance systems, one would expect the Argentinean participants to identify response options for others to do whereas the Colombian and Mexican participants might be more focused on community-based solutions. Whilst this did occur, the Argentinean case study participants, used to a traditional top-down mode of governance, became more aware of the need for, and ways to, self-organise. When asked about who should take action, the workshop participants referred to 'us'. This notion of 'us' is new since, prior to COMET-LA, no sense of collective identity existed. The Colombian and Mexican case study participants became more aware of tensions and problems with their communal governance systems. This suggests the method can help community deliberation in a range of

settings. The process highlighted where measures were needed to address these challenges; but also how they needed to work more closely with other partners such as local government or private companies. The Argentinians 'found themselves' whereas the Colombians and Mexicans 'began to reach out to others'.

Taking responsibility

All communities identified their own responsibilities for adapting to future environmental change, although this was more engrained in Colombia and Mexico than in Argentina. In all cases, they realised they need to work together with other stakeholders from the government, business and the NGO sector. The process has helped identify (1) specific actions that the communities can take to support multi-level governance and (2) real and upcoming opportunities to participate in multi-level governance processes. Putting the process into action also became important as community members came to the realization that 'planning doesn't finish when you elaborate the plans'. Ongoing work is required to ensure that community interests are integrated with national or regional government and commercial activities.

Trading-off effort required for community led inputs with engaging external stakeholders

It is less clear to what extent external stakeholders also accept and welcome this desire for greater community participation and how external stakeholders might respond to these demands for greater involvement in governance. When involved, e.g. in the Colombian case study, in the discussion of robust response options, external stakeholders identified additional actions, and seemed to understand the system thinking underpinning the method. This suggests that involving external stakeholders would help share knowledge, generate new ideas and cement adaptive management ideas in other parts of the governance systems. The Colombian and Mexican local research partnerships are now working with the external stakeholders to allow the response options to be inserted in the current existing plans and programmes. There is a trade-off between allocating resources to a participatory community based process (producing results that are concrete, relevant and accepted by the community members) and resourcing a process that connects these results into the wider governance networks (such that external stakeholders also see the results as concrete, relevant and acceptable to them).

Scenarios can't avoid conflict but can help with conflict resolution

Multi-level governance requires coordination and cooperation but consensus is not essential, nor even normal. Using scenarios to help adapt to future global changes does not remove current sources of conflict within the communities or between the communities and other stakeholders. The freedom to reflect on the future and the present day allowed tensions to surface. However, the project illustrated that the process of building and discussing scenarios can help provide an arena to work through these problems. For example, the Argentinian case study was affected by the fishery conflict - many stakeholders found it hard to plan for the future when they felt they were "living in Barbarisation scenario now" but they recognised the need to keep working together to find a solution to a problem that otherwise would only get worse. In Colombia, the process brought out differences in leadership styles between two communities and provided a

focus for alternative leadership claims; and both communities are still affected by violent uprisings beyond their control; but they are taking steps to become more active in local planning processes. In Mexico, gender inequalities and differences between members of the community assembly and the citizen assembly became more visible. During the project, the Mexican community decided to start paying members of the community assembly for their work. Whilst this was not solely due to the project, the process allowed the discussion of issues that were previously considered as 'unthinkable' and contributed to an evolution in the way they collectively manage their natural resources.

Lessons learnt about using scenarios for Multi-level Governance

Lesson 1

Scenario planning requires resources and can seem like an unnecessary burden but, if appropriately implemented, the benefits seem to outweigh the costs as it helps both understand the present and plan for the future.

Lesson 2

The value of scenario-planning arises from discussing options and acting on them rather than from the products themselves, so sufficient time and resources need to be provided for the later stages e.g. exploring and implementing the response options.

Lesson 3

Involve all stakeholders in governance system including regional and national policy makers and commercial interests (see also recommendations from FP7 COBRA project). Consider stakeholders' influence on CBNRM if they do not participate in scenario-planning.

Lesson 4

It is useful to think about the future to identify actions to be taken now but this will require a process that identifies how to influence existing plans and policies and the cooperation of stakeholders with the power to change these plans and policies.

Lesson 5

Build on existing information about the socio-ecological system to make the process as comprehensive as possible without burdening the stakeholders with unnecessary knowledge elicitation.

Lesson 6

Use the best available data but ensure that local perceptions about the socio-ecological systems are also respected – data should serve and not dominate the process of building adaptive capacity.



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- Lesson 7** Recognise and build on existing participatory processes and community based governance processes whilst taking care not to reinforce existing inequalities. This may require measures to include marginalized members of the communities.
- Lesson 8** The importance of social learning to the success of the approach means that careful and experienced facilitation is required.
- Lesson 9** The methodology in Figure 2 must be adapted to local circumstances, given the complexity and length of the process. The Colombian approach using local people as co-researchers is an excellent way to ensure this adaptation.
- Lesson 10** Analysing the detail of potential response options before deciding what options to implement can help screen out those which stakeholders at all levels consider to be inequitable or impractical.
- Lesson 11** Considering how response options interact with each other helps to prioritise and ensure synergies are fully exploited.

Collecting and Analysing Data

Common methodology, locally adapted

The research teams followed the common scenario-planning methodology as explained in *Waylen et al. (2014a)*, but adapted it where necessary to suit the needs of their case study. These adaptations and the learning generated are described in D1.3: *Locally Adapted Scenario Building: Evaluation of Methods (Waylen et al., 2014b)*. The common methodology set out what data to collect at every stage. The individual case study data were analysed by the country specific civic society-scientific partnerships. The results are reported for each of the case studies in D2.3 (*Farah et al. 2014*), 3.3 (*Escalante Semerena et al., 2014*) and 4.3 (*Rojas et al., 2014*) and synthesized in D5.1: *Participatory Report on Synthesised Scenarios (Martin-Ortega et al., 2014)*. The governance issues are summarised in *Auger et al.'s (2014)* briefing. The analysis for this report built on these syntheses rather than additional data. In particular, we focused on comparing the data collected on perceptions of external drivers and their impacts on the socio-ecological systems; and views on how stakeholders external to the local communities could and would contribute to more resilient CBNRM processes. The briefing is also based on our interpretation of the major results in light of a literature review on scenario development as a tool for adaptation to global environmental change.

Recommended further reading

COMET LA website <http://www.comet-la.eu/index.php/en/>

COBRA website <http://projectcobra.org/>

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COMET-LA Project

Objectives

The aim of the project is to identify sustainable community-based governance for the management of natural resources that could be used in different social-ecological systems in a context of climate change and increasing competition in the use of these ones.

Case studies

COMET-LA analysed the community-based management of three social-ecological systems: the management of forests in Santiago de Comaltepec in the Sierra of Oaxaca (Mexico), the management of water and biodiversity in two community councils of black communities, Alto y Medio Dagua and Bajo Calima (Colombia), and the management of marine and coastal resources in Bahía Blanca Estuary and its adjacent coasts (Argentina).

Methodology

Steps to give answer to the overall objective:

1. Characterization of social-ecological systems from a sustainability perspective.
2. Identification of the current and potential role played by the key drivers and variables in the functioning of the social-ecological systems.
3. Building locally-tailored scenarios for future changes and challenges.
4. Development of a learning arena to test participatory tools and strategies for knowledge sharing and for the dissemination of results.
5. Synthesis and integration of the different results obtained in the social-ecological systems and upscaling them to be used in other contexts.

The application of the same methodologies to the 3 different situations facilitated testing in different scenarios, but also to find similarities and specificities. A special emphasis has been put in analyzing gender issues and the role played by women and men in the conservation and management of natural resources.



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Project data

Website	www.comet-la.eu
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Project Consortium

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