World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

CIFOR
CENTER FOR INTERNATIONAL FORESTRY RESEARCH

Workshop to Launch the CIFOR and ICRAF Biodiversity Platform
2nd – 5th March 2006

CIFOR Headquarters, Bogor and Happy Valley (GG House), Ciawi, Bogor, Indonesia

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WORKSHOP REPORT

Contents

All the photos were taken by Trudy O'Connor (cover photo and plates 1,2 and 4) and Piia Koponen (plates 3 and 5).

COVER PHOTO. The damar agroforesters of Krui, Sumatra plant trees for their grandchildren. While they may not see the benefits of harvest in their own lifetimes, the system is a sustainable one that provides stable incomes and protects much more local biodiversity than do intensive agricultural systems.

Summary

This workshop was the launching event of the joint CIFOR-ICRAF Biodiversity Platform. Its objectives were i) to share expertise and experiences to give the Platform a large and solid ground, ii) to get a common understanding of what the Platform should be and where it should go (with targeted outcomes and outputs) and iii) to design the first research project of the Platform.

30 scientists from both institutions joined hands to define common objectives and to discuss the framework and potential operational modes of the Biodiversity Platform. In addition to an interesting and important set of innovative ideas, research questions and gaps, it resulted in an **agreed set of goal, objectives and principles** and **the Biodiversity Platform is now officially launched**. CIFOR and ICRAF committed to include the joint initiative in their respective Medium-Term Plans.

The CIFOR-ICRAF Biodiversity Platform will focus on **biodiversity issues in multifunctional landscape mosaics**. Both institutions intend to take advantage of their perceived objectivity to address issues related to the combination of conservation and development interests. An emphasis is put on local people's perspectives but the guiding principle is to work with multiple stakeholders and at different governance levels. The centres have the staffing capacity to undertake **inter-disciplinary research** encompassing biophysical, socio-economic and policy issues. They can thus rigorously address issues of "people and biodiversity", while also focusing on issues, such as cross-sectoral influences on land use, that are not addressed in many sector-specific research institutions. The Platform wants to:

- Promote dialogue and networking to catalyze the **development of new thinking, approaches, and practice of biodiversity conservation and sustainable use in multifunctional landscapes**.
- Provide **opportunities for:**
    - **Lesson sharing, especially across disciplines, sites and scales.**
    - **Synergies (e.g. of resources, skills, mandates).**
    - **Added value (e.g. through syntheses and generalization).**

The Biodiversity Platform aims to collaboratively deliver international public goods on the following themes:

- Relationships between biodiversity and livelihood security in dynamic multifunctional landscapes.
- Ecological processes and spatial dynamics of biodiversity in landscape mosaics.
- Opportunities and constraints in incentives for biodiversity conservation, sustainable use and equitable benefit sharing in landscape mosaics.
- Potential for harmonization of customary and statutory rules and laws in relation to multifunctionality of landscape mosaics.

The first project of the Biodiversity Platform remains to be further developed within this framework. Research activities will follow two models. In a set of benchmark sites, action research will attempt to comprehensively address issues of biodiversity conservation in utilised landscape mosaics. Additionally, other sites will be used comparatively to test individual theories, 'fill gaps' and further strengthen conclusions.

The first day of the workshop aimed at progressing towards a common understanding about the outcomes, outputs and potential research questions of the Biodiversity Platform. The workshop was introduced by Markku Kanninen, Director of Environmental Services and Sustainable Use of Forests programme of CIFOR and Meine van Noordwijk, Regional Coordinator of the South-East Asia ICRAF office (see Annex 3). We also discussed the way "science" may provide targeted information to facilitate multi-scale negotiations. The second day aimed at sharing field experiences and discussion about the first project. The third day, which occurred in a "back to nature" resort, allowed us to go into more depth on selected topics emerging from the previous discussions and to reach a common agreement on the goal and objectives of the Platform.

Plate 1. Pak Kusnadi of Nanggung, in Gunung Halimun area of West Java, Indonesia has a successful nursery. He innovates constantly conducting experiments with production of various compost types, domestically local trees and the use of bamboo extracts as growth stimulants.

1. Introduction

The launching workshop of the CIFOR-ICRAF Biodiversity was held in Bogor from 2nd to 5th of March 2006. The objectives of the workshop were to:

- Share our expertise and experiences to give the Platform a solid grounding.
- Get a common understanding of what the Platform should be and where it should go (targeted outcomes and outputs).
- Design the first research project of the Platform.

Approximately 30 scientists from more than 10 countries came to Bogor for the workshop. They shared their opinions on the potential for a closer collaboration on the theme of "Biodiversity in Landscape Mosaics". Given the early stage of this collaboration and the multidisciplinary audience, the workshop remained a very open working process during 3 days. It required a great deal of work and dedication by all participants. They worked to reach a common understanding of what such a joint Platform might be and on which research themes related to biodiversity conservation, sustainable use and equitable benefit-sharing the institutions could join hands.

This workshop report is divided in four parts:

- The first part summarizes the **goal, objectives and principles of the joint Biodiversity Platform** on which CIFOR and ICRAF representatives reached an agreement during the last meeting day of the workshop.
- The second part reports the **highlights of the discussions and working groups** that dealt with the **general issues of biodiversity in landscape mosaics**, the needed outcomes and some research gaps.
- The third part focuses on the **framework, operational mode and open questions related to the Biodiversity Platform**.
- The final part summarizes **preliminary thoughts on the first project** that the Platform intends to conduct.

In some cases the points presented are those of individual contributors and as such are not necessarily entirely in agreement with each other.

2. Agreement on the framework of the CIFOR-ICRAF Biodiversity Platform

2.1 Preamble[1]

Conservation of biodiversity will continue to face major threats and opportunities over the next 15-20 years. Meanwhile, conservation and land use science are also changing the way we think about biodiversity and seek to manage its goods and services. In responding to these challenges, conservation institutions have begun to re-focus and re-organise their efforts. All these changes lead to demand for new types of research. Over the past decades, the pendulum has swung back and forth between 'conservation based on protected areas' and 'conservation in integration with human land use'. In response to the above changes, a new paradigm is emerging that integrates protected areas into broader landscapes of human use and biodiversity conservation, particularly in agricultural areas that now constitute the principal land use in inhabited regions of the developing world.

With the aim of sharing experiences and adding value through increased synergies on biodiversity, CIFOR and ICRAF join hands in a joint B**iodiversity Platform** which focuses on issues related to biodiversity conservation, sustainable use and equitable benefit-sharing in **landscape mosaics**.

As international organisations, mandated for strategic and applied research, CIFOR and ICRAF are well positioned to undertake management-oriented comparative research, analysis and synthesis across countries, regions and institutions. Between them, they cover a full spectrum of terrestrial productive land use systems, and can pull in component and specialist expertise as needed. They provide expertise on the entire spectrum of tropical tree and forest management in the landscape, from scattered trees in crop or grazing land, to closed canopy production forest, to riparian restoration, as well experience in tree improvement research for non-conventional species. The Centres also have access to expertise from other Future Harvest Centres on crop and livestock genetic resources and management.

As organisations mandated to provide input into international policy dialogues, their input is considered legitimate, and they have strong convening power and scientific credibility. They have access to major global players. Their perceived neutrality, even-handedness, and objectivity give their policy analysis additional legitimacy, and position them well to address many conflictive issues.

[1] The preamble is based on the report of an external review of potential collaboration on biodiversity of both centres, better know under the name Matrix matters: Biodiversity research for rural landscape mosaics. Final report. (Cunningham et al. 2003).

The Centres are distinctive in being natural resource institutes whose mandate is poverty reduction, so that they have the staffing capacity to undertake inter-disciplinary research encompassing biophysical, socio-economic and policy issues. They can thus rigorously address issues of "people and biodiversity", while also focusing on issues, such as cross-sectoral influences on land use, that are not addressed in many sector-specific research institutions.

2.2 Framework of CIFOR-ICRAF Biodiversity Platform

Based on the objectives of the Matrix Matters Report (2002), CIFOR-ICRAF participants in the launching workshop of the Biodiversity Platform developed a common understanding of the goals and objectives of the Platform. In addition, they decided to give it a set of guiding principles.

Goal

To identify principles, approaches and practices that promote conservation, sustainable use and equitable sharing of biodiversity goods and services in landscape mosaics, through better consideration of and integration with livelihoods and governance issues.

Objectives

In the interests of improved management of multifunctional landscape mosaics for biodiversity conservation, sustainable use and equitable benefit sharing, the Platform's objectives are:

a) Stimulate the combination of local knowledge and existing scientific information, to provide new synthetic insights for landscape management.

b) Provide conceptual and methodological support to landscape studies.

c) Improve representation of stakeholder interests with an emphasis on local people and understanding of effective incentive structures.

d) Understand the drivers eroding local biodiversity knowledge and values in order to build upon the motivation, creativity and organizational capabilities of local people.

e) Influence global and national policies, institutions and corporate behaviour.

f) Support capacity building and the development of training and resource materials for improved livelihoods and conservation.

Guiding principles

- Biodiversity matters because living things provide goods and services and because it has an intrinsic existence value. These goods and services are increasingly threatened, thus, they must be prioritised.

- Landscape mosaics matter because:
    - Their spatial configuration and dynamics influence viability of biotic populations and provision of environmental services.
    - Land uses of intermediate intensity (utilized forest, agroforest) may provide habitats that are important for biodiversity and other environmental services, especially near forest margins.
    - Protected areas alone are insufficient to conserve all biodiversity and must be considered as part of a wider landscape.

- The Platform will focus on landscape mosaics that satisfy a range of local and external values.

- The Platform will focus on multi-stakeholder governance processes that:
    - Promote stakeholder equity.
    - Consider ethical issues.
    - Manage tradeoffs in time and space with emphasis on local perspectives.

- The Platform promotes honest brokerage between conservation and development interests.

- The Platform will conduct collaborative research using a multidisciplinary and multiple scale approach that adds value to existing knowledge (e.g. through assessment, synthesis, design facilitation, dissemination).

- The Platform promotes dialogue and networking to catalyze the development of new thinking, approaches, and practice on biodiversity conservation and sustainable use in multifunctional landscapes.

- The Platform will provide opportunities for
    - Lesson sharing, especially across disciplines, sites and scales.
    - Synergies (e.g. of resources, skills, mandates, etc.).
    - Added value e.g. through syntheses and generalization.
    - Funding.

- The Platform is reliant on the joint resource mobilization and commitment by participating organizations.

3. Conceptual and Scientific background of the Biodiversity Platform

3.1 Session on policy relevance

An important objective of the workshop was to visualize as a group how the Platform can have meaningful positive impacts for biodiversity conservation and livelihoods. Therefore, the purpose of this session was to identify and discuss elements of relevance in the Platform's focus and agenda. The session included two presentations followed by a time for discussions.

Presentation 1. **Conservation of Biodiversity in Landscape Mosaics, Perspectives from "Mainstream" Conservation** by Mohamed Bakarr, ICRAF

Mohamed Bakarr emphasized the fact that, over recent decades, the approaches and agendas of conservation NGOs have gradually evolved from a site focus to a broad-scale integrated landscape approach that aims to protect species, maintain connected habitat networks as well as provide local livelihood options. This process relies on dialogue among multiple stakeholders and alliances across disciplines and sectors. Science plays a fundamental role in conservation planning and investment. It helps to understand biodiversity patterns, threats and land uses, and to model the impact of global trends of economic and ecological change on biodiversity. In its interface with mainstream conservation, the proposed Biodiversity Platform will need to clarify whether the research and capacity building it will undertake will seek to promote the integration of biodiversity conservation and local development, or rather to influence key conservation and development groups and advance their understanding on how to more effectively integrate these aspects.

Presentation 2. **Biodiversity: Global or local good?** by Patricia Shanley and Carol Colfer, CIFOR

Patricia Shanley and Carol Colfer's presentation highlighted the fundamental difference between values of biodiversity by local direct users and external actors as well as their power systems to access them are generally fundamentally different. Socially acceptable conservation solutions require understanding and respect for how local communities benefit from and contribute to biodiversity. We can 'be on the same team' by:

- Seeking complementarities (e.g. species of local economic and ecological value).
- Recognizing shared threats (e.g. not only on forests but also on local people).
- Sharing scenarios and results of modelling approaches and policy analysis for better land use planning.
- Integrating ecological and socio-economic indicators of thresholds.
- Recognizing and catalyzing local responses that promote system resilience.

- Assessing opportunities and limitations and testing local fit and usefulness of instruments favouring local development and conservation.
- Enhancing the visibility, contribution and evolution of local culture in the use and conservation of nature.

Summary of the discussions on policy relevance

The session raised a rich set of discussion points and questions which have been grouped by sub-themes below.

Target audiences

1. International conservation NGOs
In its interface with international conservation NGOS, the Platform will emphasize the need to integrate livelihoods, to understand the behaviour of people in multifunctional landscape mosaics and how livelihood strategies affect conservation objectives. It will aim to find complementarities between and understand tradeoffs with conservation objectives. The Platform will help to connect these large institutions with local NGOs working on supporting livelihoods in these landscapes.

During the past few decades, thinking in many conservation NGOs has evolved from excluding people from protected areas to involving these people in the conservation process. Yet, sometimes they have been accused of paying only lip service to this process. Conservation NGOs do vary widely in their capacity to implement landscape approaches that take into account local livelihoods, and thus broad generalisations are likely to be inadequate. However, there tends to be a negative perception of their approach by the development and scientific community. A change in that perception is needed to allow for collaboration between science and conservation on common ground. The main constraints they experience include:

- Lack of models, methodologies, tools and information to apply landscape approaches that include people.
- Lack of disciplinary diversity and combinations limiting their perspectives.
- Power imbalances between stakeholders. Despite good intentions, knowledge and skills of how to reach common grounds and tradeoffs remain limited.

2. National and regional governments
Rather than direct levers for conservation only, we should find indirect levers which connect better to government priorities, such as water quality or public health and justify conservation from their perspectives.

3. Corporate businesses
The Biodiversity Platform should also seek to influence the agenda of corporate businesses. Impact might be made through the development of collaborative efforts between corporate businesses and conservation organizations. For instance, associating several large logging companies in Central Africa with sustainable wildlife management

efforts of national and international conservation agencies can contribute significantly to biodiversity conservation in this region. While such collaboration has not been traditionally sought within the two institutes, it would be worthwhile to consider it in the Biodiversity Platform.

What is our role in public policy creation?

- Biodiversity Platform has the potential role as a broker of knowledge, enabling science to inform policy and linking decision makers with local people. We can provide informed predictions of the likely outcomes of various management options. Such scenarios may be useful tools for communication in the resource-use brokering process.
- There is a need to analyze where knowledge is limiting and where sufficient knowledge exists but organizations are not yet putting it into practice. A number of partner organizations work at larger scales than CIFOR and ICRAF and thus can reach higher scales of impact than both institutes could do by themselves. Therefore, the Platform should contribute to develop and package multi-scale landscape methods and influence such larger organizations to adapt these methods in the near term.

Visioning the focus and role of the Platform

Landscape and scale

- What do we mean by landscape? Does a landscape approach necessarily imply a large geographical area? How feasible is it to manage an entire landscape at once?
- Matrix matters points to landscape units of 100 ha to 10,000 ha. A landscape should be what is practical and realistic from a management point of view. To 'qualify' as a landscape an area must have multiple dimensions rather than just one land use type.
- Definition of scale is political. What is visible and invisible is scale dependent. What appears on a global level map in red and green has many different elements at local level. What is constraining at local level may not be so at global level.
- What is the purpose of making visible what used to be invisible? Visibility can have important uses. Visibility also carries risk. From the local people's perspectives, when do they want to be visible or ignored and for what purpose?
- What are the scales of the metapopulations we are conserving and what are the scales of the major threats to these. It is impossible to define what landscape is for all cases, but we can define what we need to look at in order to make that specific definition for an individual place.

Hotspot / Protected Area versus landscape mosaics

- Hotspots have high conservation value to the outside world. Human density in these hotspots can be high or low. Some areas such as the Sahel may not have a high conservation value, yet they host a large number of poor and are important from a CGIAR (Consultative Group on International Agricultural Research) or

people-centred perspective. How much emphasis will the Biodiversity Platform give to this distinction?
- The Platform should primarily focus on the proportion of land that falls outside protected area land, as it has a major role to play in biodiversity conservation.
- Don't rule out protected areas. Even though they may be protected on paper, many are not protected on the ground.

Integrating customary and statutory law
- Need a better focus on the interface between statutory and customary law.

Science for a democratic negotiation process between local and global interests in biodiversity
- Role of science in bridging the interface between local and global interests. Need to emphasize negotiation process between both levels.
- The Platform can add value in the negotiation process by bringing in disciplines that are not generally involved. For instance, it should focus on biodiversity valuation studies that could inform multiple actors about who benefits, who pays and who should be compensated in conservation planning.
- Platform should develop the research agenda required to make the process of natural resource negotiation process more democratic.
- Interface between local and scientific knowledge. What is the effect if you leave out of the equation either scientific knowledge or local knowledge, or what is the effect if you integrate both, in terms of negotiations with policy and biodiversity outcomes on the ground?
- Agendas of NGOs (Non Governmental organizations) lack legitimacy in local or non-western contexts. How can more democratic processes be fostered so that motivation for conservation action is really rooted in local and national contexts in terms of what really matters to people on the ground?
- The appropriateness of science products in negotiation depends on the stakeholders present. For instance, CBD (Convention on Biological Diversity) and national-level land use planning require different negotiation Platforms and levels of interventions.
- Alliances between indigenous people and conservation organizations are only effective when we deal with property rights, and prior informed consent is obtained. This is often difficult in the context of compensatory payments.
- Landscape-level interventions do not necessarily correspond to the scale of policy making. Degradation of ecosystems is the result of a mismatch between level of decision making and the resource system being managed. Both require a different way of delivery of the knowledge coming from research.

Tradeoffs and rewards
- Very different value systems need to be recognized. They will change according to different countries, communities, etc. Generally, there are no win-win situations but rather tradeoffs.
- Thus, we need to look at conditions and characteristics of reward systems because multi-stakeholder approaches require tradeoffs.

- Win-win versus tradeoffs. There are win-win situations that we do not build on. We should identify and build on them. Particularly, a number of win-win situations are closely tied to cultural issues.
- Under what context, what conditions does conservation work? Win-wins are possible in some places; elsewhere they are not. Need to understand formal versus customary legal systems, and incentive structures to influence behaviour of actors. Tradeoffs might be manifested at different levels. Need to understand linkages between actors, who the Platform seeks to influence, also how local perspectives are different from perspectives at global level.

Cultural aspects

- Cultural aspects are underrepresented. They need a stronger place in research.
- In rural areas, the cultural context of biodiversity and management is very important. There are many important aspects of biodiversity, other than purely money, that matter to people.

Loss of local knowledge

- There is an alarming loss of local knowledge. Need for capacity building with local groups linking generations, including local schools, on local ecological knowledge. Need to work with local languages that are often overlooked.

Invisible species

- Invisible species need documenting. Which species are invisible?
- Which species are invisible to whom? Are there species visible to local people, but not to conservation agencies and society? Does the importance placed on species that are significant to external actors compromise emphasis on other species? Conservation prioritizes highly visible 'sexy' species at the expense of others. The CGIAR is organized around a few dominant crops only.
- What are the implications of invisible species to local people, to society, and to all actors?
- Is it good to make them visible or not? What are the implications of greater visibility for biodiversity conservation? Does it lead to conservation or do invisible species become more threatened? Document the effect of an institutionalized emphasis on few priority species to raise awareness. Is the 'flagship species' approach effective? Does it have spin-off effects?

3.2 Session on "credible science"

The session began with presentations of different tools and approaches used for biodiversity research by the two centres. We focused on conceptual and methodological aspects. Scientists shared information on their disciplinary expertise and corresponding tools and approaches. They discussed differences between them and the way to combine them with regard to a joint approach to tackle biodiversity issues. Research gaps, or more precisely, needs to adapt the current approaches were highlighted during the main discussion and working groups.

Presentation 1. **Ecology of mosaic landscapes** by Meine van Noordwijk, ICRAF

Meine van Noordwijk emphasized scientific issues related to advancing our understanding of the "tree of life", of the ecological role of landscape patterns as well as applied opportunities of recognizing local people's influence on conservation.

Mosaic of knowledge

- Most of the world's biodiversity still is unknown and may disappear before it is recognized.
    - There are many invisible living things and unknown processes in the tree of life – what do we really know?
    - Rare species are numerous but difficult to survey, what is their ecology and what are the threats or advantages of being rare?
- Based on limited surveys, we could try to infer conclusions on rare species (meta-community theory).

Mosaic of habitats

- Understanding successional *processes* is crucial especially in intermediate-intensity land-use system: combine spatial analysis with critical biological features (dispersal modes, life history traits).
- *Patterns*: we can take advantage of modern analytical tools for capturing the influence of "grey scale" patches on ecological connectivity.

Mosaics of threats

- Need to understand multi-scale systems of resource access and exploitation.
- Need for multidisciplinary approaches combining history, anthropology, economics and ecology.
- Clarifying the link between threats and domestication initiatives.

Mosaics of opportunities

- Opportunities through better recognition of local uses and appreciation of organisms.
- Opportunities through reward mechanisms – need of clear monitoring and associated conditionalities.

Presentation 2. **Rewards for biodiversity conservation** by Brent Swallow, ICRAF

Brent Swallow presented first some of his expectations of the Biodiversity Platform:

- We will not focus on justifying national and international level concerns and investments on biodiversity habitats, not valuation *of its own sake* and not redoing the work of CI on overall conservation investments.
- Instead, we will focus on Multi Use Landscapes (or Multifunctional landscapes) and watersheds across the developing world, situations where decisions on land

use practices of small scale farmers have clear impact or where there is a clear threat to biodiversity.
- We will assist the targeted design and implementation mechanisms, coupled with socially acceptable tradeoffs between biodiversity and livelihoods.

After which he proposed the following priorities:

1) Where and what are the mechanisms?
2) Working models of successful landscape management.
3) Extending our work on tradeoffs and model-based predictions.
4) Find ways to harmonize negotiations and governance works of both institutions.

Presentation 3. **Payment for environmental services**. Brian Belcher and Swen Wunder, CIFOR

Brian Belcher presented on behalf of Sven Wunder, specialist in PES (payments for environmental services). He highlighted the potential of synergies between different environmental services and described the on-going research framework of CIFOR and partners.

- PES are voluntary, contingent transactions around well-defined environmental services, including at least one buyer and one seller.
- PES can provide innovative financing sources for biodiversity (especially from the private sector).
- At a landscape level, the combination of different services (biodiversity *and* water, carbon, recreation) can yield synergies and sometimes tradeoffs.
- CIFOR has a multidisciplinary team focusing on PES in Latin America (Bolivia, Ecuador, Colombia, Costa-Rica and Venezuela) and in Asia (Indonesia and Vietnam) with local and international partners, such as Forest Trends, International Institute for Environment and Development (IIED) and CI (Conservation International).

Presentation 4. **Integrated natural resource management.** Bruce Campbell, CIFOR

Bruce Campbell first highlighted open questions related to “what is credible science” and focused on the need to link research to action and of tracking development and conservation outcomes to better design research from the ground realities.

1) Tradeoffs are more a rule than an exception.
2) Conservation and development are not easy to integrate, there is general scepticism against this as in the end livelihoods may be short-changed by interventions.
3) Integrated natural resource management and action research approaches are already embedded in many agendas of different NGOs and organizations under other synonyms.

4) Key elements are: more attention to organizational and institutional perspectives, multiple scales of analysis and intervention, facilitation (getting into the system) and local organizational capacities.
5) On the ground, so-called conservation and development landscapes could lead to major thrusts. Examples can be Malinau (Kalimantan, Indonesia), Cameroon, Guinean highlands (collaboration with ICRAF), Mekong region, etc. Key elements should be "doing *effective* research" and "tracking outcomes".
6) Tools (*participatory* selection of indicators, data collection and analysis and modelling) must be derived from action.

Plate 2. Lasimin, a Sumberjaya farmer shows one of the many thousands of forest tree seedlings planted by local farmer groups as part of the local community forestry program. Farmer groups have made arrangements with local government that provide them with medium term tenure in return for landscape stewardship.

Summary of discussions on “credible science”

After presentations, working groups continued brainstorming on the possible relationships between the ideally expected outcomes and on how science could contribute to promoting or achieve them. While discussing about potential research gaps, participants first focused on the question “whose gaps are we addressing?” as the definition of target audiences (i.e. research community, local, national government or other stakeholders in the conservation world) is a critical dimension in the proposed mandate of the Platform.

Discussions brought out very diverse elements, some focusing on underrepresented disciplines while others explored ways of influencing different audiences and scales within our research. Generally speaking, the Biodiversity Platform aims at conducting multi-scale and multi-disciplinary research in order to reach both the scientific community and various other stakeholders. Main points and questions of the discussions have been grouped by subthemes.

How do we want to approach biodiversity in joint research activities?

How to be credible for science and for different target audience?
Credibility depends on who we are talking to; for policymakers it may not matter that much how technically credible we are, but that we are addressing questions, which are important for them. While we have the role of providing new information to the discussions, relevance is determined by the demand from end-users. Thus, we highlight the importance of adaptive action research as an overall approach for the Platform.

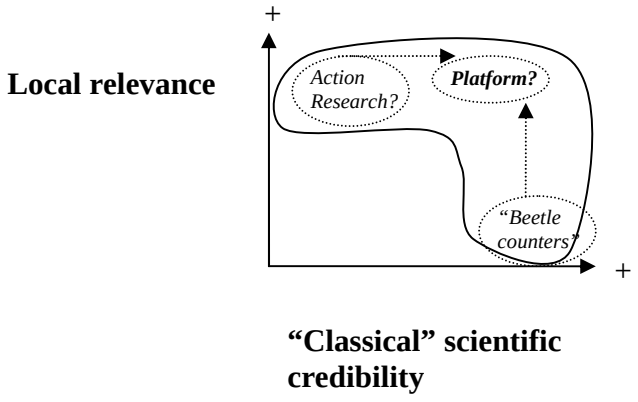


Figure 1. A conceptual representation of two dimensions of credibility (credible by / for whom?) showing how the Biodiversity Platform can combine optimally the technical credibility (measured e.g. by scientific publications) and the locally more development-oriented relevance.

Biodiversity in landscape mosaics: the ecological basis and open questions
To achieve a sustainable multi-functional landscape, we need to better understand:

- The role and influence of spatial patterns on biodiversity in forest ecosystems.
- Landscape-level mechanisms of source-sink links and operations of meta-population concepts.
- How the exploited species use habitats in dynamic landscapes.
- While conserving visible species, we lack the knowledge of whether this indeed leads to conservation of invisible species. We need to document case studies.
- What is the relationship between watershed functions and biodiversity conservation in forest ecosystems?
- How to best restore habitats and species populations.
- The role of participatory tree domestication in livelihood diversification.

Plate 3. Typical landscape mosaic of rice paddies and agroforests close to the Gunung Halimun ("Misty Mountain") National Park in West Java, Indonesia. Workshop field trip participants saw how ICRAF works close to the park, with themes such as tree garden productivity enhancement and tree nurseries of excellence.

When addressing questions regarding biodiversity in landscapes, we have to develop a standardized way to characterize biodiversity across study sites in dynamic landscapes (under threat).

- Tree of life is too complex and there are too many organisms to determine or study in details. According to many studies, the best available indicators for

biodiversity are trees (woody perennials). We should explore further whether trees are best indicators of biodiversity also in human-dominated landscapes.
- Start with the analysis of the biodiversity values of different land use types, and then move to landscape scales to integrate them.

Prioritizing integration of conservation and development

This point was raised many times during discussions throughout the workshop and it was seen as one of the major challenges (as well as an opportunity) for the Platform. Improved methodologies to achieve integrated conservation and development are needed. First of all, by synthesizing, why, when and what type of various integrated research efforts have been successful, we may find solutions and be able to draw wider lessons from win-win situations. They may include better ways to make money from conservation areas and ways to conserve biodiversity in productive areas. To be objective, failures (lose-lose) or intermediate compromises (win-lose) will also provide lessons learnt. Another perspective to the matter was given by indicating, that even if researchers may have sufficient knowledge on how the combination of conservation and development could theoretically work, difficulty lies in convincing people to do it. In other words:

- We need to develop better tools for implementation of integrated conservation with development goals to achieve concrete results.
- New methodologies (such as more people-focused land use plans) are not automatically adapted. Therefore we need better dissemination strategies to influence conservation and development agencies as well as policy makers.

Recognizing local perceptions

Conventionally, local perceptions are included once biodiversity priorities have already been defined scientifically. This often implies that biodiversity outcomes take priority and local benefits become secondary. A new paradigm that consists in complementing scientific approaches with local perceptions from the very beginning is needed. As it provides a means for local perceptions to be included, partners in other sectors such as water, health, education, culture may find it attractive to co-invest in the process. In addition, we are losing local knowledge and local languages due to globalization. To tackle this problem, we recognize the importance of building capacity and "linking generations".

Recognizing social sciences' role in biodiversity conservation

As any effective conservation process would essentially depend on local people's perspectives, one needs to understand them and thus to better incorporate social science into biodiversity and development issues. When we work with communities through action research in the context of improving equity, there are emerging local demands that represent opportunities to link the research with issues other than forestry or biodiversity, e.g. with reproductive health issues. Cultural aspects of conservation and development integration are understudied. To be able to draw general conclusions, we need to define a wide variety of sites and make sure that in every site or landscape we understand the significance of culture.

Scaling up to landscape level
Local perceptions are important as a basis but not sufficient to ensure success. The process has to be multi-stakeholder and multi-scale to be relevant beyond local conditions and to attract other sectors. We need to clarify at what scales in landscapes we want or we need to work. Goal is to look at wider landscapes rather than only to focus on buffer zones without taking into account protected areas or only on areas disconnected from conservation areas. More studies on gradients ranging from peri-urban to forest conditions are needed. When farmers are faced with environmental changes they are innovative in their response. We need to find new ways to scale up from site-specific solutions and results to lessons applicable widely.

Action research approaches for facilitating tradeoffs
Societal consensus (common motivation) of change is needed through democratic process. We may improve this through:

- Including a democratic process in our projects and research topics.
- Investigating how multi-stakeholder meetings or approaches are facilitated. Approaches in i.e. ACM (Adaptive Collaborative Management) and INRM (Integrated Natural Resource Management) are quite similar but initial questions are different. Can the initial questions, or the fact that one starts looking at win-wins or at tradeoffs cause bias to the process and results?
- To be able to draw generalizations or wider conclusions through action research, we have to better identify factors associated with success and failures.

Local – global governance
In order to enhance equity and efficiency in decision-making process and achieve full recognition and inclusion of local priorities within external conservation interests, we need to:

- Improve strategies to recognize and approaches to validate local expertise in order to make it more appealing and credible for decision makers. For instance, forest plans developed by local communities are often rejected by government agencies.
- Understand better local values of species and habitat as drivers of conservation.
- Improve understanding of the role and benefits of biodiversity in multifunctional landscape management and promote institutionalization of the multifunctional landscape approach.
- Develop tools to build vision among all stakeholders of what biodiversity in landscape mosaics management should be.
- Give and develop negotiation support through tools such as cost-benefit analysis, tradeoff analysis, win-win scenarios, models of conservation.
- Strengthen local governance.

To establish a shared vision among all stakeholders of what biodiversity in landscape mosaics management should be, we need to:

- Develop scenarios and mechanisms to integrate livelihood priorities and options with conservation.
- Improve skills and raise interest among people in several landscapes to manage biodiversity more effectively (sustainably) and draw lessons from the experience.

In order to make the biodiversity conservation more appealing and understandable for policy makers, we need to:

- Find ways to recognize the role of forest/biodiversity in poverty reduction and conservation in multifunctional landscapes.
- Do demand-driven action-research with local policy makers (stakeholders).
- Develop better tools for communicating biodiversity objectives i.e. by relating biodiversity with health, water, other issues 'more relevant' to policy makers.
- Improve reward mechanisms and incentive systems through:
    - Generating data for PES assessments.
    - Improving stewardship, corporate social responsibility and certification.
    - Researching compensation systems.

  Where market access is leading to over-extraction, incentive or reward systems may not be the only instruments but strategies to strengthen local governance (negotiation, rules and legislation) are also needed.

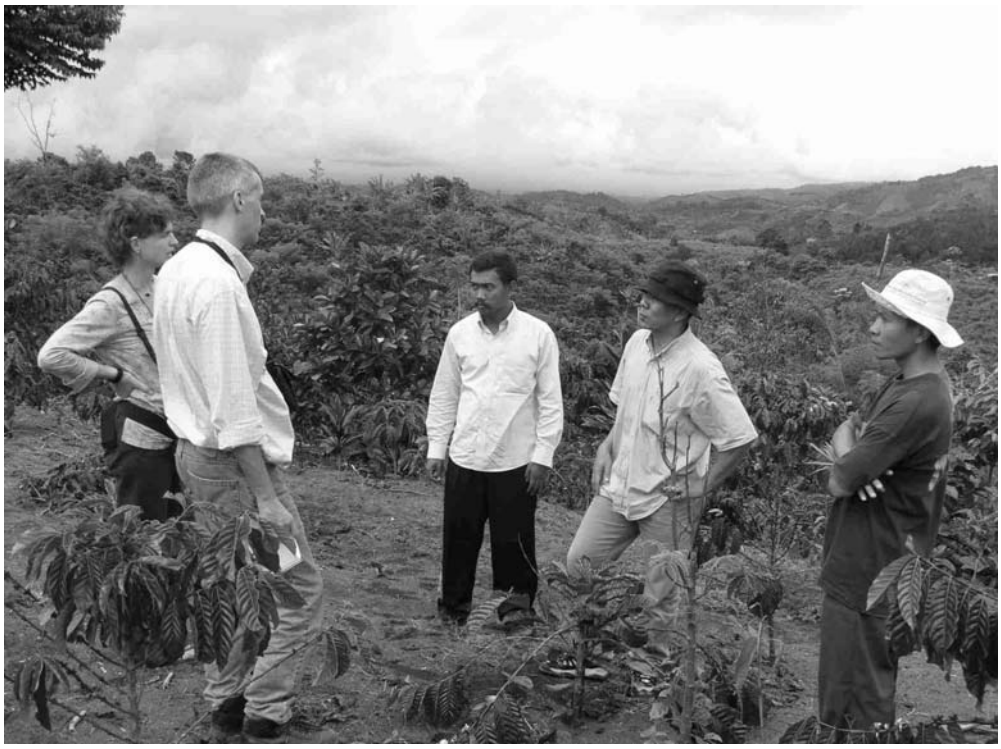


Plate 4. ICRAF staff Jean-Marc Boffa, Laura German and Aunul Fauzi discuss coffee garden maintenance in Sumberjaya, Sumatra.

4. Platform agenda and potential outputs

4.1 Defining the Platform's role, agenda and activities

We need to select priorities for the Platform carefully, based on the policy relevance we want to maintain and on centres' scientific mandates. Their poverty alleviation focus leads to emphasize the utilitarian value of biodiversity, but in order to combine development and conservation objectives, one cannot totally set aside important ethical questions such as "existence values" of biodiversity. This was debated and discussions reflected the fact that positions may be subjective and very personal. Nevertheless, if the Platform will work with and among different stakeholder groups, part of its mandate is to understand how biodiversity perceptions differ.

When defining the Platform's planned agenda and activities, it is important to identify where it will add to activities already conducted by existing institutions. One critical element in the Platform and its relevance is the relationship between science and networking roles (mobilizing our science and global reach to give greater weight in policy to biodiversity as well as to local people and their perspectives). Defining distinctive characteristics of ICRAF and CIFOR will be helpful to better know both what is *useful* as well as what is *practical* in this partnership. These unique elements include the ability to make comparative studies and analyses across sites and thus across scales, as well as taking a multi-stakeholder focus.

One challenge we face is to bring together our complex 'puzzle' of activities. The Platform should add value and bring coherence to these diverse and heterogeneous research activities, as well as to staff and partners implementing them. There should be a clear intellectual incentive for scientists to actively join the Platform. One suggested way of securing people's interest and involvement is by defining an ambitious goal, such as to "identify shared visions which promote synergies between local and broader conservation objectives in multifunctional landscapes" (see Part one for the agreed set of goal and objectives).

Some suggestions regarding the role of the Platform in creating useful information and adding value to what is already available:

- Science:
    - Gap filling by additional field research and better use of under-utilized data.
    - Biodiversity characterization across study sites in dynamic landscapes (under threat).
    - Cost-benefit analyses of tradeoffs, in win-win – lose-less situations.
    - Scientific and other publications for the Convention on Biological Diversity, donors.

- Information sharing, synthesis:
  - Synthesis of information/databases.
  - Clearinghouse mechanisms[2] for sharing existing research findings.

- Empowerment, capacity building:
  - Publications and products directed at local audiences, practical management guidelines for improved understanding.

4.2 Open questions and potential outputs

The identification of broad identity and goals, objectives and desired outcomes of the Platform allows for planning of Platform activities. Yet the following points remain unanswered.

- At a theoretical level:
  - How do we define "the needed better outcome", and the corresponding "better multifunctional landscape?"
  - When it is defined, how do we help progress towards such a better landscape?
- At a more practical level:
  - What balance is sought between synthesis of past research and new research?

It seems likely that this last question will only be answered when a better knowledge of the "puzzle of activities", e.g. the relevant existing results and sites' data will be collected.

Potential outputs
In order to make the Platform's science useful and available to relevant audiences, the Platform has the potential to produce 'outputs' of several types. These outputs are broadly grouped by the audience at which they are aimed. Both the nature and location of the audience must be considered, for example, lay person or scientist; local, regional or global. It was suggested that the Platform could have something of a 'clearinghouse mechanism' on biodiversity and livelihoods in multifunctional landscapes, providing a comprehensive store of information on these topics for the public.

The following potential outputs were mentioned during the plenary session:

Local level
- Products useful for people: local and policy-makers (mainly national) based on integrated knowledge (LEK + PEK + MEK[3]) in formats that are appealing to them.

[2] See the clearinghouse related to CBD: http://www.biodiv.org/chm/default.aspx
[3] Public, Modelers' and Local Ecological Knowledge

- Characterization of 'cultural' values of biodiversity (and the unique ecosystems in which they are embedded) for local and non-local stakeholders in selected pilot sites and their corresponding landscapes.
- Management guideline book directed to local people, translated in (local) ethnic languages based on results. (Not another Multi-stakeholder general audience book but a resource specifically for local people). Could be examples of how other communities managed to maintain traditional practices and local guide to use and manage scientific results.
- Training modules for local stakeholders in biodiversity conservation and management, modules on communication at multiple scales.
- Materials for communities explaining the external value of the biodiversity they look after and means by which they might get help to do this and gain further benefits by their stewardship.
- Tools and incentive schemes for local communities for biodiversity in multifunctional landscape management.

Global/ regional outputs

- A multidisciplinary landscape typology and better understanding of the influence of different landscape configurations.
- Evaluation of landscape changes – How do the multiple functions affect the resulting landscape?
- 'Biodiversity conservation: Local people's perspectives' – a hard hitting document which uses sites to analyze how complementarities of conservation and livelihoods can be achieved.

Topics and format of possible scientific publications

- Scientific publications to support multi-stakeholder management of landscape mosaics.
- Existing (tree) biodiversity characterized and quantified for pilot site(s).
- A comprehensive common database on biodiversity coming from the various research activities of the centres, available and accessible to all through the internet.
- Strategic documents targeted at CBD/COP (Conference of the parties) synthesizing key findings.

5. Platform's Communication and Partnerships – Why, How, When and with Whom?

Partnerships may be established for different reasons, i.e. 1) there is a planned activity for which we want to have adequate partners or 2) we want to work with a given partner and we develop the activity together. In general, it is considered beneficial to communicate with local and national level partners. Some situations, when national institutions have not been well connected to local levels, teach caution. Local NGOs in particular appreciate capacity building, which may be seen as an incentive for them to join the Platform and work with us.

5.1 Partnerships

Both centres have had many partnerships arrangements and the lessons from those in a nutshell might be, that the most important aspects to keep up a functioning partnership are to maintain 1) trust, 2) confidence and 3) consistency in philosophy. Functioning partnerships are not just who we (want to) work with, but how and where.

To improve CIFOR – ICRAF partnership, we could:

- Develop models and principles for the ways we work together and with our partners.
    - Establish procedures in budgeting.
    - Develop principles on how new initiatives will be created and communicated, looking at comparative advantage of match making.
    - Find ways to make communication easier and more efficient.
    - Clarify expectations, i.e. research ownership and accountability (publication ethics).
- Be even more transparent.
- Match interests on topical areas between scientists in both organizations. This way we can achieve commitment by individuals.
- Recognize that personal level contacts are critical.
- Learn from existing arrangements between CIFOR – ICRAF, such as:
    - CAPRI (Collective action to secure property rights for the poor; CIFOR, ICRAF and IFPRI are the main partners)
    - ASB (Alternatives for Slash and Burn; CIFOR currently chairs ASB steering committee, ICRAF hosts ASB secretariat).
    - In Guinea, a formal collaboration through shared project is starting between CIFOR and ICRAF.
- Engaging students: for successful work with students e.g. model from Poverty Environment -network.

The Platform will need to clarify its purpose of collaboration with each of the following categories of partners and develop principles and strategy to go about it:

- International development agencies and NGOs
- International conservation agencies and NGOs
- Advanced research institutions
- Academic institutions (universities, colleges, etc)
- National-level government agencies, institutions and NGOs
- Local-level target communities, NGOs and governments
- Corporate partners
- Donors
- Others

How does CIFOR – ICRAF relationship fit with links with other NGOs?
So far relationships with NGOs have been seen as being mostly project or location oriented, and both CGIAR organizations have a multiplicity of existing memoranda of understanding. The key global partners of CIFOR and ICRAF are somewhat different. While ICRAF is closest to CI and The World Conservation Union (IUCN), CIFOR works closely with Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), The Nature Conservancy (TNC), World Wildlife Fund (WWF) and Tropenbos. Especially at national and local level it is almost impossible to list all our partners because of their large number and site or country specificity. Both organizations would benefit from better partnering with universities.

5.2 Communications

Our aim is to have an "Open space", a communication Platform for biodiversity research, for us and for others and to add value to existing research of both centres.

- Internet site could be the main communication mechanism:
    - There are missed opportunities to link people. A clearinghouse type of approach through a website could be possible. Although a website does not reach everyone, it is a powerful way to reach donors, share information between partners and in general communicate with the rest of the world.
    - Newsletter may be alternative to internet site for those areas without internet connection.
- 'Policy Briefs' as model for more formal information sharing.
- Personal meetings are valuable ways to engage people, as well as sharing specific work activities together (e.g. common writing workshops).

Practical next steps related to communication after the workshop:

- Develop internet page with the main hypotheses and approach to attract donors and interested partners.
- Publish a brochure/leaflet presenting biodiversity Platform as soon as possible:
    - To reach an audience beyond SEA.

    - To enhance the institutionalization of the Platform.
    - To inform donors and potential partners.
- Publish a scientific paper that provides a state of the art review of the concepts and practices for multifunctional management of tropical landscape mosaics for biodiversity conservation at multiple scales as intended by the Platform. This builds on the Matrix matters report and could take the format of a CIFOR-ICRAF occasional paper. It will include lessons learned from field locations (case studies like those presented in the workshop) and emphasize the need for new ways of doing research.

Plate 5. Personal meetings were perceived by the workshop participants as the most important means to communicate.

6. Guiding hypotheses and approach for the "landscape mosaics" project

6.1 The basis: project outline

Having in mind the broader discussion held on the Platform's outcomes and examples of research methods and field experiences, participants discussed research hypotheses that could fit into the rough outline discussed between ICRAF, CIFOR and the Swiss Agency for Development and Cooperation (SDC) representatives in October 2005. The outline is the following:

Landscape mosaics: tools for integrating management and biodiversity conservation in tropical landscapes
Purpose:
Match appropriate management and biodiversity conservation instruments for tropical landscape mosaics to the scales at which external conservation objectives can be combined with local resource use objectives.

Steps:

1. Assemble a pantropical set of sites with clear external biodiversity value and ongoing action research on the conservation/development interface (including active and past forest margins).

2A. Characterize the landscape mosaic from a human use as well as a biodiversity perspective in a standardized way, to allow cross-site comparisons.

2B. Characterize biodiversity perspectives of local communities, local and national government bodies and external conservation stakeholders.

2C. Summarize location-specific lessons about instruments that are being used and tested.

3A. Synthesize data as regards the scale-related tradeoffs involved in local land use decisions.

3B. Synthesize the data as regards 'habitat loss' or 'overexploitation' as main scale-related threats to biodiversity.

4. Adapt and develop (multi-scale) tools and recommendations for combining conservation, management and development.

Two working groups were formed in the workshop and they worked during two consecutive sessions. The first session brought some preliminary results and many interesting ideas but it was decided to continue the work in the same groups to further focus hypotheses.

6.2 Guiding thematic research hypotheses

We indicated in the title guiding and thematic hypotheses because the following reflection is still too general to be directly translated into research hypotheses for the discussed project. In what follows, much material deals with the Platform framework (in the longer term) in addition to what will be feasible for a single project. However, such general themes and hypotheses will be useful to guide further works on the project design.

The core elements of the project outline are:

- Stakeholders and objectives: external conservation objectives compared to local resource use.
- Instruments and scales: incentives (rewards and payments) and regulations (customary/statutory).
- Biodiversity in landscape mosaics: spatial patterns and ecological processes.

Within these core elements there are 3 main thematic areas: **governance**, including incentive mechanisms and other "instruments" for rewarding conservation services, **livelihoods** (especially with regard to the Platform's principle of emphasizing local people's perspectives) and **landscape ecology**.

After the first session, there was a multiplicity of hypotheses and potential research questions. Based on the results of the first working group, the following 4 research hypotheses seem to have captured the most important thematic interests of the participants. At this stage, they may be used as "guiding" hypotheses. They are closely related to the above-mentioned thematic areas:

Biodiversity and livelihoods

1. Timely empowerment of local people through integration of scientific and local knowledge and understanding of thresholds of livelihood-related products and services will mitigate biodiversity loss and maintain/increase livelihood security.

Biodiversity in customary and public policies

2. Overall landscape sustainability (or performance, resilience measured through indicators e.g. land-use intensity, patterns, tree/forest diversity) is enhanced when public policies are informed by and allow for customary / local rules and practices.

Incentives for biodiversity conservation

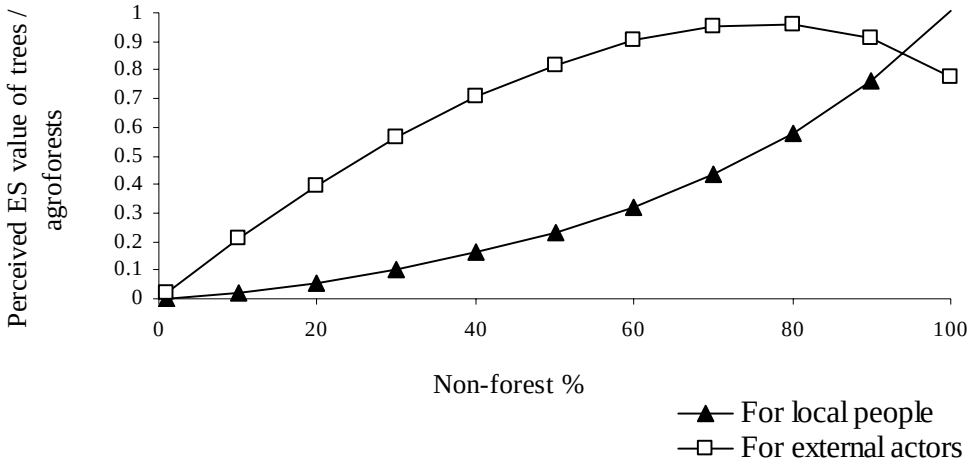
3. Incentives (payments and other types of rewards) for biodiversity conservation in landscape mosaics will only work where:
    - The external values of conservation are considered as higher than known and recognized local values and needs of biodiversity products and services (forest conversion/ harvest/ hunting/ tradition).

- Local regulations and organization, based on a local valuation of biodiversity products and services, effectively constrain individual decisions.
- External commitment is serious and follows up on promises made.
- A collaborative monitoring process ensures trust between stakeholders.

Biodiversity in landscape mosaics

4. External conservation values and local values of biodiversity goods and services vary non-linearly in time depending on the *landscape mosaic and overall intensity of land uses.* One can identify a maximum of external interest related to declining forest cover in landscape mosaics after which they will continuously decrease (see graph 1).

- In forest-derived mosaics, the external conservation value of the area of "intermediate" intensity land use increases more than proportionally to the decrease of forest cover, up to X % of forest cover, where X depends on mosaic configuration.
- In forest derived mosaics, the local ES relevance to the area of intermediate land use increases more than proportionally without threshold.
- The contrast between local and external conservation value thus depends on forest cover.



Graph 1. Gradient of forest cover decreasing on x-axis, conservation value of area covered by trees and agro-forests increasing on y-axis, according to local or external perceptions.

6.3 A look at a potential multidisciplinary "project approach" for integrating management and biodiversity conservation in landscapes mosaics

The steps defined in the project outline start with a multidisciplinary and multi-scale biodiversity and human use characterization and end with an analysis of appropriate instruments to combine local and external objectives, if needed at multiple scales. The second working group worked using this approach rather than directly "by hypotheses". They identified elements which form an "organizing framework" and which correspond to methodological issues which are listed below.

Once again, there are in this sub-chapter more open questions than the methodological action research of the project will be able to answer.

Steps and methodological issues:

A. **Recognizing the less desirable states, the more desirable states**, and the possible pathways / transitions between the states:

- How should we define what is desirable? How much characterization of the system is needed to effectively manage biodiversity outcomes?
- How should we define the scales of the analyzed system? According to biodiversity threats?
- What dimensions of the landscape are subject to thresholds (for targeting management and instruments)? What are key thresholds in the relationships between biodiversity states?
- What are effective methods for identifying and managing "critical uncertainties" relevant to different management options?

B. Identifying and **understanding how the context** (factors outside of the reach of the mechanisms that are put in place) **affects the states.**

B1. Relatively-time invariant and certain factors.

B2. Dynamic and uncertain factors or driving forces or threats.

- Are there external driving forces that rule out change through particular mechanisms and state transitions?
- Can key relationships between livelihoods and biodiversity be organized into the food system (e.g. local dependence on wild foods in stress times, harvesting of bush meat, etc), health system (ecosystem threats to health, disease epidemiology), governance system (decentralization of responsibility for landscape management) and land use?

C. **Identifying the mechanisms for achieving transitions towards more desirable states and implementing mechanisms**, the approaches for moving to "more desirable states".

C1. **Identification** includes various combinations of externally-motivated mechanisms such as regulations, investments, rewards for ecosystem services, and empowerment, rights to resources and support for local organization. It also includes design principles for identifying combinations of the mechanisms that might be most appropriate in different circumstances.

- What are effective methods for understanding where local interests intersect with conservation interests at different scales? [Typology of interactions].
- Can the framing of the approach in terms of win-wins vs. tradeoffs influence outcomes?
- Will a better consideration of the links between biodiversity and livelihoods that are mediated through health, food systems and water quality foster better links between biodiversity conservation and other development processes (e.g. poverty reduction strategies)?
- What thresholds exist in stakeholder interest? How can concept of thresholds help to manage conflict/negotiation?
- What are effective methods for determining the most appropriate scale for mechanisms?
- Are critical economic / governance indicators subject to thresholds or linear relationships? What is the effect of these underlying properties on negotiation support systems? Opportunities for harmonizing conservation and livelihood goals?
- What are the tradeoffs among different land management scenarios? (Quantify gain and losses for different stakeholders.)
- Will integration of incentive and regulatory mechanisms foster more 'win-wins' [create more 'wins' for more stakeholders] than their application in isolation?
- Will integration of biodiversity with other environmental services (that might be of higher local value than biodiversity) enable 'win-wins' in multi-functional landscapes?

C2. "Implementation processes" (potential processes by which the mechanisms are put in place).

- Can the institutionalizing processes of social learning contribute to biodiversity goals (as local people come to better appreciate their own expertise, and/or the value that they get from their biodiversity resources)?
- Are rewards delivered by external stakeholders through a given instruments sufficient to support or shift management to achieve specific biodiversity targets?

6.3 "Post-workshop" comments

In principle, the different results of the working groups - the first one working by thematic hypotheses and the second one working by an 'action research approach' - could be combined within this first project of the Platform. First of all, through thematic syntheses of research findings and applied experiences, the guiding hypotheses could lead to high-level research outputs on crucial topics such as *biodiversity and livelihoods, biodiversity in customary and public policies, incentives for biodiversity conservation and finally biodiversity in landscape mosaics*. A first "axis of intervention" of the project could be to facilitate the information sharing within and between CIFOR and ICRAF according to research findings and site experiences related to these hypotheses.

If we think now about the approach presented above, its development and implementation would take advantage of the "thematic syntheses". Through 'action research', the project will try to answer some of the mentioned open questions previously mentioned. Such 'action research' should then be conducted in sites or landscapes in which a clearly defined 'biodiversity issue' occurs and where the project could bring targeted supplementary information and tools for facilitating needed negotiations.

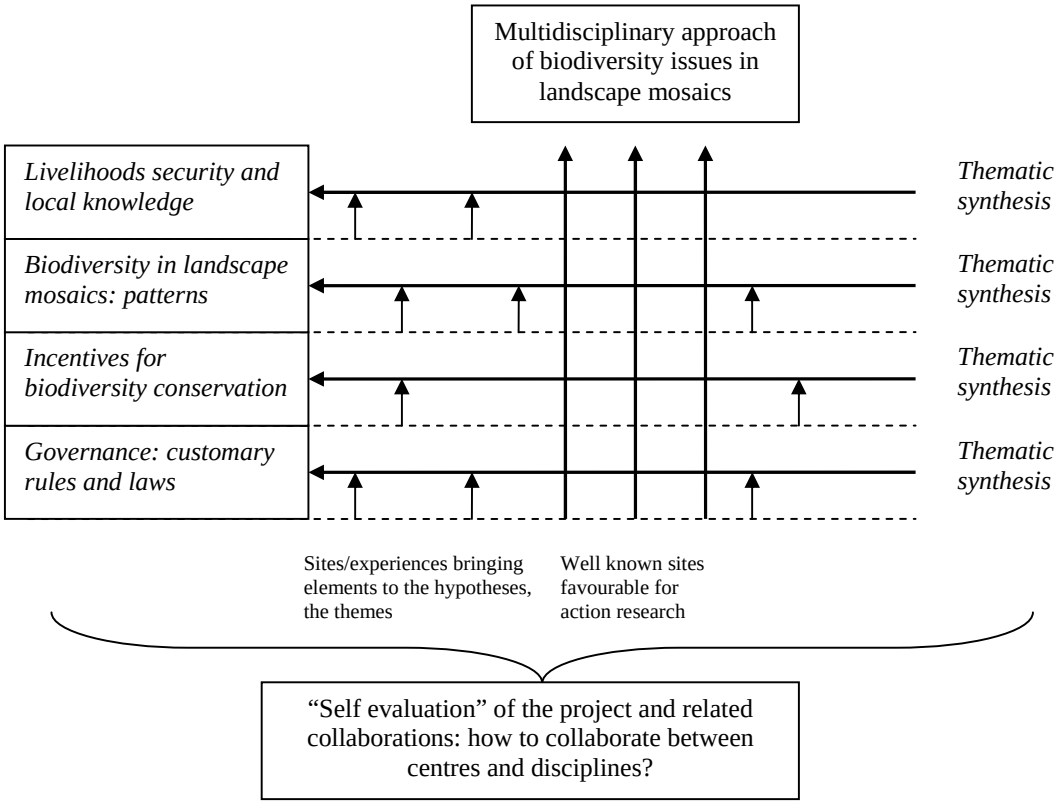


Figure 2. The framework of the project can be characterized by three working domains: thematic syntheses, action research approach and self evaluation (meta-analysis) on "the way to do research".

The work of the project should lead to methodological outputs with regard to a more integrated way to do research, between international centres and partners as well as between different disciplines. In this regard, it was highlighted during the workshop that a "meta-analysis" level for monitoring the work of the Platform and the approach of the project itself (design, effectiveness, etc.) would be crucial in order to give some recommendation on a potential "new way of doing research together".

Next Steps regarding the project

Before entering into the SDC project proposal's writing phase, the "coordination unit" of the Platform still has to gather comments and information. If the main intervention axes of the project seem defined (cross-sites synthesis and selected pilot landscapes for testing an action research approach), the next steps are:

- To work with key specialists on the way to refine the thematic hypotheses and define related operational research questions.
- To work with key specialists on the way to define a preliminary framework and steps for a "multidisciplinary, multi-scale" action-research approach (see the steps of the project's outline).
- To work with the resource people from both institutions to better know :
    - What information is available for sites and landscapes (especially where both institutions are or have been involved)?
    - What links exist between research results or current activities and the project's thematic hypotheses?
    - What could be the key conservation opportunities or constraints that may be interesting to tackle through our approach?
- To contact potential partners and discuss about their interests and possible synergies and to develop specific work plans at site level.

7. “Post-workshop”: CIFOR’s EPMR recommendations related to the Platform

The CIFOR-ICRAF Biodiversity Platform for rural landscape mosaics is a promising step towards enhanced collaboration and synergy between CIFOR’s three research Programmes and ICRAF. As currently formulated, it is well-conceptualized and presents opportunities for fruitful collaboration, with a large number of local, regional and international partners and initiatives such as the Global Partnership for Forest Landscape Restoration. As with many other Projects, this initiative is very broad in scope. CIFOR and ICRAF will need to more clearly define their respective roles and more sharply focus their research activities in order to complement, rather than duplicate, on-going or completed research worldwide related to tropical landscape ecology and forest landscape restoration and management. This will require a more in-depth review of the literature to identify significant knowledge gaps, careful prioritization of study topics and site selection, and strategic partnership development. In its choice of partners, the joint initiative should look beyond the large conservation NGOs like CI, TNC and WWF. It should work more closely with communities, local universities, national forest research organizations, and other relevant organizations that may have complementary expertise (including local and traditional ecological knowledge), and those that are in a position to translate and transfer the project’s findings into improved landscape management practices on the ground, and inform decision-makers at local and national level.

8. Glossary

This glossary was not discussed during the workshop and we intentionally did not want to enter into a “definition” exercise. However, as several important concepts and terms were used during the workshop and are reported in this document, we gather here some existing definitions to serve as general information to the readers.

Action research:

- A method for intentional learning from experience, originally formulated by social psychologist Kurt Lewin. "Action Research" is characterised by intervention in real world systems followed by close scrutiny of the effects. Its aim is to improve practice and it is typically conducted by a combined team of practitioners and researchers.
  http://en.wikipedia.org/wiki/Action_research
- A (usually cyclic) process by which change and understanding can be pursued at the one time, with action and critical reflection taking place in turn. The reflection is used to review the previous action and plan the next one.
  http://education.qld.gov.au/curriculum/learning/literate-futures/glossary.html
- Natural resource management is like jazz; it requires constant improvisation. This implies that researchers can no longer remain exclusively external actors, but need to engage themselves in action research to develop appropriate solutions together with resource users (Sayer and Campbell 2001).

Biodiversity:

- Comprises "genes, individuals, demes, metapopulations, populations, species, communities, ecosystems and the interactions between these entities" (Lindenmayer and Franklin 2002).
- The variability among living organisms from all sources, including inter alia terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity of species, between species and ecosystems (Convention on Biological Diversity 1992).

Cultural landscapes:

- "Combined works of nature and of man." They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.
  http://whc.unesco.org/exhibits/cultland/categories.htm
- A cultural landscape is a geographic area that includes cultural and natural resources associated with an historic event, activity, person, or group of people. Cultural landscapes can range from thousands of acres of rural land to homesteads with small front yards. They can be man-made expressions of visual and spatial relationships that include grand estates, farmlands, public gardens and parks, college campuses, cemeteries, scenic highways, and industrial sites. Cultural

landscapes are works of art, texts and narratives of cultures, and expressions of regional identity. They also exist in relationship to their ecological contexts. *http://whc.unesco.org/exhibits/cultland/categories.htm*

Landscape:

- The fundamental traits of a specific geographic area, including its biological composition, physical environment and anthropogenic or social patterns. Forest landscape is a spatial mosaic of arbitrary boundaries containing distinct areas (patches) that functionally interact (Turner 1989).
- A mosaic, where the mix of local ecosystems or land uses is repeated in similar form over a kilometers-wide area. Thus characterized by a repeated cluster of spatial elements (Forman 1995).
- "*Landschaft ist der Totalcharakter einer Erdgegend*" ("Landscape is the total character of a region of the Earth") (Alexander von Humboldt cited in Zonneveld 1995).
- The landscape is "*die sichtbare Fernumgebung oder Fernsicht*", (the visual surroundings), and "*alle sinnlich wahrnehmbaren Sondererscheinungen*", (all sensory experiences) (Granö 1929 cited in Antrop 2006).
- Landscape embraces geo-ecological relations, spatial patterns, scenic and aesthetical qualities and even social and cultural traditions (Claval 2004 cited in Antrop 2006).
- Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe 2000).
- Large-scale conservation planning efforts at WWF and throughout the wider conservation community have identified priority areas - regions with particular biological importance - for conservation investment. Within WWF's ecoregion programs, such priority areas - often referred to as landscapes or seascapes - are identified in the ecoregion's biodiversity vision. *http://www.worldwildlife.org/science/ecoregions/landscapes.cfm*

Landscape unit:

- For the purpose of the forest practices code, landscape units are planning areas delineated on the basis of topographic or geographic features. Typically they cover a watershed or series of watersheds, and range in size from 5000 to 100 000 ha.
  http://www.for.gov.bc.ca/hfd/library/documents/glossary/L.htm
- One of the fundamental truths in the study of natural systems is that there is no single correct scale on which to study dynamics. It is thus of fundamental importance to recognize how our perceptual scales condition the way we describe systems, how patterns change across scales, and how phenomena at different scales influence one another (Levin 1992).

Landscape resilience:

- The resilience of a system describes its ability to persist, to absorb change and disturbance and still be recognizably the same ecosystem. *http://www.cazr.csiro.au/resilience.htm*

- The capacity of the system to absorb disturbances, reorganize and maintain adaptive capacity (Bengtsson et al. 2003).
- Resilience is the ability of a social-ecological system to undergo, absorb and respond to change and disturbance, while maintaining its functions and controls. Resilience provides the component for renewal and reorganization following the change. Vulnerability is the flip side of the resilience (Carpenter et al. 2001).
- Landscape resilience refers to the rate at which vegetation on the landscape recovers after the disturbance (O'Neill et al. 1997).

Landscape sustainability:

- Sustainability is multi-dimensional, involving the maintenance of natural resources and spatial patterns of land use that are ecologically, economically and socially beneficial. Its spatial dimension is strongly related to the interdependence of land uses and spatial processes, such as fragmentation (Bryden and Amanda 2005).
- "Little literature on sustainability exists at the landscape and regional scales. Yet these scales may be the most important for attaining sustainability. A sustainable environment is an area in which ecological integrity and basic human needs are concurrently maintained over generations." (Forman 1995)
- Stability in the management of the system is an illusion that disappears when one chooses the scale of perception commensurate with the phenomena under investigation (van der Leeuw 2000).
- "The concept of Landscape sustainability should be applied to a wide diversity of landscapes: natural and cultural ones, traditional and contemporary ones, spectacular and ordinary ones. What has to be sustained in each of those is not yet solved. Also the definition of time and scale is needed." (Antrop 2006)

Matrix:

- In technical language of landscape ecology this term refers to the most dominant and most extensive "patch type" (Forman 1995).
- In the conservation biology and forest planning literature it refers to areas not reserved primarily for nature conservation (Graig et al. 2000).
- Comprises landscape areas that are not designated primarily for conservation of natural ecosystems, ecological processes, and biodiversity regardless of their current condition (i.e. whether natural or developed) (Lindenmayer and Franklin 2002).

Multifunctional landscapes (MFLs):

- Co-existence of different spheres of landscape, such as ecology, economics, culture, history and aesthetics (Tress and Tress 2000).
- System of landscape qualities, functions and human values, that interact with the economical function (Soini 2001).
- MFLs should be conceived as tangible mixed natural and cultural interacting systems. They are concrete self-trancendent, self-organizing Gestalt systems of our total human ecosystem. They range from the smallest mappable ecotone to the global ecosphere landscape. For this purpose they have to be treated

simultaneously as products of material, natural biogeophysical systems and mental cognitive, noospheric systems (Naveh 2001).

Tradeoffs:

- Usually refers to loosing one quality or aspect of something in return for gaining another quality or aspect.
  http://en.wikipedia.org/wiki/Tradeoff

Working landscape:

- A landscape used by people, for production purposes as well as for cultural, social and utilitarian values. This term is broader than that of "managed landscapes", as not all landscapes are "managed" and many are even mismanaged (Cunningham et al. 2002).

9. References

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10. Annexes

10.1 Workshop agenda

10.2 Introductory paper

10.3 Presentations

10.4 List of suggested potential sites

10.5 Abstracts

10.6 List of participants