Center for International Forestry Research


# Medium-Term Plan for 2010-12

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# Introduction

Forests comprise a critical resource for the poor. Approximately 30% of the world's land area is covered by forests, which contain about 80% of the Earth's terrestrial biodiversity. Forests serve as a primary source of income for tens of millions of rural poor, and as an important supplementary income source for hundreds of millions more. Perhaps even more importantly, forests provide energy, construction materials, water purification, health benefits, environmental stability and innumerable other means of support to billions. Furthermore, the climate and biodiversity benefits of forests are vital to the welfare of the entire globe and have attributes of "international public goods" (IPGs).

It is imperative that the many important services that forests provide be preserved and enhanced. Crucial among these is carbon sequestration, as the risks posed by climate change are being increasingly recognised by the international community. However, at present there are many threats to the sustenance of critical forest resources, as tropical deforestation progresses at a rapid pace. Pressure from competing land uses and inappropriate institutions drive much of this loss of forest cover. In many areas of the world, control of forest resources is limited to an elite few, due to restrictive and exclusive tenure regimes. Even where management modalities and rules may be appropriate, limited institutional implementation capacity often results in unsustainable management and inequitable benefit distribution.

Opportunities for improved products and services to the poor are often missed by existing research and development efforts. While the bulk of tropical forestry research concerns silvicultural methods that are appropriate to large-scale timber plantations, there is persistent underinvestment in appropriate techniques and opportunities for the production of forest products by smallholders. As a result, there is inadequate attention to novel marketing and production methods that can make a difference in the lives of hundreds of millions of forest-dependant people. Moreover, there is a general dearth of appropriate methods for governing the broader spectrum of environmental and social services that forests provide.

CIFOR, as the forest centre of the CGIAR, is oriented towards identifying and exploiting opportunities for forest management that better serves the long-term interests of the poor. It does so by: identifying improved modalities, procedures, and tools for collective resource appraisal and management; identifying insights that can better target forestry-sector development interventions; and identifying and developing opportunities for the poor to derive improved incomes from the production of forest products. CIFOR targets dissemination of research on these topics towards the main global forestry organizations and processes, other actors and arenas that are likely to have important influences on forests (such as the UNFCC and regional trade bodies), the international media, the international scientific community and the world's leading forestry decision-makers and practitioners, so as to ultimately influence decisions of national governments.

# CIFOR's Context

### *Moving Forward with the New Strategy*

Since the launch of CIFOR's first research strategy in 1996, the state and understanding of the world's forests has changed. To respond to these and other challenges, CIFOR's Board of Trustees approved a new strategy in May 2008 that defines new research directions and the Center's strategic positioning for the next 10 years. The strategy was developed through extensive consultations with staff, the board and CIFOR's partners, including donors, policy makers, researchers, opinion leaders and non-governmental organisations, and positions CIFOR for the emerging context of the 21st century.

The 2010-2012 MTP is the second embodiment of CIFOR's new strategy. As such, it includes a Project Portfolio consisting of six Projects, which follow the "Research Domains" presented in the strategy document. By aligning the research domains with MTP "Projects" CIFOR has simplified its internal reporting to management and the board and associated external reporting to the CGIAR and donors. CIFOR's Board also approved an alignment plan that further consolidates the links between the strategy, the MTP and EPMR recommendations.

### *Regional and Project Offices*

A network of research offices that establish regional presence remains a cornerstone in the implementation of CIFOR's global research agenda. Their strategic role remains to inform the nature and direction of CIFOR's global program so that the global research agenda is integrated, coordinated and relevant. Research offices also provide links to strategic partners and are critical in efforts to disseminate findings. CIFOR currently has two regional offices, in Burkina Faso and Cameroon, project offices in Ethiopia, Zambia, Brazil (recently relocated from EMBRAPA in Belem to Rede de Desenvolvimento, Ensino e Sociedade in Rio de Janeiro), Bolivia, Vietnam, Guinea and Laos and a partner liaison office in Zimbabwe. In accordance with the recommendations of a recent External Review, opportunities are being explored for a project office in China, as well. Southeast Asian activities continued to be coordinated from its Indonesian headquarters.

## Major Changes since the 2009-2011 MTP

1. Implementation of the new strategy continues apace, with consolidation of research and outreach plans within each of the MTP projects through extensive planning meetings.
2. Membership of the MTP project teams and the responsibilities of those leading the MTP projects have been defined in more detail.
3. A total of 15 new Internationally Recruited Staff have been recruited in the past year, so as to ensure that the centre's expertise matches the new agenda.
4. The Board has endorsed the directions outlined in a preliminary version of a new communications strategy.
5. Almost all of the recommendations of CIFOR's last EPMR have been fully implemented.
6. A new budgeting system is in place to promote full cost recovery, and is being used in all proposals.
7. Increased resources continue to be devoted to Africa. The proportion of Center expenditures targeted towards the continent was 35% in 2008 and is projected to be the about the same this year. The share allocated to the region is expected to increase over the MTP period to 39%.
8. The Research Agenda requirement for 2009 is projected at US$24.5 million, a 23% increase over the 2008 expenses. The distribution of effort across the CGIAR System Priorities is projected to be relatively stable over the plan period.
9. It is projected that overall revenues will remain stable at the level of US$23 million for the plan period.
10. The expenditures required for personnel will represent approximately 42% of overall 2009 expenditures. The collaborative budget for partnership research is projected to be 24% of the budget.
11. The Center projects a balanced budget for 2009 and 2010.

## Implementation of EPMR Recommendations

In 2006, CIFOR concluded its External Programme and Management Review, which has now been endorsed by the CGIAR. The report draws very positive conclusions about the quality, relevance and impact of the Center's work, and 17 of the 20 "findings" are very positive. Notable positive observations include:

- "Overall the Panel finds that CIFOR is the leading international forest research center within its mandate and that it is highly appreciated for its credible and relevant high-quality research."
- "CIFOR's research and policy-oriented outcomes are significant and in many cases outstanding."
- CIFOR's communications strategy is "very successful and could serve as a model for other CGIAR centres."
- The Center "conducts its research through appropriate partnerships."
- CIFOR's management processes are generally "logical, thorough, appropriate to the business and programmatic needs, inclusive, flexible, adaptive, and transparent."
- CIFOR's Board of Trustees "exemplifies the expression 'high performing board.'"

The EPMR also noted a number of areas for potential improvement. The report supported CIFOR's previously stated intention to undertake a new strategy after the arrival of a new Director General in 2006. To better substantiate and implement the new strategy, the Review recommended that priority setting should be made more transparent and systematic. In addition, the review recommended that responsibilities of regional coordinators be clarified. With respect to gender, the Review recommended that CIFOR's programmes and Projects increase attention to gender, especially in regard to poverty alleviation. CIFOR accepted all of the EMPR recommendations, and is pleased to report that 16 of 17 have been fulfilled (see Annex 1 for more details).

## Highlights of the 2010 Project Portfolio

### *Portfolio Composition*

In the process of developing the 2008-2018 CIFOR Strategy, the centre attempted to make its selection of research priorities more transparent and systematic. Thus, five steps led to the portfolio presented in this Plan.

1. A preliminary long-list of 13 potential research topics was developed by CIFOR scientists on the basis of three inputs 1) articulation of CIFOR's mission and goals; 2) analysis of the external environment in which CIFOR operates (including the CGIAR and its System Priorities); and 3) suggestions elicited from stakeholders and partners through interviews and an on-line survey.
2. Teams of CIFOR scientists with requisite thematic knowledge were asked to write notional thematic descriptions using a common template. The narratives were shared among staff and were individually discussed and refined during CIFOR's 2007 Annual Meeting.
3. A Delphi approach was applied to rank an indicative list of key research projects. The process was moderated externally and comprised an iterative, anonymous process involving three separate panels (differentiated by expertise). Narratives of the 13 projects and a set of selection criteria were provided to panel members, who performed scoring. Three iterations took place during which panel members scored, provided the rationales for their scores, and revised.

4. A structured scoring exercise was undertaken by members of the Strategy Steering Committee against criteria identified by CIFOR scientists and management. These included the scale of potential benefits, relevance to CIFOR's revised mission, fundability, and complementarity/spillover benefits to the rest of CIFOR's work.
5. Based on the first four steps six priority research Projects were selected for inclusion in CIFOR's future research agenda. These comprise the content of the present plan.

The resulting priorities are operationalised through the Project Portfolio presented in more detail in Table 1, which has no major changes from that of the 2009-2011 MTP. This research portfolio is intended to capitalise on CIFOR's comparative advantage in interdisciplinary research by ensuring that each problem is addressed through attention from multiple disciplines. Thus, each Project attempts to embed biophysical, socio-economic, and institutional expertise to offer solutions to forest policy challenges.

**Table 1. Structure of CIFOR's Project portfolio for 2010-2012.**

| | |
|---|---|
| Project 1: Enhancing the role of forests in climate mitigation | |
| Output 1: | Improved procedures and practices for estimating and managing carbon stocks of tropical forest landscapes |
| Output 2: | Identification of policies, governance conditions, and payment mechanisms that lead to effective implementation of REDD |
| Output 3: | Identification of political economy barriers that are likely to limit the pursuit of REDD activities |
| Project 2: Enhancing the role of forests in adaptation to climate change | |
| Output 1 | Identification of strategies for adapting sustainable forest use and management to the context of climate change |
| Output 2 | Identification of roles and potentials of forests to contribute to reduced social vulnerability beyond the forestry sector |
| Project 3: Improving livelihoods through smallholder and community forestry | |
| Output 1: | Identification of enhanced technical practices that facilitate sustainable smallholder and community forestry and secure safety-nets from forests |
| Output 2: | Tools, guidelines and approaches that strengthen local organizations and forest enterprises to enhance outcomes from smallholder and community forestry |
| Output 3: | Recommendations for national and international policies and approaches that promote sustainable livelihoods through smallholder and community forestry |
| Project 4: Managing the tradeoffs between conservation and development at landscape scales | |
| Output 1: | Development of improved empirical basis and methods for assessing and monitoring environmental services at landscape levels |
| Output 2: | Identification of principles, methods and processes for optimizing conservation and livelihood values from the allocation of land use rights within forest landscapes |
| Output 3: | Identification of improved modalities and approaches to effectively support conservation in forest landscapes |
| Project 5: Managing impacts of globalized trade and investment on forests and forest communities | |
| Output 1: | Analysis of future trends and development pathways for globalized forest-related trade and investment |
| Output 2: | Analysis of governance options to optimize the economic, social and environmental impacts of major trends in forestry-related trade and investment within specific forest landscapes and communities |
| Project 6: Sustainable management of tropical production forests | |
| Output 1: | Identification of efficient public policies or market-based instruments to improve the social and environmental footprint of the use of production forests |
| Output 2: | Improved tools, methods and guidelines for better monitoring and management of tropical production forests |
| Output 3: | Tools and methods to resolve conflicts about land use and resource rights in the use of tropical production forests |

### *System Priority Alignment*

The Center's entire research portfolio aligns with one or more of the CGIAR System Priority (SP) topics identified by the CGIAR Science Council (defined in Annex 3). The Project Narratives and Financial Plan in subsequent sections report how individual Projects and Project Outputs align with System Priorities in terms of research content and resource allocation. It should be noted that in this reporting, the System Priorities are not mutually exclusive, as research activities may fall under multiple priorities simultaneously. In this plan, the "Specific Goal" statements of each SP were used to

attempt to discern alignment by Output, as per the Science Council MTP guidelines. However, given that research may have multiple and nested goals, precise division of expenditures among these overlapping priorities is not possible. As a result, some of the statistics presented should be interpreted with care. For example, while a majority of the research portfolio could be interpreted to align with System Priority 3D, Sustainable Income Generation from Forests and Trees, a minority of the budget is reported to be allocated to this theme, due to division of expenditures with other SPs with which activities also align. To account for the multiplicity of possible alignments, other potential alignments for each Project are also flagged in the narratives.

Based on the Science Council specified procedures for appraising alignment, most of CIFOR's portfolio falls under SP 4A, "Integrated Land, Water and Forest Management at a Landscape Level," and SP 3D, "Sustainable Income Generation from Forests and Trees" (Figure 1). A small share is reported under 5B, "Making domestic and international markets work for the poor". SP alignment is projected to be relatively stable over the plan period.

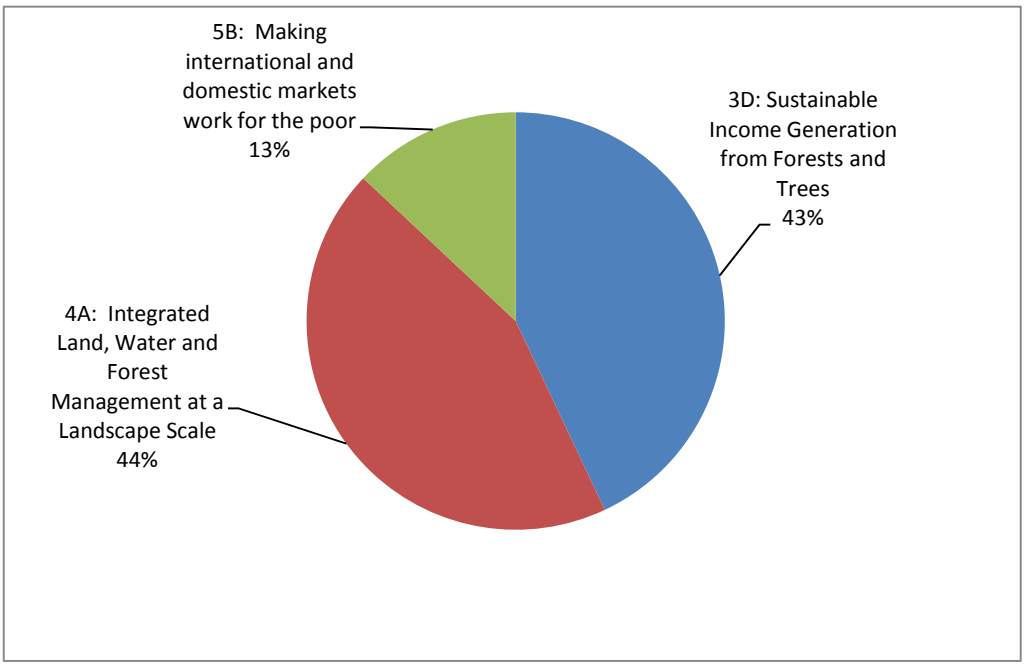


**Figure 1. Proportions of proposed 2009 budget expended on specific CGIAR System Priorities.**

### *Incorporating Gender into the Research Portfolio*

CIFOR's acceptance of an EPMR recommendation that it increase attention to gender in the research portfolio has led to explicit efforts to ensure that the topic is not neglected. 'Gender' has been included on the checklist for internal approval of new proposals, and there has been collaboration with Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN)). For the development of the present MTP, specific "gender focal points" within CIFOR reviewed the contents of proposed Output Targets to ensure that gender is fully addressed where relevant. To socialize gender consciousness, a number of steps have also been taken in 2009, such as internal meetings on the topic, as well as development of an active internal virtual discussion forum.

### *Capacity Building*

Seven capacity building projects are managed by CIFOR in 2009. These include: the Poverty Environment Network (PEN); a capacity building initiative with Wondo Genet College of Forestry and Natural Resources in Ethiopia; a project to improve the forestry research capacity of the Democratic Republic of Congo; a project to establish a forestry research network for Africa-Caribbean-Pacific (ACP) countries; development of a capacity-building toolbox on forest and climate change, a project on building capacity for managing the effects of plantation expansion in Papua and an effort to build capacity in participatory action research (PAR) for climate change adaptation in Africa. These are supplemented by a number of other individual activities to disseminate novel methods and findings from the Center's research on topics ranging from payments for environmental services to enterprise development (one example is the training of dozens of practitioners and graduate students in the application of Multidisciplinary Landscape Assessment tools developed by CIFOR). In addition, CIFOR regularly offers secondment opportunities for staff from national forestry institutes, such as the Indonesian Forestry Research and Development Agency and the Zambian Forestry Department.

PEN has assembled a group of 32 PhD students from various universities to study the links between forests and poverty. It is not only training students, but is also developing a detailed panel data set that should be useful for many further studies of the topic. The initial data sets have been compiled, and the global dataset is now being assembled. Writing and econometric analysis workshops are being conducted.

This is the final year of a capacity building initiative with Wondo Genet College of Forestry and Natural Resources in Ethiopia. Over a five year period CIFOR and partners have been involved in a process of reform at the college, which has seen the college move from a traditional forestry focus with largely on-farm experimentation to a college dealing with social and economic aspects of forestry, teaching and research focused on issues arising from on-farm participatory research, and a shift from pure forestry to broader natural resource management. In 2009 CIFOR scientists will assist in the supervision of five PhD students and will participate as resource persons in some short courses.

In 2007 FAO, CIFOR and IITA started an EC funded project to rehabilitate the forestry and agricultural research capacity of the Democratic Republic of Congo. CIFOR is responsible for the forestry component of this project and to develop and implement with DRC partners a priority forestry research programme for the country. This is done through formal University training in DRC (MSc on biodiversity and forest management with 35 students), a mechanism of competitive funds to support PhD for young scientists or students (13 grantees) and by ad-hoc sessions for hands-on training of existing scientific and technical staff (4 planned for 2009). The project ends in 2009 but we have already secured an extension.

CIFOR and regional partners have run an EC funded project to establish a forestry research network for Africa-Caribbean-Pacific (ACP) countries since 2007. CIFOR is in charge of the overall coordination of the project. This project works through running several research programmes (1 cross-continental, 5 regional and 5 small-scale) – consistent with the research domains in our new strategy (climate change mitigation and adaptation, sustainable forest management) and by supporting a network of research teams in the three regions as well as MSc and PhD grants for young professionals.

CIFOR, in collaboration with USAID and ICRAF, developed a capacity-building toolbox on forest and climate change. The toolbox has been used in training workshops in Bangkok (April 2009) and Pretoria (May 2009). A third workshop will be organized in Washington (July 2009). A similar toolbox will be built with RECOFTC (Regional Community Forestry Training Center for Asia and the Pacific, Thailand) for a two week training on "Community Forestry and Climate Change: Responding to Adaptation and Mitigation Challenges". CIFOR will contribute to building the training materials that RECOFTC will use for training forestry practitioners and decision makers in Asia.

A CIFOR project in Papua seeks to improve the capacity of civil society groups to assess the effects of plantation expansion and to mitigate conflicts that may result. This is complemented by training to forestry agencies, so that they can better quantify and disseminate data on forest cover changes and the consequences thereof.

CIFOR is coordinating an effort to build capacity in participatory action research (PAR) for climate change adaptation in Africa in collaboration with IDRC and DfID. Capacity building efforts in 2008 included: (i) a knowledge exchange workshop among experienced PAR facilitators to share and consolidate methods in PAR; (ii) finalization of a manual entitled, "The Application of Participatory Action Research to Climate Change Adaptation: A Reference Guide"; and (iii) two regional PAR Training and Knowledge Exchange Workshops (W and C Africa, E and S Africa).

## Collaboration with Other International Organizations

### *CGIAR Partnerships*

As a "center without walls," partnership is integral to the way that CIFOR conducts research. At any given time, there are approximately 200 research partners, of which the majority are from developing countries. This partnership approach enhances the effectiveness of CIFOR's research activities, improves the dissemination of research results and strengthens partner capacity. This section describes a set of examples of partnership with other international bodies, within and beyond the CGIAR, to illustrate the approach in practice.

### *Collaboration with the World Agroforestry Centre*

The World Agroforestry Centre (ICRAF) and CIFOR have a strong partnership, as there are many synergies between forest-related research themes (CIFOR's focus) and research themes concerning tree cultivation and use on farms (ICRAF's focus). Thus the two centres coordinate research activities through a number of mechanisms and share a number of joint activities.

**Shared Board of Trustee Members***:* CIFOR's Board of Trustees (BOT) includes an ICRAF Board Member, Juan Mayr, who serves as a member of Programme Committee in his capacity as the representative of ICRAF's Board Chair. CIFOR's Programme Committee Chair, Hosny El Lakany represents the CIFOR BOT Chair on the ICRAF BOT. The ICRAF Chair also attended the January 2009 CIFOR BOT meeting.

**Inter-Centre Coordination***:* At the management level, the ICRAF Southeast Asia Regional Coordinator and CIFOR management hold regular consultations to ensure that opportunities for enhanced inter-Center collaboration are utilised. In addition, the Director Generals of the two centres meet bi-annually to monitor progress and identify new opportunities for collaboration. In 2008, a Centre Commissioned External Review also focussed on enhancing coordination for Southeast Asian activities by the two centres, and led to a joint response.

**Coordinated Strategic Planning:** Scientists from the two centres have participated in each others strategic planning processes, which were completed in 2008. The centres have also jointly brainstormed about how their activities can be most effectively organized, so as to capture synergies in the context of CGIAR Change Management. Scientists working on climate change issues in the two centres met in October 2008 to share lessons and experiences and to identify future areas of collaboration.

**Shared Facilities:** The two centres share substantial infrastructure, as ICRAF's largest regional office outside of headquarters is hosted by CIFOR. In Vietnam CIFOR is hosted by ICRAF in Hanoi.

**Joint Project Implementation**: The two Centres' collaboration on a range of research topics has also yielded several co-funded, ongoing projects, Landscape Management for Improved Livelihoods in Guinea, Improving Economic Outcomes for Smallholders Growing Teak in Agroforestry Systems in Indonesia, Assessing the Implications of Climate Change for USAID Forestry Programs, REDD-ALERT in Indonesia, Vietnam, Peru and Cameroon, the Carbon Benefits Project in Kenya and the Landscape Mosaic project in Cameroon, Indonesia, Laos, Madagascar and Tanzania. In Zambia CIFOR and ICRAF are collaborating to support the COMESA (Common Market for East and Southern Africa) Climate Initiative.

**Joint Publications:** ICRAF and CIFOR have produced 35 co-publications and worked closely together in disseminating information such as policy briefs on issues dealing with fire and the Clean Development Mechanism.

**Joint Biodiversity Platform:** In March 2006 the CIFOR-ICRAF Biodiversity Platform was launched, and his since focussed on collaboration on biodiversity issues in multifunctional landscape mosaics. In December 2007 the two institutions signed an MOU that clarifies roles and responsibilities. The two centres have each appointed a senior scientist to enhance collaboration and streamline biodiversity activities under the platform.

### *Amazon Initiative (AI)*

The AI works across the tropics to assess causes, consequences and possible solutions for natural resource degradation practices in the Amazon basin. The AI evolved from a subset of the cross-regional programme of the ASB, which has not been active in the Amazon Basin for the past few years. Research activities are now centered on the AI System Wide Eco-Regional Program that was approved in December, 2007 by the CGIAR Science Council, and became effective in September 2008. Lead by four CGIAR centres (CIAT, CIFOR, ICRAF and IPGRI) and National Agricultural Research Institutions (NARIs), the AI will design and implement projects based on four main themes: a) Mitigation and adaptation to climate change, b) Sustainable smallholder production on deforested and degraded lands, c) Enhanced benefits from forests for livelihoods and the environment, and d) Market chain development of Amazon products. CIFOR has been an active member of both the Scientific Steering Committee and the Technical Committee of the AI. Under the System-Wide Eco-Regional Program, CIFOR will coordinate the AI work on mitigation and adaptation to climate change.

### *Collaboration with Bioversity and Worldfish Centre*

CIFOR is increasing its collaboration with Bioversity and Worldfish on sustainable management of forest resources in the Congo Basin. We jointly developed and submitted two project proposals to the Congo Basin Forest Fund, one with Bioversity and one with WorldFish. CIFOR also has an agreement to host a Bioversity senior scientist in our regional office premises in Cameroon.

### *Corporate Services Collaboration with WorldFish, IRRI, ILRI and IWMI*

CIFOR is collaborating with the International Water Management Institute (IWMI) and the WorldFish Centre in several HR projects. One of the most significant projects undertaken recently was to institute a joint compensation survey for IRS staff. CIFOR assists the International Rice Research Institute (IRRI) by administering the payroll of their Indonesian national staff. CIFOR is also the host for ILRI (International Livestock Research Institute) Avian Flu Project and assists them in all of their administrative activities (HR, Finance, Admin unit, and IT).

### *Host Country Collaboration*

**Headquarters**
CIFOR has active and productive partnerships with agencies of its Indonesian government host. Selected examples of ongoing host country collaboration include assistance to the Indonesian Forest Climate Alliance, which provided support to the Indonesian government prior to the UNFCCC COP 13 in Bali, research on: improving teak productivity, methods for collaborative community forest management, participatory biodiversity appraisal techniques, modalities for decentralization of forest governance, climate change adaptation to reduce vulnerability, and enhancement of smallholder plantation productivity.

To further enhance host country collaboration, in 2008 CIFOR established a Liaison Office, which regularly interacts with key host country institutions to ensure that CIFOR responds to emerging opportunities and to enhance collaboration with key national and regional institutions. To this end, CIFOR also organized two sets of "Roundtable Discussions" with the Ministry of Forestry in 2009 to discuss and exchange views and scientific findings on pertinent issues related to forests and to identify areas for partnership.

**West African Regional Office**
In Burkina Faso, CIFOR participates in the group Partenaires Techniques et Financiers sur l'Environnement together with all the other donors and technical agencies in the country. The forum aims to coordinate its activities and to supply support to the Ministry of the Environment.

**Central African Regional Office**
CIFOR actively participates in the CCPM (Cercle de Concertation des Partenaires), a informal coalition of partners who assist the Ministry of Forests and the Ministry of Environment of Cameroon with the implementation of the PSFE (Programme Sectoriel Forêts/Environment), the principal framework for the implementation of the forest policy in Cameroon.

## CIFOR in International Policy Arenas

A dozen or so global institutions and processes strongly influence policies and programmes concerning tropical forests and those that depend on them. These include: the World Bank, the Global Environment Facility (GEF), the United Nations Framework Convention on Climate Change (UNFCCC), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Forum on Forests (UNFF), the Convention on Biodiversity (CBD), the International Tropical Timber Organization (ITTO), the World Wide Fund for Nature (WWF), the International Union for the Conservation of Nature (IUCN), and the International Union of Forest Research Organizations (IUFRO). Governments, NGOs and academics often look to these institutions for advice and leadership and some invest large amounts of money in forest activities.

One way a relatively small international institution like CIFOR can use its resources most efficiently and achieve substantial impact is by influencing these institutions and processes. CIFOR has clearly done this. It has worked with FAO, World Bank, ITTO, UNFF Secretariat, IUCN, IUFRO, UNFCCC, and the CBD both individually and through the Collaborative Partnership on Forests (CPF), an inter-agency task force on forests, to which all of them belong. Other international partnerships CIFOR has been actively involved in include the Millennium Ecosystem Assessment (MEA), Environment Task Force of the Millennium Project, the Poverty Environment Partnership (PEP), the Alternatives to Slash and Burn Consortium (ASB), and the Amazon Initiative. CIFOR has also been involved in a growing number of joint activities with CARE International, TNC, Conservation International, and WWF in Cameroon, DRC, Indonesia and Peru.

**FAO:** CIFOR has a wide range of partnerships with FAO, including active participation in the Collaborative Partnership on Forests, which FAO chairs. CIFOR scientists regularly participate in FAO events and meetings, such as the FAO Commission on Forestry, and Regional forestry conferences. CIFOR also worked with FAO on forestry definitions, a code of practice for planted forests, Global Forestry Information Service (GFIS), Tsunami relief, and forestry research capacity building in Africa. We are currently operating two large projects in Central Africa with FAO under EC funding: one regional project on NTFP and small scale enterprises in partnership with ICRAF and one on the rehabilitation of forestry research capacity in DRC in partnership with IITA.

**AFP:** CIFOR has an active role in faciliatating the Asian Forest Partnership (AFP), and has hosted its Secretariat since 2003. It serves to facilitate a network of AFP Partners consisting of government agencies and non-government stakeholders. In collaboration with the Indonesian Ministry of Forestry, the 8th Meeting of the AFP and the AFP Dialogue on Reduced Emissions from Deforestation and forest Degradation (REDD) and Combating Illegal Logging was held in Bali 27-29 May 2009. It was attended by more than 250 participants from a broad range of stakeholders, and included 25 presentations.

**World Bank:** CIFOR has extensive interaction with the World Bank. CIFOR has worked closely with the World Bank in Brazil, the Democratic Republic of Congo, India, and Indonesia and in several regional activities. In addition, CIFOR has provided input into the Bank's Indonesia Forest Strategy, and key World Bank reports frequently cite CIFOR research. Over the last year, CIFOR has been collaborating closely with the Bank's central forestry team in the design of the Forest Investment Program, and with the staff of the Forest Carbon Partnership Facility. At the regional level, CIFOR has worked with World Bank staff on research on the Miombo woodlands in Southern Africa, and has undertaken analysis on forest tenure for ProFor in Latin America. CIFOR has also initiated new work with ProFor on project design guidelines for REDD.

**UNFCCC:** CIFOR has had a strong presence at meetings of the Conference of the Parties (COP) to the Climate Change Convention, as well as SBSTA meetings and expert consultations. To disseminate findings and widen recognition of the important linkages between forests and climate chhange, CIFOR together with the Collaborative Partnership on Forests (CPF) has convened two Forest Day summits as an international platform to not only support multi-stakeholder forests and climate discussions but also to directly inform climate change negotiations at COP 13 and COP 14. Building on the positive response to the first Forest Day held in Bali, Indonesia, during UNFCCC COP 13, Forest Day 2 brought together nearly 900 participants from a diverse range of forest stakeholders, academics and decision makers from around the world, to discuss key issues that link forests with climate change. Planning for Forest Day 3, to be held in conjunction with COP15 in Copenhagen in collaboration with the Danish Government, is well underway.

**IUFRO:** CIFOR has worked with IUFRO on the Global Forestry Information System (GFIS), the science-policy interface, and in the IUFRO Special Project, "World Forests, Society and Environment." The CIFOR Director General provided a keynote address at an IUFRO conference on "Forest Research Management in an Era of Globalization," and CIFOR helped to convene the Fourth Congreso Forestal de Cuba in 2007. In 2008, CIFOR helped to organize a Symposium on Sustainable Forest Management in Africa. Four CIFOR scientists are currently participating in IUFRO's Global Forest Expert Panel on Adaptation of Forests to Climate Change.

**Rights and Resources Initiative (RRI):** CIFOR is a founding partner for an international initiative to advocate for stronger community rights to forest resources. This Rights and Resources Initiative works in collaboration with a global network of organizations, including community groups, NGOs, research institutions and governments in developing countries. With the support of its secretariat, called the Rights and Resources Group, the Initiative conducts global analyses of tenure reform, pro-poor conservation approaches, investment models, global finance and subsidy reforms as inputs to decision-making in countries undergoing forest-related policy

reform. To inform and facilitate use of these insights, the Initiative facilitates and convenes policy dialogues in selected countries and at global and regional levels. CIFOR is collaborating with RRI on a project called "Improving Equity and Livelihoods in Community Forestry" and on research on tenure in West Africa (Ghana and Burkina Faso) and Cameroon, as well as on outreach activities. In May 2009, CIFOR co-organized with RRI and other partners a conference in Cameroon to catalyze new and broader actions by government and civil society to secure tenure rights in Central and West Africa.

**UNFF:** The United Nations Forum on Forests (UNFF) provides a mechanism for communicating the results of CIFOR's work to international audiences and for staying in touch with our major stakeholders. CIFOR co-organized in April 2008, a Country Led Initiative (CLI) in Durban, South Africa with the Department of Water Affairs and Forestry (DWAF), the Swiss Federal Office for the Environment (FOEN), Intercooperation and the Department for International Development (DFID). This CLI (Workshop on Forest Governance and Decentralization in Africa) brought together diverse stakeholders, policy makers and international experts to share experiences and explore opportunities for generating concrete gains from governance reforms and decentralized forest management. This provided a platform for bringing lessons from other international and national processes. It also facilitated the expression of voices of stakeholders at different levels and for sharing the experiences especially of local people in their struggle to manage locally important resources that are, at the same time, of global interest. The CLI provided key inputs for a plenary session on Regional Inputs as well as for a side event at the 8th Session of the UNFF in New-York in April 2009. The Governments of Switzerland and Mexico have now asked CIFOR to organize another CLI on decentralization and REDD in 2010.

## Financial Highlights

During 2008, CIFOR's revenues were US$ 21.2 million and expenditures were at US$ 19.9 million, resulting in a surplus of US$ 1.3 million. CIFOR's liquidity and reserve levels continue to remain above the Board approved and the CGIAR recommended levels, reflecting an ability to comfortably meet the short term and long term obligations. Revenues in 2008 increased over 2007, mainly due to increases in funding from certain donors and new restricted project activities contracted during the year.

Revenues in 2009 are currently projected at US$24.5 million and expenditures are projected at US$24.5 million, leading to a balanced budget. This level of expenditure includes plans to further align the current Center activities with the new strategy which was implemented in early 2008.

The level of funding in 2010 is expected to be US$22.9 million which is slightly lower than is planned for 2009. This is mainly due to some restricted projects that are expected to be completed by the end of 2009. The plan is based on confirmed grants and proposals where negotiations with the funding agencies are at an advanced stage. The plan also includes US$ 0.4 million of restricted projects where donors are yet to be determined. This is a conservative amount, and based on past experience, the Center is confident that these funds will be secured from prospective donors. The proportion of the budget from restricted funds is 64% in 2010. As has been the practice of the Center in the past, future projections for 2011-2012 are conservative.

Personnel costs continue to be below 50% of total costs in the MTP period. Partnership activities are about 24% of costs, in line with the strategy of the Center to work through collaboration. The proportion of the total spending on partnerships reflects a slight decrease from previous years, as a result of tightening our definition of "partnerships", rather than a genuine reduction in such activity. Activities at the Regional offices in Africa are expected to increase.

The Center's facilities and infrastructure are now over 10 years old. An increase in capital expenditure is planned over the MTP period for planned maintenance and replacement, to ensure that the facilities and infrastructure continue to provide adequate service in the context of growth. The Center has adequate capital reserves.

### *Financial Health Indicators*

The CGIAR short term solvency indicator was 213 days at end of 2008 compared to 219 days in 2007. The long term financial stability days were 176 days at the end of 2008 compared to 182 days at end of 2007. The indicators are expected to remain above the CGIAR recommended range over the MTP period.

Indirect costs for 2008 remained constant at 20% (2007 – 20%). The recovery rate was about 10% and has remained similar to that of 2007. CIFOR plans to improve the rate of indirect cost recovery over the MTP period.

### *Risk Management*

The Board of Trustees annually approves the updated risk assessment and the internal control and risk policy of the Center based on the framework developed by the CGIAR Internal Audit Unit. The Board continually monitors the implementation of the risk mitigation strategies.

# Project Narratives

## Project 1: Enhancing the role of forests in climate mitigation

### Project Overview and Rationale

Land-use change including tropical deforestation is a significant source of carbon emissions and an active contributor to global warming. Deforestation is estimated to have contributed on average 1.6 gigatonnes of carbon per year[1]. This represents about one fifth of current global carbon emissions, which is more than what comes from the fossil fuel-intensive global transport sector. Emissions from deforestation in Brazil and Indonesia alone are equivalent to the entire emission reduction target of the industrialized countries during the first commitment period (2008-2012).

Deforestation results from various causes, most of which originate outside the forest sector. Understanding these causes is crucial to identifying appropriate incentives to curb deforestation, while at the same time benefiting people whose livelihoods depend on forests. Forests provide a number of valuable goods and services to society. However, the returns from alternative land uses and the lack of remuneration for forests' intangible benefits sets the protection of forest ecosystems at a disadvantage and promotes deforestation.

Finding ways to maintain terrestrial carbon pools and to reduce carbon emissions from land-use change will be key elements in the future negotiations under the UN Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, which expires in 2012. This could have large-scale implications for the forestry sector, land-use and rural livelihoods in many developing countries. The Stern Review, an analysis of the economics of climate change published by the UK Government, emphasizes avoided deforestation as one of four "key elements" of future international climate frameworks[2].

The political negotiations on the post-2012 climate regime have begun and the approach to stimulate action to reduce emissions from deforestation in developing countries was facilitated. It is focused on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives.

The Project will address key issues that include (i) developing standardized, widely accepted, credible, and scientifically sound methodologies for managing, estimating and monitoring forest carbon pools in a way that leads to real reductions of emissions from deforestation and degradation. In addition, it is expected that reduced transaction costs will lead to increased adoption of REDD and other mitigation schemes, (ii) developing policy interventions in national REDD schemes that are more effective in terms of reduced emissions from deforestation and reduced risks to vulnerable communities. It is also expected that this research contributes to the formulation of policies and national REDD programs that produce pro-poor and pro-biodiversity co-benefits, and (iii) developing policy guidelines on how countries with very different forest and economic conditions could engage with and benefit from a carbon offset compensation regimes –

[1] IPCC. 2007. Climate Change 2007 Synthesis Report.

[2] Stern, Sir Nicholas. 2006. Stern Review: The Economics of Climate Change. Cambridge University Press, Cambridge, UK.

taking into consideration land ownership and access rights, equity and benefit sharing, rights of indigenous peoples and local communities, and institutions.

In response to calls from a number of Parties to revisit deforestation in the climate agenda, the Eleventh Session of the Conference of Parties (COP11) to the UNFCCC in December 2005 initiated a two-year process for the consideration of a policy for reduced emissions from deforestation (RED) in developing countries. Furthermore, it was then decided in Bali COP13 that demonstration activities on reduced emissions from deforestation and forest degradation (REDD) in developing countries should be encouraged. The decision also indicates that a certain degree of readiness needs to be achieved while realizing the potential barriers in implementing REDD at national level.

There is a need to further reinforce measures aimed at managing and expanding forest carbon pools by sustainable forest management, reduced forest degradation, and management of tropical peatlands. There are also possible synergies between managing forest carbon and other ecosystem services and climate change adaptation measures.

**Goal**

The Project's goal is to help improve the international post-2012 climate regime and national level REDD schemes so as to ensure emissions reductions that are more effective, efficient, and equitable, and provide benefits to affected communities in developing countries.

**Objectives**

The objectives of the Project are:

1. To improve procedures and practices for estimating and managing carbon stocks of tropical forest landscapes
2. To identify policy approaches, governance conditions, and payment mechanisms that lead to effective and equitable implementation of national REDD schemes
3. To identify political economic barriers that are likely to limit the pursuit of effective, efficient, and equitable global REDD regime.

**Overall Alignment with CGIAR System Priorities**

This work falls completely within the CGIAR System Priorities. To comply with the Science Council MTP Guidelines, each Output is reported as aligned with one System Priority area based on alignment with Specific Goal statements (under the description of each Output). Under these instructions, the project aligns with SP 3D "Sustainable Income Generation from Forests and Trees)", and its specific goal: to improve opportunities for the market exploitation of a range of forest products and services by the poor. This work is also aligned with the goal and objectives of the planned CGIAR Challenge Program on Climate Change, Agriculture and Food Security and with the CGIAR's Climate Change Initiative.

However, because the System Priorities are not mutually exclusive, and our research has multiple and nested goals, the Project is actually also well aligned with the following:

SP 4A (Integrated Land, Water and Forest Management at Landscape Level).

- Specific goal 1: to develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement.
- Specific goal 2: to enhance the management of landscapes through changing stakeholder awareness and capacity for social-ecological planning at landscape and farm levels.

- Specific goal 3: establish effective rights and opportunities to ensure that the poor profit equitably from forest and tree resources
- Specific goal 5: creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.

### *Project 1, Output 1: Improved procedures and practices for estimating and managing carbon stocks of tropical forest landscapes*

#### Output Description

This part of the Project will examine methodological issues related to measuring and monitoring forest carbon pools and setting the baselines for REDD implementation. It also includes research on managing and expanding forest carbon stocks by sustainable forest management and reduced forest degradation. The research is aimed at producing (i) better knowledge on the role of tropical forests in the global carbon and nitrogen cycles; (ii) cost-efficient methods for REDD baselines and for monitoring changes in forest carbon stocks; and (iii) sustainable forest management concepts inclusive of methods for managing and expanding forest carbon stocks, including specific issues related to tropical peatlands. CIFOR's work will focus on two areas for improvement: (i) Landscape scale, project level carbon monitoring systems and (ii) improved approaches for estimating the effects of conversion of forests on the net greenhouse gas balance of the management system. Within this latter area, CIFOR will focus on improving the understanding of effects of forest conversion to fertilized production systems on soil $N_2O$ emissions and the impacts of deforestation and forest degradation on soil carbon stocks. Peatlands will be a particular focus of the work.

#### Changes from Previous MTP

A manual on developing reference emission levels (REL) is planned for 2012, which draws on the 2010 Target on carbon estimation methods and the 2011 Target on decision support tools, as well as work on baseline scenarios.

#### Alignment to CGIAR System Priorities

This Output falls completely within the CGIAR System Priorities, notably SP 3D "Sustainable Income Generation from Forests and Trees", and its specific goal: to improve opportunities for the market exploitation of a range of forest products and services by the poor, as it is intended to help improve new potential markets for the carbon services of forests.

#### Research Approach to International Public Goods

Research under this Output will contribute to the development of standardized, widely accepted, credible, and scientifically sound methods for measuring and monitoring carbon emissions from deforestation and forest degradation as a basis for compensating reductions in such emissions from developing countries. CIFOR will contribute to the development of best practice methods for establishing baselines against which progress can be measured, and cost-effective systems for tracking the changes in the carbon pools of different types of forests, including peat forests. Research on this topic will include both analysis of existing data and modelling of forest carbon pools under different land use and forest management scenarios. New data collection and field-based research is planned to be carried out in Indonesia, Vietnam and Peru.

This Output can generate at least two types of IPGs:

- Generic tools and methods for measuring and monitoring forest carbon pools that have applicability beyond one nation's borders.

- Scientific understanding of the role of forests in global carbon cycle; and the principles of managing this ecosystem service (carbon sequestration) across spatial and temporal scales for climate change mitigation.

**Impact Pathways**

CIFOR aims at informing and influencing national, regional and global policy processes and ensure that stakeholders have access to the best available science-based knowledge and information on improved procedures and practices for measuring and monitoring forest carbon pools and managing carbon stocks of tropical forest landscapes. Thus, when carrying out inventories of forest carbon pools (e.g. for REDD schemes or for national reporting to UNFCCC), national entities, project developers, and other involved bodies can produce more accurate estimations of forest carbon pools than by just using global default values taken from the literature. This will help to better target climate change mitigation efforts, with attendant climate benefits as a result.

At the global level, CIFOR's main impact pathway will be through direct and indirect engagement with global climate policy processes, including the IPCC and UNFCCC/SBSTA, and by influencing institutions, including the World Bank's Forest Carbon Partnership Facility, the European Commission, and donor governments. CIFOR has also established a strategic partnership with the Division of Early Warning and Assessment of UNEP through a GEF gran on landscape scale carbon measuring and monitoring. Another global impact pathway would be through the publication of tested methods for measuring, monitoring, and managing forest carbon pools.

The impact pathway at national and local levels is through governments, forest managers, logging companies, scientific community and local stakeholders using specific tools and methods for measuring, monitoring, and managing forest carbon pools. In this respect, CIFOR will seek collaboration and complementarity with research institutions and other relevant partners such as ICRAF (focusing on mitigation in agricultural landscapes) and FAO (in the context of national forest programs and forest resources assessment) and through networks strengthening South-South cooperation in research.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 2. Partners' roles in Project 1, Output 1.**

| | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| **Research partner name and country** | Problem / priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator or advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| University of Twente, Netherlands | 15 | 15 | 20 | 10 | 15 | 0 | 10 | 15 | Y | Y |
| University of Jena, Germany | 15 | 15 | 20 | 10 | 15 | 0 | 10 | 15 | Y | Y |
| Bogor Agric. Univ., Indonesia | 15 | 0 | 15 | 10 | 15 | 10 | 15 | 20 | N | N |
| Univ. of Palangkaraya, Indonesia | 15 | 0 | 15 | 10 | 15 | 10 | 15 | 20 | Y | N |
| Univ. of Helsinki, Finland | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | Y |
| Univ. of Leicester, UK | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| GEC, Malaysia | 10 | 0 | 10 | 10 | 10 | 20 | 20 | 20 | Y | N |
| Institute of Pacific Islands Forestry (IPIF-USFS) | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | Y |
| Macaulay Land Use Research Institute, UK | 15 | 15 | 20 | 10 | 15 | 0 | 10 | 15 | Y | Y |
| WRI, USA | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | N | N |
| ICRAF, Kenya | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| Wetlands International, Indonesia | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| WWF Indonesia | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| IMAZON, Brazil | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| Winrock International, USA | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | Y |
| MoF, Indonesia | 0 | 0 | 15 | 50 | 15 | 0 | 20 | 0 | N | N |
| Soil Research Inst., Indonesia | 0 | 0 | 15 | 50 | 15 | 0 | 20 | 0 | N | N |
| SEKALA Foundation, Indonesia | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | N | N |
| Instituto Nacional de Investigacion y Extension Agraria, Peru | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | N | N |
| Research Center for Forest Ecology and Environment, Vietnam | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | N | N |

### *Project 1, Output 2: Identification of policy approaches, governance conditions, and payment mechanisms that lead to effective implementation of national REDD schemes*

**Output Description**

Research under this Output aims at improving the design of REDD schemes and interventions through new information on options for policies, institutional arrangements, and reward mechanisms that lead to effective implementation of national REDD schemes. An expected outcome of this research is that the policy interventions in national REDD schemes are more effective in terms of reduced emissions from deforestation and reduced risks to vulnerable communities. It is also expected that this research contributes to the formulation of national policies and REDD programs that produce pro-poor and pro-biodiversity co-benefits.

The research starts with the development of an analytical framework that can be used to inform the design of a significant portion of the first generation REDD demonstration activities. In the second phase, CIFOR is planning to establish a global research network with national and international partners for a comparative analysis across several first generation REDD demonstration projects. This research will focus on the cost-effectiveness of different policy measures, REDD regimes, and specific activities (such as payments for environmental services as a tool for promoting REDD). This would also include an analysis of trade-offs among efficiency, effectiveness and fairness, and analysis of apportionment of risk.

As an early step of this global comparative analysis, a "lessons learned' study will be carried out analyzing existing policies, institutional arrangements, and reward mechanisms in selected case study countries. These analyses are expected to provide concrete options or solutions for the design and management of carbon-based funding schemes.

**Changes from Previous MTP**

Analysis of the policy effects of REDD is added as an intermediate step before the comparative analysis of demonstration activities. There is increased emphasis on the livelihood consequences anticipated from REDD under different local or sub national governance arrangements.

The 2012 target adds work on benefit sharing mechanisms based on the results generated from comparative analysis in the previous years.

**Alignment to CGIAR System Priorities**

This Output falls completely within the CGIAR System Priorities, notably SP 3D "Sustainable Income Generation from Forests and Trees", and its specific goal: to improve opportunities for the market exploitation of a range of forest products and services by the poor, as it is intended to help improve new potential markets for the carbon services of forests.

**Research Approach to International Public Goods**

This Output will develop a global research network with national and international partners for a comparative analysis across several first generation REDD demonstration projects. For the moment, the countries that will be included in this research are not known, but most likely will include several countries in Latin America, Africa, and Asia.

This Output can generate at least two types of IPGs:

- Generic tools and methods for analyzing different aspect of policies under national REDD schemes
- Scientific understanding of trade-offs among efficiency, effectiveness and fairness, and analysis of apportionment of risk of national REDD schemes.

**Impact Pathways**

As a general impact, it is expected that this research contributes to the formulation of national policies and REDD schemes that are effective and efficient in reaching the objective of the climate convention, and at the same time produce pro-poor and pro-biodiversity co-benefits.

At the global level, CIFOR's main impact pathway will be through direct and indirect engagement with global climate policy processes, including the IPCC and UNFCCC/ SBSTA, and by influencing institutions, including the World Bank's Forest Carbon Partnership Facility. CIFOR will offer to these policy processes and institutions the results of global comparative studies (across REDD demonstration activities) on the implications of different policy measures and specific activities (such as payments for environmental services) developed under national REDD schemes. Another global impact pathway would be through scientific publications.

In a limited number of countries, CIFOR will seek impact on national REDD schemes and policies through collaborative research and partnerships with research institutes, advocacy groups, relevant governmental partners and NGOs to support informed engagement in national level policy arenas. Content will be derived from specific case studies of national REDD schemes, as well as the implications of global comparative research for challenges faced in those countries.

Both global comparative studies and national level work will be carried out seeking collaboration and complementarity with research institutions and other relevant partners and through networks strengthening South-South cooperation in research.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 3. Partners' roles in Project 1, Output 2.**

| | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| Research partner name and country | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator or advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| Australian National University | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | Y |
| Univ. East Anglia, UK | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | Y |
| Univ. Papua New Guinea | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | N |
| WHRC, US | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| Conservation International, USA | 0 | 0 | 30 | 40 | 30 | 0 | 0 | 0 | Y | N |
| FFI, UK | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | N |
| RFF, USA | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | N |
| North Carolina State University, USA | 22.5 | 10 | 22.5 | 22.5 | 22.5 | 0 | 0 | 0 | Y | N |
| WWF, Indonesia | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | Y |
| Local govt. in Aceh, West and Central Kalimantan, Indonesia | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | Y |

### *Project 1, Output 3: Identification of political economic barriers that are likely to limit the pursuit of global REDD regimes*

#### Output Description

Research under this Output will contribute towards improving understanding of political-economic factors affecting the viability of different options for a global REDD regimes under the post-2012 climate regime. A number of proposals for global REDD architecture have now been advanced or are under development, each differing by type of commitment (emission vs. cause-oriented), scale (national vs. sub-national), funding mechanism (fund vs. market-based) and level of attention to co-benefits and perverse incentives or outcomes. CIFOR will contribute research that provides a clear and comprehensive review of the social, political and ecological implications of these alternative proposals, so that debates and negotiations can be grounded in rigorous analysis and the voice of weaker negotiating partners can be strengthened. Through linkages with Project 5, this Project will also explore how major trends in globalized trade and investment in key commodities affecting forests, such as food shortages or the drive for "clean" energy, are likely to affect the overall potential of REDD as a part of the global post 2012 climate regime. CIFOR will also analyze how special interest groups, including corporations, shape domestic commitments and performance on REDD – for example, through their influence on international negotiations or the domestic regulatory environment.

Under this output, we and our partners will assess first-generation REDD processes to formulate national REDD strategies and polices. This assessment will generate new knowledge about what *processes* lead to effective, efficient and equitable REDD strategies; and what *strategies* (policies and measures) address the drivers of deforestation and forest degradation in specific country and forest-sector contexts. The policy processes through which strategies are developed and the technical content of these strategies are equally important to ensure outcomes that are effective, efficient, and equitable. We aim to inform not only governments, but also international donors, corporate and civil-society organisations involved in current and future national REDD initiatives, as to what policy processes and strategies work in different contexts. As a part of this critical review of political economic barriers to adoption of REDD policies or their effective application, CIFOR will conduct a global analysis of REDD designs – based on proposals made by governments and other stakeholders on future REDD architecture - and the broader governance contexts which enhance or undermine their effective application in relation to identified barriers or risk factors. This will help to distil key REDD design factors that are likely to shape the REDD regimes in their effectiveness of in reducing forest-based emissions, efficiency of implementation and equity.

#### Changes from Previous MTP

The focus has expanded from analysis of barriers to REDD adoption to greater analysis of the processes by which REDD policies are formulated. The exercise will benefit from comparative analysis of REDD processes and policies in a select number of countries initiated in 2009 and fully implemented in 2010.

#### Alignment to CGIAR System Priorities

This Output falls completely within the CGIAR System Priorities, notably SP 3D "Sustainable Income Generation from Forests and Trees", and its specific goal: to improve opportunities for the market exploitation of a range of forest products and services by the poor, as it is intended to help improve new potential markets for the carbon services of forests.

### Research Approach to International Public Goods

The IPGs pursued by CIFOR and its partners would take various forms. Global analysis of proposals for international REDD regimes put forth by diverse actors (individual countries, or groupings, advocacy organizations, academics and others) for the international REDD architecture. Country-level as well as comparative studies across countries and sites will give the opportunity to reveal national REDD policy processes and outputs (specific policies and/or measures) and their implications for achieving effective, efficient and equitable outcomes from REDD. The research design and methodology will ensure that the data collected are comparable, so that generalisable conclusions can be reached.

### Impact Pathways

At the international level, CIFOR will engage a group of opinion leaders and representatives of organizations drawn from among climate negotiators, the Collaborative Partnership on Forests, advocacy organizations, and the private sector. Strategic engagement with these actors in the design and dissemination phases for the global comparative analysis of proposed REDD architecture will help to inform the design of the analytical effort, as well as to cultivate them as key target audiences for the uptake of results. Specific efforts will be made to engage those in critical negotiation and decision roles for key policy processes (e.g. UNFCCC COP15). The expected outcome of this research is that the decisions on global REDD regime are informed by the best scientific knowledge, so that greater real reductions in carbon emissions are achieved in a manner that benefits local communities.

At national and sub national levels, key decision makers shaping national policies on REDD design will be engaged in critical reflection of design options that are and are not likely to be effective in the context of different political-economic drivers, based on research findings. Participatory scenario analysis, with the guidance of experts, will also be used to explore REDD design features and broader policy contexts most likely to be effective in enabling REDD to compete with alternative land uses.

### Partner Roles

As CIFOR is a ‘centre without walls’ all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 4. Partners' roles in Project 1, Output 3.**

| | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| Research partner name and country | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminate or advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| Australian National University | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | Y |
| Univ. East Anglia, UK | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | Y |
| Univ. Papua New Guinea | 0 | 17 | 23 | 12 | 18 | 0 | 12 | 18 | Y | N |
| Univ. of Life Sciences, Norway | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | N |
| WHRC, US | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | N |
| CIRAD, France | 0 | 0 | 11 | 11 | 11 | 22 | 23 | 22 | Y | Y |

## Project 2: Enhancing the role of forests in adaptation to climate change

### Project Overview and Rationale

Forests, natural resources and people's livelihoods are all being adversely affected by global climate change. In addition to gradual change in precipitation and temperature patterns, the amplitude and frequency of weather-related disturbances, such as hurricanes, droughts and accompanying fires, and pests and diseases, are likely to increase. Weak institutional, political and economic conditions limit the adaptive capacity of developing countries making their populations vulnerable to climate change, which threatens to undermine many of their livelihoods[3].

In many countries, climate change is predicted to undermine economic development and the ability to achieve MDG targets. The major challenge is to reduce the vulnerability of climate sensitive sectors, including forestry, energy and water resources, to today's climate variability and then to ensure that future development activities are appropriate to future climate contexts. Currently, many countries have already defined adaptation plans or projects but few are considering forests in adaptation.

Forests should be included in adaptation policies for two reasons, first because of their vulnerability and second because of their potential to help reduce the vulnerability of society to climate change. Many socioeconomic sectors (e.g. hydropower or drinking water) are highly vulnerable to climate change and dependent on forest ecosystem services. Thus, an option to help maintain these sectors is the conservation and the adaptive management of forests providing relevant ecosystem services. Forests have not been considered in most adaptation policies to date; as the sectors prioritized in adaptation (e.g. water, energy, or health) define strategies without considering the linkages with other sectors.

Reducing the vulnerability of forest and other sectors depending on forests will require both mainstreaming adaptation into forest management (so that forest managers consider climate change threats on forests) and mainstreaming forests into wider adaptation strategies (so that non-forest stakeholders dealing with adaptation consider forest as potential adaptation measures). This will require developing guidelines for appropriate strategies in climate sensitive sectors, and then integrating climate concerns into national and sectoral economic planning.

### Goal

The goal of the Project is to enhance the adaptation of tropical forests and forest-dependent livelihoods and economic sectors to the adverse effects of climate change, by improving methods used for assessing the impacts and costs of climate change on tropical forest goods and ecosystem services, and influencing policies to reduce vulnerability of human and forest ecosystems.

### Objectives

1. To define and promote forest management practices that decrease the vulnerability of forest ecosystems and production systems to climate change.
2. To promote intersectoral planning that harnesses the potential of forest to help reduce the vulnerability of other sectors to climate change.

[3] IPCC, 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry et al. (eds.), Cambridge University Press, Cambridge, UK.

**Overall Alignment with CGIAR System Priorities**
To comply with the Science Council MTP Guidelines, each Output is reported as aligned with one System Priority area based on alignment with Specific Goal statements (under the description of each Output). However, because the System Priorities are not mutually exclusive, and our research has multiple and nested goals, the Project is actually also well aligned with other SPs, particularly:

SP 3D (Sustainable Income Generation from Forests and Trees).
- Specific goal: to improve opportunities for the market exploitation of a range of forest products and services by the poor

### *Project 2, Output 1: Identification of strategies for adapting sustainable forest use and management to the context of climate change*

**Output Description**
This Output focuses on how climate change will impact forests, the provision of goods and services, and forest people. It also focuses on how to facilitate the adaptation of forest and forest people by adapting forest management practices and policies. To do this, tools and methods for assessing the impacts of climate change on forest will be developed, as well as adaptive management strategies. This Output identifies the forest areas and forest communities most vulnerable to climate change and climate variability, with special attention given to effects on women and children. Related research will identify external interventions that work to strengthen adaptive capacity under different contexts. Exploring synergies between mitigation and adaptation in forests will help to identify win-win practices for people, forests and the climate.

This Output also assesses how forest communities are able to respond to climate induced changes. The tools and methods should assist those directly and indirectly involved in forest management and conservation with efforts to change practices to adapt to climate change.

**Changes from Previous MTP**

This Output has evolved from CIFOR's previous MTP with an increased focus on three aspects. First, more attention has been given to the incorporation of gender issues in analyzing vulnerability and defining adaptation of forest-dependent communities. Second, the analysis of forest adaptation has been placed into the broader framework of forest and conservation planning processes, as landscape approaches are relevant for forest adaptation and many conservation organizations are starting to incorporate climate change adaptation into their agendas. Third, more attention has been given to the linkages between adaptation and mitigation in the forestry sector because of the potential synergies between them: well-designed mitigation projects can contribute to adaptation and adaptation can increase the success of mitigation projects. However, there is presently insufficient understanding of the potential for synergies or conflicts between mitigation and adaptation at local, national, and international levels.

**Alignment with CGIAR System Priorities**
This Output falls within the following CGIAR System Priority:

SP 4A (Integrated Land, Water and Forest Management at Landscape Level).
- Specific goal 2: to enhance the management of landscapes through changing stakeholder awareness and capacity for social-ecological planning at landscape and farm levels.

**Research Approach to International Public Goods**

This Project can generate at least two types of IPGs (from to the typology given by Harwood et al., 2006[4]):

- Tools and methods for research or development that have applicability beyond one nation's borders.
- Scientific understanding of the nature of ecosystem problems, their driving factors, their consequences/interactions with poverty and productivity; and the principles of managing ecosystems (across spatial and temporal scales).

To achieve the generation of these IPGs, tools, methods and scientific results are made available to the international scientific community and policymakers through publications in international journals, policy briefs and training materials.

Research on the climate change threats to ecosystems and their consequences are conducted in different biomes and socioeconomic contexts but with similar approaches, for allowing comparisons and synthesis relevant for the international community. Research sites will be located across Africa, so as to ensure that derived insights are broadly applicable to the continent's forests.

**Impact Pathways**

The research aims at influencing national forest policies in selected countries, companies, and forest stakeholders at local level. The anticipated shift in policies will be towards the integration of adaptation in forest policies, in a way that leads to improved benefits for forest communities and the local and global environment.

The impact pathway to national and local governments, forest managers, logging companies, scientific community and local stakeholders is through specific tools and methods and policy reforms in selected countries to support stakeholders change their management practices. In this respect, CIFOR will seek partnerships with relevant forest communities, forest managers, donors, scientific community, governmental partners and NGOs to provide critical information for mainstreaming adaptation into forest management.

Another impact pathway is through the publication of tested methods for vulnerability assessment, and criteria and indicators for adaptive management of forests.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

[4] R. R. Harwood, F. Place, A.H. Kassam and H. M. Gregersen. 2006. International Public Goods through Integrated Natural Resources Management Research in CGIAR Partnerships. *Experimental Agriculture,* 42:375-397

**Table 5. Partners' roles in Project 2, Output 1.**

| | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| **Research partner name and country** | Problem / priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator or advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| CATIE, Latin America | 15 | 15 | 20 | 10 | 15 | 10 | 10 | 15 | Y | Y |
| CIRAD, France | 15 | 10 | 20 | 10 | 20 | 0 | 10 | 15 | Y | Y |
| IUFRO | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| ICRAF, Indonesia and Philippines | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| IRD, France | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| IISD, Geneva | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| Tyndall, UK | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| SEI Oxford, UK | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| Hadley Center, UK | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| University of Illinois, USA | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| University Gelph, Canada | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| INIA, Spain | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| UNITAR, Africa | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| University Paris 6, France | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| LIPI, Indonesia | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| University Bangui, CAR | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| University Kisangani, DRC | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| Network of INIAs, Latin America | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| National Meteorological Institutes, Latin America | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| IUCN, Latin America | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |
| The Nature Conservancy, Latin America | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |
| WWF, Indonesia | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |

### *Project 2, Output 2: Identification of roles and potentials of forests to contribute to reduced social vulnerability beyond the forestry sector*

#### Output Description

This Output contributes towards developing effective tools and methods for identifying the most critical forest ecosystem goods and services to reduce vulnerability of other sectors (agriculture, energy, water) in the context of climate change and assessing the vulnerability of other sectors and stakeholders dependant on forest ecosystem services. In addition, the Output will assess effective approaches for fostering cross-sectoral adaptation planning involving the forest sector and other economic sectors. It aims at fostering the development of ecosystem-based adaptation, i.e. a set of adaptation policies or measures that consider the role of ecosystem services in reducing the vulnerability of society to climate change, in a multi sectoral and multi scale approach.

In order to harness the potential of forests to reduce vulnerability, land-use planning and governance arrangements (regulatory policies, incentives and decision processes) often need to change. Thus the research contributes towards addressing current deficiencies in land-use planning and governance and developing approaches for fostering cross-sectoral planning in adaptation policies. The research explores how to involve national and regional governments, local communities, private companies and NGOs in managing ecosystems for reducing the vulnerability of people and economic sectors to climate change.

The research deals with financial mechanisms for adaptation, especially payment for ecosystem services which can be an effective mechanism for reducing vulnerability related to the provision of forest ecosystem services. The research identifies effective governance approaches for empowering forestry organizations to influence national and international decision-making on adaptation.

#### Changes from Previous MTP

The evolution of this Output has been characterized by an increased focus on three aspects. First, increased attention has been given to the concept of Ecosystem-Based Adaptation and its implementation in vulnerability assessment and adaptation planning. This is in line with recent developments in the international negotiations on climate change, where several countries have started to propose ecosystem-based approaches to adaptation. Second, more analysis of governance systems across scales and proposals for adaptive governance have been incorporated in this Output. Third, economic analysis of ecosystem-based adaptation and financial mechanisms have been of increasing importance within this Output, because economic valuation is a powerful tool for demonstrating the efficiency of investment in forest ecosystem services for mitigating social vulnerability.

#### Alignment with CGIAR system priorities

This Output falls within the following CGIAR System Priority:

SP 4A (Integrated Land, Water and Forest Management at Landscape Level).

- Specific goal 1: to develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement.
- Specific goal 2: to enhance the management of landscapes through changing stakeholder awareness and capacity for social-ecological planning at landscape and farm levels.

- Specific goal 5: creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.

**Research Approach to International Public Goods**

This Output can generate the same two types of IPGs (from to the typology given by Harwood et al., 2006) as denoted for Output 1. Case studies on intersectoral linkages, policy making and financial mechanisms for adaptation are compared among sites to produce conclusions that are relevant for the international community. A common methodological framework has been developed to ensure that specific cases can be integrated and compared, so as to generate broadly applicable insights about how local environmental services from forests can help to ensure the reliance of other sectors.

To achieve the generation of these IPGs, tools, methods and scientific results are made available to the international scientific community and policymakers through publications in international journals, policy briefs and training materials.

**Impact Pathways**

The research under this Project aims at influencing global policy processes and funding for climate change (including adaptation funds), national policies in selected countries, civil society and companies beyond the forestry sector, and other stakeholders at the landscape level. The anticipated shift in policies will be towards improved integration of forests in adaptation strategies, so that vulnerability beyond the forestry sector is more effectively reduced. In the process, it is anticipated that greater co-benefits for the forest dependant poor may be generated from investment in forest based adaptation than in alternative adaptation strategies.

An impact pathway at the global policy level will contribute to mainstreaming forests into adaptation. This will be achieved through comparative studies on the cost-effectiveness of different policy measures and on specific adaptation measures, such as payments for ecosystem services. The results of these studies will then feed into the global policy process through IPCC and UNFCCC/SBSTA, or by influencing the development of several emergent adaptation funding facilities.

The impact pathway to national and local governments, civil society, companies, and other stakeholders will be through specific recommendations on adaptation policy in selected countries to support the integration of forest in adaptation.

**Partner Roles**

As CIFOR is a ‘centre without walls’ all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 6. Partners' roles in Project 2, Output 2.**

| | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| **Research partner name and country** | Problem / priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator or advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 10 | 10 | Y | Y |
| CATIE, Latin America | 15 | 10 | 20 | 10 | 15 | 10 | 5 | 15 | Y | Y |
| CIRAD, France | 15 | 10 | 20 | 10 | 20 | 0 | 10 | 15 | Y | Y |
| IUFRO | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| ICRAF, Indonesia and Philippines | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| IISD, Geneva | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| Tyndall, UK | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| SEI Oxford, UK | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| UNITAR, Africa | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| START, Africa | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| ETH, Zurich | 15 | 10 | 15 | 15 | 15 | 15 | 5 | 10 | N | N |
| IPB Indonesia | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| University of Kumasi, Ghana, | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| University of Ouagadougou, Burkina Faso | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| University of Bamako , Mali | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| AGRHYMET | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| Universities in Costa Rica | 5 | 0 | 25 | 30 | 25 | 0 | 5 | 10 | N | N |
| IUCN, Latin America | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |
| The Nature Conservancy, Latin America | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |
| WWF, Indonesia | 5 | 0 | 15 | 25 | 15 | 15 | 20 | 5 | N | Y |

## Project 3: Improving livelihoods through smallholder and community forestry

### Project Overview and Rationale

Approximately 400 million people live in or adjacent to tropical forested regions, of whom many are poor and depend on forests for income[5]. Forest-based activities in developing countries provide about 30 million jobs in the informal sector, as well as 13-35 percent of all rural non-farm employment[6]. Developing countries produce $30-40 billion worth of timber and processed wood products each year, although only a small portion of this currently benefits poor households.

At the same time, there is rising global demand for the products that smallholder forestry can provide. With rising prices for high value species, such as teak and mahogany, the potential returns to small scale forestry are becoming an attractive option for small scale foresters. In addition, there is rapid growth of domestic markets for forest products for fuelwood and charcoal, poles, construction timber, low-cost furniture, medicinal plants and other non-timber forest products. However, appropriate silvicultural techniques are often lacking for small scale cultivation of these species, so as to meet the quality demands of premium markets. In particular, there is a need for the development of silvicultural systems that offer good returns, reasonable lags to first harvest, manageable risks, and acceptable asset liquidity on a small scale. This needs to be accompanied by research on markets and institutional arrangements, so as to help reduce transaction costs, utilise opportunities for economies of scale and ensure that the products produced meet the demands of potential buyers.

Forests also offer important subsistence contributions to the well-being of the poor. The World Bank estimates that 90 percent of the 1.2 billion people living in extreme poverty depend on forest resources for some part of their livelihood. Approximately two billion people depend primarily on fuelwood, charcoal and other biomass fuels for their energy. The World Health Organization (WHO) estimates that two billion people rely on traditional medicines for their health, most of which come from forests. Hunting and fishing provide over 20% of household protein requirements in 62 developing countries, and much of this takes place in forests. There are marked differences between males and females in forest use, both in terms of consumption products and marketed products[7]. There is need to better understand whether and how international investments can enhance these contributions.

Widespread changes in forest governance are occurring that favour strengthened local rights over forest resources and more secure land tenure with positive impacts for access, sustainable resource use and management, and intensification of production. It is estimated that at least a quarter of the forest estate in developing countries is now under community control, and this is likely to expand. These changes may enable the adoption of enhanced management practices in a manner not previously possible.[8]

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[5] Chomitz K. et al. 2006. At Loggerheads? Agricultural Expansion and Poverty Reduction in Tropical Forests. World Bank Policy Research Report http://go.worldbank.org/TKGHE4IA30

[6] World Bank 2003. *World development report 2003.*Washington, D.C.: The World Bank.

[7] Perez, M.R., Ndoye, O., Eyebe, A., Ngono, D.L. 2002. A gender analysis of forest product markets in Cameroon. Africa Today. 49: 97-126.

[8] White, A. and Martin, A. 2002. Who owns the world's forests? Washington D.C.: Forest Trends.

Underlying the focus on smallholder and community forestry is the assumption that production and marketing of forest products can be efficient, sustainable and competitive with alternative returns to the assets and skills of rural populations. Thus, a key overall research question is: what interventions offer the greatest potential to improve the contribution of smallholder production practices to local livelihoods?

**Goal**

This Project's goal is to inform a new global understanding of the potential for enhancing the contribution of smallholder and community forests to the well-being of the rural poor. It is intended that CIFOR's research will improve the way smallholder and community forestry concerns are supported by extension programmes and rural development initiatives, thereby improving opportunities for smallholder and community producers.

**Objectives**

1. To identify enhanced technical practices that facilitate sustainable smallholder and community forestry and secure safety-nets from forests
2. To propose tools, guidelines and approaches that strengthen local organizations and forest enterprises to enhance outcomes from smallholder and community forestry
3. To recommend policies and approaches that promote sustainable livelihoods through smallholder and community forestry

**Overall Alignment with CGIAR System Priorities**

This Project largely aligns with System Priority 3D: Sustainable income generation from forests and trees. To comply with the Science Council MTP Guidelines, each Output is reported as aligned with one System Priority area based on alignment with Specific Goal statements. However, because the System Priorities are not mutually exclusive, and our research has multiple and nested goals, the Project is actually also well aligned with other SPs. Much of the research is focussed on markets (especially Outputs 2 and 3) and thus is aligned with system priority 5B, "Making international and domestic markets work for the poor". Output 2 has a focus on rural producer organisations, and thus the research also addresses 5C, "Rural institutions and their governance".

## *Project 3, Output 1: Identification of enhanced technical practices that facilitate sustainable smallholder and community forestry and secure safety-nets from forests*

**Output Description**

This Output is concerned with productive and sustainable smallholder and community forest management to improve income and secure safety-nets from forest resources. Therefore, the research is designed to identify technical and management practices and innovations that improve overall productivity and sustainability. The research will then identify suitable 'recommendation domains' so as to target opportunities for replication. Given the dependence of women and other marginalised groups on forests for their sustenance, and the important role women often play in managing forest resources, the research explicitly recognises the gender dimensions of forest use and management.

The planned research will identify enhanced silvicultural practices for smallholder and community management of high value products from natural forests and plantations. An important research dimension is how the trade-offs amongst these different forest products

and services such as fuelwood, high value timber and honey production should be managed. Finally the research will analyse market and non-market incentives that can help support identified improvements to management of smallholder and community forests.

**Changes from Previous MTP**

In general, the output remains largely unchanged from the previous MTP. One Output Target related to the synthesis of principles for enhancing smallholder forestry was modified and moved from 2011 in the previous MTP to 2012 in the current MTP. This change reflects the slower than expected fundraising for this Output Target.

**Alignment to CGIAR System Priorities**

This Output largely aligns with System Priority 3D, in particular specific goal 1 to "improve opportunities for the market exploitation of a range of forest products by the poor".

**Research Approach to International Public Goods**

Detailed case studies will be conducted on technical practices in a number of target countries: Brazil, Bolivia, Burkina Faso, Cambodia, Cameroon, Ethiopia, Indonesia and Zambia. Research will enhance local practices by making management and technical information on how rural people can benefit more from forest resources available to extension and development officials. Through cross-country comparative analysis the results and lessons will be generalisable, and fed into international and regional processes for technical guideline development that consider both productivity and environmental dimensions (e.g. global certification bodies regularly update their guidelines for certification).

Key research questions include: (a) How should high value timber be managed on smallholdings? (b) How can the trade-offs amongst different forest products and services be managed? (e.g. between fuelwood and honey production; between products favoured by different social groups or genders) (c) What technical management innovations have been successfully applied in smallholder and community production systems, and where can they be replicated? (d) In what way can scientific knowledge complement local ecological knowledge to improve smallholder and community forest management strategies?

Many technical practices are better suited to large timber operations, and the bulk of the world's technical forestry research is directed towards such operations. CIFOR, with its emphasis on smallholders and its long history of work on non-timber forest products is ideally placed to lead these global research efforts on technical practices for smallholders.

**Impact Pathways**

At the global level, CIFOR research will influence the way major players in technical guideline development think about the way smallholder and community foresters can meet international standards (e.g. through certification) and can enhance their operations in terms of productivity and sustainability. Target audiences include those players involved in international and regional processes of guideline development (e.g. via WWF, EU, industry associations, ITTO, IUFRO, and certification bodies). The outreach to these global players will include articles in influential academic journals, keynote presentations on CIFOR research at the major forestry congresses, and background papers for the FAO State of the World's Forests Report and UNFF. Certain guideline changes at the international level may help to influence what happens on the ground. For instance, once new certification guidelines are in place, all certifiers working with local producers would need to apply the

guidelines. Many guidelines are better suited to large players rather than smallholders, so part of the research would result in making guidelines more applicable to smallholders.

At the country level, CIFOR research and outreach will target the intermediaries (e.g., government extension staff and NGOs) who work with smallholders and communities. In these situations, the research would be aiming at improved management practices, as many non-timber forest products have had very limited research focus, and as many management practices are not focussed on smallholder production.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 7. Partners' roles in Project 3, Output 1.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ Tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| DIFOR (Direction des Forets), Burkina Faso | 10 | 20 | 10 | 0 | 10 | 10 | 10 | 30 | Y | Y |
| ANAFOR, Cameroon | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| ICRAF, Cameroon | 20 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | Y | N |
| FAO, Cameroon | 15 | 15 | 10 | 10 | 20 | 0 | 30 | 0 | Y | Y |
| CATIE, Costa Rica | 20 | 20 | 30 | 0 | 30 | 0 | 0 | 0 | Y | N |
| ICRAF, Indonesia | 20 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | Y | N |
| Forestry Socio Economic and Policy Research & Development, Indonesia | 10 | 10 | 20 | 20 | 10 | 10 | 10 | 10 | Y | N |
| Seed Technology Research Institute, Indonesia | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| Forestry and Nature Conservation Research & Development Center, Indonesia | 20 | 20 | 30 | 0 | 30 | 0 | 0 | 0 | Y | N |
| Forestry Research Institute, Banjarbaru, South Kalimantan, Indonesia | 20 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | Y | N |
| Forestry Research Institute, Indonesia | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| Biotechnology Research Center, Indonesia | 20 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | Y | N |
| Swedish University of Agricultural Sciences, Sweden | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | Y |
| FSIV, Vietnam | 20 | 20 | 30 | 0 | 30 | 0 | 0 | 0 | Y | N |
| Safire, Zambia | 30 | 5 | 15 | 15 | 20 | 10 | 5 | 0 | Y | N |
| Zambia Honey Council, Zambia | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | N |

### *Project 3, Output 2: Tools, guidelines and approaches that strengthen local organizations and forest enterprises to enhance outcomes from smallholder and community forestry*

#### Output Description

Limited access to credit and inability to utilise economies of scale in forestry operations are key constraints to the viability of improvements in the productivity of smallholder forestry. In community forestry, improved management is dependant upon effective methods for collective decision making. Thus, a key focus of this research will be to investigate institutional models to identify approaches that are effectively in addressing these necessary conditions for management improvements.

This Output will identify effective interventions that enhance smallholder access to information and markets and how producers can capture a greater portion of the forest product value chains (in terms of value adding, certification, fair trade, greater negotiating power, use of modern technology such as cell phones and internet). Special attention will be paid to how the situation of women in the forest market chain can be improved.

Research under this Output will examine how smallholder and community producers can overcome constraints to achieving gains in efficiency, reducing costs, and capture a higher price for their products. Policy recommendations and guidelines should offer real possibilities for small-scale entrepreneurs to move from informal, ad hoc activities to efficient, productive small-scale forest enterprises and a greater portion of the value chain. Limited financing for smallholder and community forestry enterprises is a major constraint hence the need for comparative analysis of rural financing mechanisms.

#### Changes from Previous MTP

This Output is almost the same as in the previous MTP except that some Output Targets have been moved back in time. Analysis of financing mechanisms is in 2011, rather than 2010, and the comparative analysis of smallholders is in 2012, rather than 2011. These shifts have come about because of additional deliverables for the Output Target in 2010 for major forest product projects in Central Africa and Indonesia, which have received extra funding.

#### Alignment to CGIAR System Priorities

This Output largely aligns with System Priority 3D, in particular specific goal 1 to “improve opportunities for the market exploitation of a range of forest products by the poor”. Increased market opportunities are being sought through strengthened local organisations, improved financing mechanisms and enhanced quality control, amongst other means.

#### Research Approach to International Public Goods

Research under this Project will help strengthen local organizations and forest enterprises by making information available to service providers for such organisations and enterprises on how markets can be better accessed by smallholders and communities and how non-market values can be maintained and enhanced. The work will help smallholders and communities improve their partnerships with forest industries.

Detailed case studies are being conducted in a number of target countries: Brazil, Bolivia, Burkina Faso, Cameroon, Ethiopia, Guinea, Indonesia, Vietnam and Zambia. Through cross-country comparative analysis the results and lessons are generalisable, with a focus on access to markets, market information, rural financing, value chain benefit distribution and improved co-ordination amongst producers.

Key research questions include: (a) What types of organizations, institutional arrangements and business models are likely to optimize benefits (both market and non-market) for smallholder and community producers? (b) Under what conditions can small-scale and community producers achieve gains in efficiency, reduce costs, and capture a higher price for their products? (c) What is required to assist small-scale entrepreneurs make the transition from mainly, informal ad hoc activities to well-organized, productive small-scale, forest-based enterprises in which there is an incentive for reinvestment?

CIFOR is well placed to work on this Project since it builds on previous research on forest product markets, but now with a focus on market organisations and enterprises.

**Impact Pathways**

At the global level, CIFOR research will influence the way that major stakeholders and opinion leaders in the forestry sector support the role of organisations (e.g. producer groups, community organisations) in improving outcomes for poor smallholders and communities. The outreach to these global forestry players (e.g. UNFF, World Bank, IUFRO, key international NGOs) will include articles in influential academic journals, presentations on CIFOR research at major congresses, and direct engagement with a select number of global players. At the national level, target audiences include the organisations themselves. But wide-scale impact will be sought through targeting the networks and the agencies that deal with such organisations: development and conservation NGOs (e.g. including global players such as CARE, WWF), national extension agencies and private companies. Research results are expected to change the information and approaches used by the networks and agencies, which in turn is expected to change the way local organisations function and/or change the information they disseminate. Changes at the local level could include: use of novel market information systems; improved negotiating power vis-à-vis more powerful market actors; better approaches to quality control and reduced transaction costs.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

In each of the sites where we are operating, we have local partners who, in general, are working on specific cases. CIFOR works on the global products in conjunction with some of the local partners.

**Table 8. Partners' roles in Project 3, Output 2.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| Australian National University | 30 | 30 | 10 | 5 | 5 | 5 | 10 | 5 | Y | Y |
| VDS (the Association des Volontaires pour le Development au Sahel), Burkina Faso | 5 | 30 | 0 | 60 | 5 | 0 | 0 | 0 | Y | N |
| UGPPK (Union des Groupements de Productrices de Produits de Karite), Burkina Faso | 5 | 30 | 20 | 40 | 5 | 0 | 0 | 0 | Y | N |
| Tree Aid, Burkina Faso | 5 | 20 | 5 | 0 | 10 | 10 | 25 | 25 | Y | N |
| SNV Netherlands Development Organisation, Cameroon | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | N |
| Wondo Genet College of Forestry, Ethiopia | 10 | 10 | 15 | 25 | 10 | 5 | 10 | 15 | Y | N |
| IRD, France | 20 | 10 | 10 | 30 | 10 | 0 | 0 | 20 | Y | N |
| Inter-Cafe IPB, Indonesia | 10 | 10 | 20 | 10 | 20 | 10 | 10 | 10 | Y | N |
| Pokja Hutan Rakyat Lestari - Gunung Kidul, Indonesia | 10 | 20 | 10 | 10 | 10 | 20 | 10 | 10 | Y | N |
| Faculty of Forestry IPB, Indonesia | 10 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | N | N |
| University of Lampung, Indonesia | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | N |
| NAFRI, Lao PDR | 10 | 10 | 5 | 30 | 20 | 5 | 10 | 10 | Y | N |
| SNV, Zambia | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | N |
| Shanduko, Centre for Agrarian and Environmental Research,Zimbabwe | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | N | N |

### *Project 3, Output 3: Recommendations for policies and approaches that promote sustainable livelihoods through smallholder and community forestry*

#### Output Description

Successful involvement of smallholders and communities in forestry depends on appropriate institutional and legal frameworks and supportive national policies. Research will focus on identifying the policy conditions under which pro-poor and sustainable outcomes emerge. The research aims to get poverty alleviation strategies, programmes and policies to take into account forests and forestry in a way that promotes rural livelihoods, especially those of marginalised people including women and children. The role of forest products in helping people meet subsistence and safety-net needs has been documented but rarely well quantified. Research under this Output will generate data to move beyond generalities about the importance of forests to the specific evidence required to get forest-related issues incorporated into mainstream poverty reduction strategies and policies.

Research under this Output will attempt to improve understanding of the role of forests in human well-being and their contribution to overall household livelihood strategies in terms of income, income diversification, gender, safety nets and seasonal gap filling, and the policy conditions best suited for enhancing smallholder and community forestry benefits. The bulk of this work involves analysis of a global data set compiled from micro-economic household surveys by a cohort of PhD students with a broad household livelihoods focus. These results will be analysed, so as to identify potential points of intervention, where rural development investment may help to improve forest contributions to poverty alleviation goals.

Related research will focus on specific forest product markets and the policy and regulatory impediments that limit such markets for smallholders and communities. The research will also propose policies to support better smallholder and community partnerships with private purchasers. In an era of community-based and decentralised forest management approaches, the research will also offer a better understanding of the way tenure enables improved forest and tree management and livelihood outcomes. There will also be analyses of the impacts (in terms of local incomes, community rights and environmental conditions) of different models of community forestry (e.g. those facilitated by NGOs, autonomously-developed schemes; those based on community ownership, others based on community-state joint management)

#### Changes from Previous MTP

There is one major change in this Output, namely the addition of the Output Target on analysis of community forestry models. This will fill a gap in the current project, which was the lack of Targets related to community forestry (as opposed to smallholder forestry). There is also a new Target in 2010 related to case studies of forest incomes. This has been added given the depth of case study material that is accumulating.

#### Alignment to CGIAR System Priorities

This Output largely aligns with System Priority 3D, in particular specific goal 1 to “improve opportunities for the market exploitation of a range of forest products by the poor”.

**Research Approach to International Public Goods**

The key questions tackled under this Output are likely to result in broadly applicable insights. Such questions include: (a) What is the contribution of smallholder and community forestry to rural livelihoods? (b) What are the costs posed by regulatory impediments to smallholder and community commercialization, and how can these be reduced? (c) How do forest-tenure and management regimes influence the outcomes from smallholder and community forestry? (d) How can policies be tailored to improve livelihoods of marginalised groups, in particular Indigenous people, women and children?.

PhD studies have been facilitated in 20+ countries, and case studies on policy constraints and opportunities to pro-poor forestry are being conducted in a number of target countries: Bolivia, Burkina Faso, Cameroon, Ethiopia, Indonesia, Vietnam and Zambia. Through cross-country comparative analysis the results and lessons are generalisable, and provide information on the forest-poverty nexus that can be widely applied in other humid forest and dry forest sites.

CIFOR is well placed to work on this Project since it builds on previous research on the relations between forests and poverty. In establishing the PhD network and numerous case studies across the globe in the last few years, CIFOR is in an excellent position to make significant advances in understanding. CIFOR is already widely recognised as an authority in the arena of forests and poverty.

**Impact Pathways**

At the global level, CIFOR research will influence the way that major stakeholders and opinion leaders support the role of forests for poverty alleviation, in the context of smallholder and community forestry. Target audiences include the World Bank, the major bilateral donors (via such forums as the Poverty and Environment Partnership – PEP), the Collaborative Partnership on Forests (CPF), the United Nations Forum on Forests (UNFF) through its objective on 'forests for people, livelihoods and poverty eradication', and academic audiences, so that the next generation of forest-livelihood courses are heavily reliant on CIFOR research. The outreach to these global players will include articles in influential academic journals, keynote presentations on CIFOR research at the major forestry congresses, and background papers for the FAO State of the World's Forests Report, PEP and UNFF.

At the country level, CIFOR research and outreach will aim to influence the national policy environment. Policy engagement will be with the key analysts and advisors, both in government and civil society, and with the in-country multi- and bi-lateral actors that have policy influence.

The specific policies that will be considered will be those related to poverty alleviation strategies (e.g. as captured in PRSPs), sectoral forestry polices (e.g. those that deal with forest product transport), and extra-sectoral policies that impinge on forest-based poverty alleviation (e.g. land tenure and trade policies). CIFOR research is expected to lead to, for example, greater consideration of beneficial conditionalities regarding forests and forestry in poverty alleviation strategies, reduced transaction costs in marketing forest products as a result of simplified regulations, and more secure access to forest products as a result of tenure reform.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

In each of the sites where we are operating, we have local partners and/or PhD students and their supervisors. CIFOR works on the global products in conjunction with some of the local partners, as well as with some strong leading academic institutes (e.g. University of East Anglia, Purdue University, Norwegian University of Life Sciences).

**Table 9. Partners' roles in Project 3, Output 3.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| Charles Darwin University, Australia | 10 | 10 | 10 | 30 | 20 | 0 | 0 | 20 | Y | Y |
| Embrapa Amazonia Oriental, Brazil | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | Y |
| ASY (Association SongTaab-Yaigre), Burkina Faso | 5 | 30 | 20 | 40 | 5 | 0 | 0 | 0 | Y | N |
| University of Buea, Cameroon | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| University of Dschang, Cameroon | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| University of Yaounde I & II, Cameroon | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| University of Alberta, Canada | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | Y |
| Norwegian University of Life Science, Norway | 10 | 10 | 10 | 30 | 20 | 0 | 0 | 20 | Y | Y |
| Rhodes University, South Africa | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| University of East Anglia, UK | 20 | 10 | 20 | 20 | 20 | 0 | 0 | 10 | Y | Y |
| Forestry Department, Zambia | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | N |
| UNZA, University of Zambia, Zambia | 0 | 0 | 10 | 40 | 30 | 0 | 0 | 20 | Y | N |
| World Bank | 20 | 10 | 10 | 10 | 10 | 0 | 40 | 0 | Y | Y |

## Project 4: Managing trade-offs between conservation and development at landscape scales

### Project Overview and Rationale

The future's flows of forest ecosystem services will depend upon today's decisions about forest management, utilisation and conservation. While conservation efforts continue to develop and optimise the management of protected areas (PAs), most of the world's biodiversity occurs outside PAs, primarily in fragmented landscape mosaics often representing a range of land use categories. In developing countries the non-market values present in the mosaics are often accorded little priority, and the sustainable productive potentials of different land areas are often inaccurately assumed during land use planning. This results in an inability to be able to adequately assess, and ultimately an excessive loss of environmental, as well as reduced productivity of marketed agricultural and forestry products. To better optimise sustainable utilisation and conservation requires explicitly managing the inherent trade-offs between the two through effective land use allocation practices, as well as improved modalities for assessing and managing environmental services.

The delivery of forest services is increasingly supported through innovative incentive mechanisms such as payments for environmental services (PES). Payments are often concentrated in four areas: carbon, watershed protection, aesthetic landscape value, and biodiversity protection. The core idea of PES is to use compensation as a tool to reconcile hard trade-offs between the interests of landowners (as actual or potential service providers) and service users. While the approach is logical, there remains considerable uncertainty about its efficacy in the field and whether implementation is equitable in that the primary beneficiaries will be the rural poor. The effectiveness and actual potential of PES can be assessed through comparisons to alternative conservation approaches such as integrated conservation and development projects (ICDPs) or community-based natural resources management (CBNRM).

Effective conservation is often dependent on clear access and management rights and responsibilities over land and natural resources. To facilitate this, attention should be given to the levels and extent of devolution for resource management authority, prior informed consent, just and timely compensation for appropriated land and resources, public debate and representation of environmental concerns, transparency and accountability in decision-making (including mechanisms for democratizing key decisions), and the relationship between conservation, human rights, and property rights.

Given the limited success thus far in establishing effective strategies for managing landscape mosaics and in conservation implementation that does not further compromise rural livelihoods, there is an urgent need for new approaches. This Project seeks to provide sound science to develop methods for better prioritising locations for conservation activities, as well as appropriate incentives for the maintenance of conservation services.

### Goal

The Project's goal is to shift policy and practice toward conservation and development approaches that are more effective, efficient and equitable in process and outcome. The research is intended to improve the conservation modalities of international conservation

organizations and donor agencies, and to help foster land use allocation practices that better incorporate non market values, productive potential and local subsistence uses of forest resources.

**Objectives**

1. To develop an improved empirical basis and methods for assessing and monitoring environmental services at a landscape level

2. To identify principles, methods and processes for optimizing conservation and livelihood values from the allocation of land use rights within forest landscapes.

3. To identify improved modalities and approaches to effectively support conservation in forest landscapes

The activities in this Project contribute to CIFOR's goal through the capture and analysis of information on biodiversity in fragmented landscape mosaics for better problem diagnosis, priority setting and decision-making. The contribution of integrating biodiversity conservation leads to improved land use principles and management practices for managed natural forests. Capacity building is central to the Project. It uses research activities to build capacity in several countries, particularly as the research involves young researchers from host countries.

**Overall Alignment with CGIAR Strategic Priority areas**

This work falls completely within CGIAR System Priorities, notably (SP 4a) – Integrated Land, Water and Forest Management at a Landscape Scale, based on the selection of only one System Priority per Output. However, if overlaps among priorities are recognised, in addition, it is aligned with the Priority 3d – Sustainable Income Generation from Trees and Forests, Priority 5c – Rural Institutions and Their Governance and with the Priority 5d - Improving research and development options to reduce rural poverty and vulnerability.

## *Project 4, Output 1: Development of improved empirical basis and methods for assessing and monitoring environmental services at landscape levels*

**Output Description**

Research under this Output will focus on developing tools and approaches for assessment of ecosystem services (provisioning, regulating, cultural and supporting) provided within a landscape. Additionally, the Output will include a synthesis of how scientific and local knowledge can be adapted and integrated into more efficient environmental service monitoring methods in forest landscapes. Work under this Output will develop methods such as participatory interpretation of satellite images for reliably and rapidly assessing the linkages between land use changes and a wide range of ecosystem services provision, especially water and pollination services. A key area of research is the question of the impact of accessibility (physical and institutional) on patterns of exploitation, availability of forest resources and livelihood security. An important component of this Output is to assess how scientific and local knowledge can be integrated in more efficient environmental service monitoring methods in forest landscapes with a particular reference to gender and how women's knowledge and perceptions can be solicited and integrated.

### Changes from Previous MTP

This Output remains essentially unchanged from the previous MTP. However, enhanced methods for spatial analysis of ecosystem service flows will be developed for the 2012 Target, building on research undertaken in 2010-2011. This will ultimately result in a global review on effectiveness of regulation services provided by ecosystems

### Alignment to CGIAR System Priorities

As this Output is mainly focusing on producing environmental services at landscape scale, it is primarily aligned with System Priority 4a – Integrated Land, Water and Forest Management at a Landscape Scale. It fits within Specific Goal 1: "To develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement."

### Research Approach to International Public Goods

The Project will develop methods for integrated assessment of environmental goods and services in forested catchments in several countries, including countries in Latin America, Sub-Saharan Africa and South East Asia (Columbia, Ecuador, South Africa, Laos and Indonesia). Key questions include: (i) What is the influence of landscape configuration on the provision of environmental services (ES - water, local climate, pollination, etc.) and forest products; (ii) How can scientific and local knowledge be used and adapted in defining and monitoring ES of forests; (iii) What is the effect of accessibility (physical and institutional) on patterns of exploitation, the availability of forest resources, and livelihoods security; (iv) How can spatially explicit linkages between land use changes and watershed service provision be rapidly and reliably assessed?

The work will produce new generic tools that can be used to rapidly assess and monitor environmental services, to assist PES implementing agencies better design PES schemes. An understanding of service delivery is essential if one of the key features of PES is to be implemented: the payment based on conditional service delivery. The work will also yield fundamental understanding on the relationships between land cover characteristics and the maintenance of environmental services – such understanding, apart from being needed for practical implementation, will be suitable for publication in the international literature.

### Impact Pathways

The main target groups are: local and national organizations involved in developing and implementing forest management guidelines, national governments, developers of PES schemes and international policy processes on forested watersheds and climate change adaptation and mitigation. Major direct beneficiaries and end users of the results and findings of this Project are extension services, farmer groups, forest enterprises, and NGOs working with farmers and communities. The Project will collaborate with national and local governments, industry, donors, and NGOs in the development of appropriate policies, strategies, and guidelines. It is expected that land use and forest planners involved with the analysis and research will have greater understanding of the cause-impact chains at landscape scales and the ecological and socio-economic variables affecting land-use.

CIFOR's work on biodiversity can influence major governmental and non-governmental conservation and development agencies by providing useful recommendations on institutional mechanisms and tools for analysing, monitoring and evaluating biodiversity in rural land-use strategies. Through scientific publications and active input to key events such

as CBD, COP and major congresses (e.g. World Conservation Congress in October 2008), the role of landscape patches and diverse mosaics for biodiversity conservation will be demonstrated to influence international environmental actors so that they will better invest and integrate protected areas as a part of their surrounding bio-cultural matrix (CBD, IUCN, WWF, WCS, CI, etc.).

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 10. Partners' roles in Project 4, Output 1.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | In kind (Y/N) | Financial (Y/N) |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | | |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| Fundación Natura, Bolivia | 10 | 15 | 5 | 15 | 10 | 15 | 15 | 15 | Y | N |
| Forest Research and Development Agency (FORDA), Indonesia | 20 | 20 | 5 | 5 | 5 | 5 | 10 | 30 | Y | Y |
| Indonesian Institute of Science (LIPI), Indonesia | 10 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | Y | Y |
| CIDIAT, ULA Mérida, Venezuela | 5 | 10 | 10 | 60 | 10 | 5 | 0 | 0 | Y | N |
| FSIV, Vietnam | 10 | 10 | 10 | 20 | 10 | 30 | 10 | 0 | Y | N |
| NAFRI, Laos | 5 | 25 | 15 | 25 | 15 | 5 | 10 | 0 | Y | N |
| NASA, USA | 10 | 10 | 15 | 20 | 20 | 0 | 10 | 15 | Y | N |
| People & Plants International, USA | 0 | 15 | 15 | 15 | 15 | 10 | 15 | 15 | Y | Y |

### *Project 4, Output 2: Identification of principles, methods and processes for optimizing conservation and livelihood values from the allocation of land use rights within forest landscapes*

**Output Description**

This Output will include research into on-going negotiation mechanisms and land tenure reforms in forested landscapes that can contribute to improved landscape management. The research will provide tools that facilitate clearer recognition of the trade-offs between conservation and development, and improve prioritisaion of land use. CIFOR research will develop collaborative decision-making and monitoring tools for strengthening community involvement and meaningful participation in conservation and land use planning, especially by women and other disadvantaged stakeholders. Research will illuminate how governance processes and institutions at local and landscape levels can be reformed to become more legitimate, increase the security of rights, and balance customary norms and formal policy. The work will yield insights related to what kinds of land use rights lead to win-win situations for conservation and development, and will produce tools and approaches for assessing trade-offs, mitigating conflicts and conducting multi-stakeholder negotiations.

**Changes from Previous MTP**

The Output remains essentially unchanged from the previous MTP. A 2012 Output Target will carry forward the work through an assessment of the implementation of land use planning tools and approaches and consequent equity effects within local communities.

**Alignment to CGIAR Syste m Priorities**

This Output is primarily aligned with System Priority 4a – Integrated Land, Water and Forest Management at a Landscape Scale. It fits within Specific Goal 1: “To develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement.” It also fits within Specific Goal 3: “To establish effective rights and opportunities to ensure that the poor benefit equitably from forest and tree resources”. Finally, it helps to satisfy Specific Goal 4: “Creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions”.

**Research Approach to International Public Goods**

CIFOR’s previous work on water services, biodiversity assessment, multidisciplinary landscape surveys and forest restoration make it well placed to work in this area. The Output will also develop pragmatic generic approaches to help managers plan and implement more ‘biodiversity-friendly’ land use guidelines, and management activities, with reference to securing access and more optimised tenure rights for local communities. Key research questions include: (i) What kinds of governance processes (transparency, participation, accountability and capacity) in managing trade-offs at local and landscape levels lead to effectiveness and sustainable outcomes? (ii) What collaborative planning and monitoring tools can be used to identify trade-offs and promote community empowerment and participation in conservation? (iii) How do different interest groups perceive the legitimacy of customary norms and formal policies on resource access and management; (iv) What kinds of tenure regimes lead to positive outcomes for forests and marginalised people, including women? Work will be conducted throughout the humid tropics (Brazil, Bolivia, Cameroon, Tanzania, Laos and Indonesia) in diverse policy settings. The research should lead to insights on land tenure and collective action that will change the way

scientists and implementers think about forests and tenure, and about the role of collective action in shaping conservation and development outcomes.

### Impact Pathways

At the country level, engagement will be with the key landscape planning agencies (both national and local government officials, NGOs and social movements), and policy analysts and advisors at the national level, both in government and civil society.

Furthermore, concepts of participatory negotiation mechanisms and examples of revised land use and land access models will be disseminated to development agencies and other key actors (UN agencies and processes, the World Bank, the regional development banks, the European Commission). The provided information will serve to demonstrate the necessary role of farmers for biodiversity-oriented landscape management and provide elements to reward them by different channels (especially the State, the private sector and environmental NGOs in corridor areas). More effective biodiversity conservation will allow environmental services of importance to the poor to be sustained longer into the future. In addition, enhanced *in situ* conservation will avert potential losses of important future use values for biodiversity in activities that benefit the poor, such as medical research and crop genetic improvement. More effective land use allocation practices should not only help to preserve environmental benefits, but should also help to ensure that intensively cultivated areas are located where productive potential is highest, thereby improving economic benefits.

### Partner Roles

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 11. Partners' roles in Project 4,Output 2.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | In kind (Y/N) | Financial (Y/N) |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | | |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| Alternatives to Slash-and-Burn Consortium (ASB), Kenya | 10 | 25 | 20 | 10 | 15 | 5 | 10 | 5 | Y | N |
| GTZ, Cameroon | 20 | 20 | 15 | 20 | 10 | 5 | 5 | 5 | Y | N |
| WCS, Cameroon | 20 | 20 | 10 | 20 | 10 | 5 | 10 | 5 | Y | N |
| WWF, Cameroon | 20 | 20 | 10 | 20 | 10 | 5 | 10 | 5 | Y | N |
| KfW, Cameroon | 20 | 20 | 15 | 20 | 10 | 5 | 5 | 5 | Y | N |
| Ministry of Forestry and Fauna,Cameroon | 20 | 20 | 10 | 20 | 10 | 5 | 10 | 5 | Y | N |
| DED, Cameroon | 20 | 20 | 10 | 20 | 10 | 5 | 10 | 5 | Y | N |
| Institute of Development Studies (IUED), UK | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | Y |
| Swiss Federal Institute of Technology (EPFZ) | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | Y |
| Direction Nationale des Eaux et Forets (DNEF), Guinea: | 20 | 20 | 0 | 5 | 5 | 20 | 20 | 10 | Y | N |
| ICRAF, Mali | 15 | 15 | 15 | 0 | 15 | 15 | 10 | 15 | Y | Y |
| Center for Social Forestry, University of Mulawarman, Samarinda, Indonesia | 5 | 5 | 5 | 5 | 10 | 10 | 10 | 50 | Y | Y |
| District Governments and Forestry Departments of Malinau and West Kutai, East Kalimantan, Indonesia | 10 | 10 | 10 | 10 | 20 | 10 | 10 | 20 | Y | Y |
| Ministry of Forestry, and its Center for Forestry Education and Training (CFET), Indonesia | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 20 | Y | Y |
| International Model Forest Network, Indonesia | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 20 | Y | Y |
| UNILA (University of Lampung), Indonesia | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | N |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mitra Kutai and Kutai National Park Authority, Indonesia | 30 | 0 | 35 | 0 | 0 | 25 | 0 | 0 | Y | N |
| Inspirit Inc. , Indonesia | 20 | 0 | 30 | 0 | 0 | 30 | 20 | 0 | Y | N |
| RECOFTC, Indonesia | 40 | 0 | 30 | | | 30 | 0 | 0 | Y | N |
| National Agricultural and Forestry Research Institute (NAFRI), Laos | 10 | 10 | 10 | 30 | 30 | 5 | 5 | 0 | Y | N |
| IUCN/CEESP, Switzerland | 10 | 15 | 20 | 20 | 20 | 5 | 5 | 5 | Y | Y |
| LAMIL, Guinea | 10 | 15 | 20 | 20 | 20 | 5 | 5 | 5 | Y | Y |
| US Forest Service, Guinea | 33 | 0 | 39 | 0 | 0 | 28 | 0 | 0 | Y | N |

### *Project 4, Output 3: Identification of improved modalities and approaches to effectively support conservation in forest landscapes*

#### Output Description

This Output's research will assess the comparative efficacy of alternative conservation modalities under different contexts, in terms of forest conservation and effects on forest dependant people under different landscape conditions, This analysis will identify the conditions under which PES could be more effective in delivering ecosystem services and improved livelihoods than conventional ICDP interventions, and the key design elements that are necessary for effective PES schemes. In addition, CIFOR will analyse whether alternative institutional models (including extractive reserves, national parks, protected areas and indigenous reserves) are effective in buffering deforestation, while fostering effective local engagement and empowerment. Another component of this Output will comprise a comparative assessment of the long-term impacts of donor-funded biodiversity conservation to provide a framework for "best practice" in terms of delivering optimum outcomes for, and better integration of, conservation and development.

#### Changes from Previous MTP

The Output remains largely unchanged from the previous MTP. As an evolution of the prior work, an Output Target for 2012 is added on a comparative assessment of the long-term impacts and effectiveness of donor funded biodiversity conservation assistance in developing countries

#### Alignment to CGIAR System Priorities

Achievement of this Project goal contributes to the CGIAR system priority 4a as this Output is primarily centrally concerned with management of land and forests at the landscape level. It fits within Specific Goal 1: "To develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement." It also fits within Specific Goal 3: "To establish effective rights and opportunities to ensure that the poor benefit equitably from forest and tree resources".

#### Research Approach to International Public Goods

Research under this Project helps those involved in conservation initiatives learn from past experiences. Some key research questions being asked include: (i) What are the success factors to achieving win-win outcomes for livelihoods and forest landscape sustainability? (ii) Under what circumstances will payments for environmental services make a difference to poverty alleviation and landscape environmental management? For specific tools used in conservation and development and in landscape management we will review and assess what has been used and will undertake action research using modified approaches.

Through common approaches and research questions across sites in many countries generalisable principles will be derived about how conservation goals can be effectively fostered, and achieved with maximum benefits to the rural poor. These insights will be applicable in a plethora of management contexts across the globe, both within the realm of forest conservation and in other contexts for collective resource management.

#### Impact pathways

At the global level, CIFOR research will influence the way the major stakeholders and opinion leaders conceptualise, implement, and promote more effective and integrated

approaches to conservation and development. CIFOR will target a select few of the major international large conservation NGOs that are influential in the field and are interested in experimenting with new ideas about conservation implementation, as well as an academic audience (so that the next generation of conservation and development courses embed CIFOR research). CIFOR will also target donor organizations (which are well-placed to influence the large conservation NGOs) including the World Bank and the major bilateral donors (via such forums as the Poverty and Environment Partnership – PEP, the Poverty Conservation Learning Group – PCLG, and through targeted publications). Outreach to these global players will involve articles in major academic journals, presentations at selected meetings and conferences, side events on CIFOR research at major conservation congresses, and direct engagement, including articles in in-house publications of these stakeholders.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 12. Partners' roles in Project 4, Output 3.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | In kind (Y/N) | Financial (Y/N) |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | | |
| CIFOR | 10 | 15 | 15 | 20 | 25 | 5 | 5 | 5 | Y | Y |
| Charles Darwin University, Australia | 30 | 30 | 10 | 5 | 5 | 5 | 10 | 5 | Y | Y |
| Fundación Natura, Bolivia | 10 | 15 | 5 | 15 | 10 | 15 | 15 | 15 | Y | N |
| Embrapa Amazônia Oriental, Brazil | 20 | 10 | 10 | 10 | 10 | 30 | 5 | 5 | Y | Y |
| Wildlife Conservation Society, Cambodia | 20 | 20 | 10 | 20 | 20 | 10 | 0 | 0 | Y | N |
| World Wide Fund for Nature, Cambodia | 5 | 10 | 10 | 20 | 15 | 10 | 15 | 15 | Y | N |
| Conservation International & National Forestry Administration, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| WWF, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| FFI, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| Cambodian Rural Development Team, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| Virachey National Park, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| Ministry of Environment, Cambodia | 10 | 15 | 10 | 20 | 15 | 10 | 10 | 10 | Y | N |
| Ministry of Environment (Biodiversity and Protected Areas Management Project), Cambodia | 15 | 15 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| PSWS, Cambodia | 15 | 15 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| WWF-Central Africa, Cameroon | 10 | 0 | 0 | 15 | 30 | 25 | 10 | 10 | Y | Y |
| Fundación Ecoversa, Colombia | 5 | 5 | 10 | 50 | 10 | 5 | 10 | 5 | Y | N |
| Royal Roads University, Canada | 20 | 20 | 10 | 20 | 20 | 10 | 0 | 0 | Y | N |
| PILI (Pusat Informasi Lingkungan Indonesia) | 20 | 20 | 10 | 20 | 20 | 10 | 0 | 0 | Y | N |

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | In kind (Y/N) | Financial (Y/N) |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | | |
| RMI (Rimbawan Muda Indonesia) | 10 | 10 | 10 | 10 | 20 | 10 | 10 | 20 | Y | N |
| Conservation International, USA | 20 | 5 | 10 | 10 | 15 | 15 | 15 | 10 | Y | N |
| University of Georgia, USA | 20 | 20 | 10 | 20 | 20 | 10 | 0 | 0 | Y | N |
| North Carolina State University, USA | 10 | 10 | 10 | 10 | 20 | 10 | 10 | 20 | Y | N |
| EcoCiencia, Ecuador | 5 | 10 | 10 | 45 | 10 | 5 | 10 | 5 | Y | N |
| Wondo Genet College of Forestry, Ethiopia | 10 | 10 | 15 | 25 | 10 | 5 | 10 | 15 | Y | N |
| IUCN, Switzerland | 10 | 25 | 20 | 10 | 15 | 5 | 10 | 5 | Y | Y |
| IUCN Cameroon | 20 | 10 | 20 | 20 | 5 | 5 | 10 | 10 | Y | Y |
| University of Port Elizabeth, South Africa | 10 | 10 | 10 | 30 | 30 | 0 | 0 | 10 | Y | Y |
| Universidad Autonoma Madrid, Spain | 10 | 10 | 20 | 15 | 20 | 0 | 5 | 20 | Y | Y |
| Hue University of Agriculture and Forestry, Vietnam | 20 | 20 | 10 | 20 | 20 | 10 | 0 | 0 | Y | N |
| ICRAF, Vietnam | 20 | 10 | 20 | 10 | 20 | 10 | 5 | 5 | Y | N |
| WWF Quang Nam, Vietnam | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| Cat Tien National Park Management Board, Vietnam | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| Bach Ma National Park Administration, Vietnam | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| Tam Dao National Park and Buffer Zone Management Project, Vietnam | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |
| Flora and Fauna International, Vietnam | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | Y | N |

## Project 5: Managing impacts of globalized trade and investment on forests and forest communities

### Project Overview and Rationale

Across the globe, there is rising demand for forest products and for products that are often produced at the expense of natural forest cover. Developing countries export more than US$ 23 billion worth of timber and processed wood products annually, as well as a range of non-timber forest products. Yet, in many countries, the value of internal trade in forest products can far exceed the value of exports.[9] Often, only a minor share of the value generated by forest-related trade and investment benefits smallholder producers and those living in or immediately adjacent to forests. Market distortions, perverse policy incentives, corruption and regulatory enforcement weaknesses often lead to lost opportunities for local livelihoods. Growing market demand for products from forests and related sectors (i.e., agriculture, mining, and biofuels), if not regulated effectively, can also drive deforestation and forest degradation, resulting in high levels of biodiversity loss and carbon emissions.[10]

Much is changing in the market environment for production forestry, and a number of trends are likely to have important effects on the world's forests, as well as the people who depend upon them. These include: a rapid growth in demand for forest products as a result of accelerated economic growth in India and China; a general shift in industrial timber production from natural forests in Asia (mainly from Indonesia and Malaysia) to those in Russia and Central Africa; and large-scale investments in industrial forest plantations, particularly in tropical regions[11], contributing to a trend expected to lead to 50% of the world's industrial wood being sourced from planted forests by 2040.[12] While increased plantation development may ultimately help to alleviate some pressure on forests, high prices for food and biofuel commodities will increase direct and indirect pressures to convert forests to agricultural uses. There has also been an expansion of international trade in forest products and in other products that directly affect forests, such as soy beans, palm oil, and beef, partially as a result of trade liberalisation[13]. Similarly, international financial integration has facilitated increased investment, in agro-industrial crops, mining, and other land-use options that affect tropical forests. Political measures to limit greenhouse gas emissions and reduce dependency on fossil fuels have also contributed to rapid growth in biofuel-related investments. While the global economic downturn and the recent drop in oil prices have for the time being slowed demand for biofuels and other commodities with a direct impact on forests (e.g. timber), there are signals suggesting that markets and investments will gradually recover in the future. Indeed, global demand for agricultural land has only intensified, and China is exploring ways to use the economic downturn to reduce its dependency on the dollar by investing its foreign reserves in natural resources[14].

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[9] Frost, P. no date. Trade and forestry: Policies, practices and outcomes. Unpublished manuscript.
[10] For example, see Butler, R. E. 2006. Why is oil palm replacing tropical rainforests? Why are biofuels fuelling deforestation? April 25, 2006. http://news.mongabay.com/2006/0425-oil_palm.html
[11] White, A. Sun, X. Canby, K., Xu, J. Barr, C. Katsigris, E. Bull, G. Cossalter, C. and Nilsson, S. 2006. China and the global market for forest products: transforming trade to benefit forests and livelihoods. Forest Trends, CIFOR, Rights & Resources, Center for Chinese Agricultural Policy. Washington, DC.
[12] FAO. 2006. Global forest resources assessment 2005. FAO Forestry Paper 147, FAO, Rome.
[13] Capistrano, D., Kanninen, M., Guariguata, M. R., Barr, C., Sunderland, T., Raitzer, D. 2007 Revitalizing the United Nations Forum on Forests: Critical issues and ways forward. Bogor, Indonesia: Center for International Forestry Research (CIFOR),
[14] Jiang, W. (2009) China tries to wriggle out of the US dollar trap. Jakarta Post, May 4, 2009.

Recently, a number of initiatives to mitigate the adverse social and environmental impacts of globalized trade and investment have emerged that seek to: influence the behaviour of governments (e.g., the FLEGT and associated regional processes); international financial institutions (e.g., the Equator Principles); and multinational corporations (e.g., U.S. Lacey Act, the UNEP's Global Reporting Initiative; the Carbon Reporting Project). Yet, there is much room for further progress in minimizing the adverse social and environmental impacts – and enhancing equitable benefits capture – from globalized trade and investment.

Governments and other stakeholders will benefit from improved understanding of the implications of the global trends for forests and forest-dependent peoples, enabling them to help manage the unanticipated impacts of globalized trade and investment on forest resources and the forest dependant poor. In addition, research results can help to illustrate the real costs and benefits of investments among various stakeholders, particularly for the rural poor and other marginalized groups. The potential effects of alternative institutional and policy innovations to manage these implications at the landscape and national scale in affected countries will be illustrated to policymakers through empirically-based scenario analysis and other knowledge products.

**Goal**

The Project's research will support enhanced consideration among key decision-makers of the current and anticipated impacts of globalized investment and trade flows on forests and forest-dependent communities. It will lead to more effective governance instruments, at multiple scales, for curtailing negative impacts and managing tradeoffs in an equitable and sustainable manner.

**Objectives**

1. To identify future trends and development pathways for globalized forest-related trade and investment, and to promote broad understanding of their likely implications for sustainability, equity, and economic development

2. To identify and promote governance options to optimize the economic, social and environmental impacts of major trends in forest-related trade and investment within specific forest landscapes and communities

**Overall Alignment with CGIAR System Priorities**

This work corresponds to multiple CGIAR System Priority areas. Specifically, these include the following, if each Output is only aligned with one SP:

- SP 5b: Making international and domestic markets work for the poor – Specific goal 1: Enhance livelihoods and competitiveness for smallholder producers and food safety for consumers influenced by changes in national and international markets;

- SP 4A: Integrated land, water, and forest management at the landscape level – Specific goal 5: Creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.

Following the Science Council guidelines, we have aligned each Output with one System Priority area. However because there are overlaps between System Priority areas and given that research has always multiple and nested goals, the Project is also aligned with the following priority areas:

- SP 3d: Sustainable income generation from trees and forests.
- SP 4d: Sustainable agro-ecological intensification in low- and high-potential environments - Specific goal 8: Identify social, economic, policy and institutional factors that determine decision-making about managing natural resources in intensive production systems and target interventions accordingly.
- SP 5c: Rural institutions and their governance.

### *Project 5, Output 1: Analysis of future trends and development pathways for globalized forest-related trade and investment*

#### Output Description

Research under this Output will focus on trade and investment flows associated with commodities that are likely to have significant impacts on forests and forest-dependent communities. CIFOR will analyze global and regional trends for select forest-based products (i.e. timber, pulp and paper) and for products from other sectors that affect forests (i.e. agricultural crops, mining, biofuels). The research will involve examining the dynamics of trade flows between supplier and consumer countries; analysis of investment projects and how these are financed; mapping of the institutional actors involved; assessment of the policy context and market structures, and analysis of the factors that may lead these to change over time. For select products or markets, CIFOR will analyze the current and anticipated implications of investment practices, trade arrangements, and government policies and development plans for forests and forest-dependent peoples. In addition, CIFOR will use participatory scenario analyses to help stakeholders to assess significant risk factors, uncertainties, and drivers of change and to identify potential policy and market levers that could guide investment and trade flows towards more sustainable and equitable outcomes.

#### Changes from Previous MTP

In general, there has been some reorganization, so that analysis of investment and trade trends that can put pressure on forests is more consistently under Output 1, while analysis of potential national and local governance options to manage these pressures is more consistently under Output 2. In Output 1, pieces of a larger body of work have been staged so that they appear under separate Targets, enabling an evolution of work from certain regions or commodities to other regions and commodities. Work has been added on specific pressures, including land conversion for biofuel production and for pulp plantations, as well as on Chinese investment.

#### Alignment to CGIAR System Priorities

The research under this Output corresponds to the CGIAR System Priority area 5: Improving policies and supporting institutional innovation to support sustainable reduction of poverty and hunger. Specifically, it links to SP 5b: Making international and domestic markets work for the poor.

- General goal: *To increase adaptive capacity of smallholders and poorer operators to exploit opportunities provided by international and domestic markets and to offset the negative impacts of global changes*.

- Specific goal 1: *Enhance livelihoods and competitiveness for smallholder producers and food safety for consumers influenced by changes in national and international markets.*

**Research Approach to International Public Goods**

The research under this Output will largely focus on global and regional trade and investment flows. The research is expected to have global impact by generating knowledge of institutional design options for improving forest outcomes, social equity and rule enforcement, particularly in relation to pulp and paper investments, REDD payments, biofuels and mining development, and other forest-related trade and investment. To the extent that the research focuses on particular countries or sites, it will be structured in a comparative manner so that generalizable conclusions can be drawn. The findings from the proposed research will be used to inform investment decisions, corporate reporting practices, and institutional arrangements shaping markets in an international, and in many cases, global context. To the extent that the research informs policy and planning decisions being taken by national governments, it will do so in a way that integrates national decisions with regional and global trade and investment flows. In some cases, the impacts on forests and carbon highlighted by this work may also be of global significance.

**Impact Pathways**

At the global and regional levels, the main impact pathways will be through multilateral initiatives aimed at strengthening standards and practices among investment institutions; improving corporate reporting and disclosure practices; and enhancing governance associated with forest-related trade. Initiatives to strengthen risk analysis, due diligence practices, and socio-environmental impact assessment among financial institutions involved in forest-related investments include, for instance, the Equator Principles; the UNEP Finance Initiative; the Financial Action Task Force (FATF); and various initiatives related to socially responsible investment (i.e. ASrIA). Initiatives to improve corporate reporting and disclosure include, for instance, the UNEP Global Reporting Initiative; the Carbon Disclosure Project; and the Roundtable on Sustainable Palm Oil. Initiatives which may be influenced to enhance governance associated with forest-related trade may include, for instance, FLEGT and related regional processes, the International Tropical Timber Organization (ITTO), multilateral trade agreements involving regional bodies for economic cooperation (i.e. COMESA, ASEAN, APEC, G-8) or buyer countries with potential willingness to address sustainability challenges associated with their investments (i.e. China).

At the national level, the main impact pathway will involve influencing government policies and development plans. In forest-producer countries, this may include policies and plans for the development of forest-based industries (i.e. timber, pulp and paper) and/or development of other sectors that affect forests (i.e. agricultural crops, biofuels, mining). CIFOR will seek to influence national policies and planning processes by providing options and recommendations, supported by well-documented research and analysis. CIFOR will also seek to engage key policy agencies in participatory scenario-building processes to jointly identify various plausible future outcomes and to assess the implications of specific policy and planning decisions. CIFOR will collaborate with multilateral institutions, such as the World Bank and regional development banks, to influence key policy decisions taken by national governments. Research will also explore complementary governance innovations for linking policy intentions with field realities.

CIFOR will also seek to inform the advocacy initiatives of global and regional civil society organizations as an intermediate impact pathway. Such an approach may be particularly

useful in influencing specific investment decisions, corporate practices of leading companies or financial institutions, and the practices of leading buyers or market institutions associated with particular industries, sectors, or markets.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 13. Partners' roles in Project 5, Output 1.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (y/n) | Financial (y/n) |
| CIFOR | 20 | 15 | 15 | 10 | 25 | 0 | 10 | 5 | Y | Y |
| COMESA, Zambia | 33 | 0 | 0 | 0 | 33 | 0 | 34 | 0 | Y | N |
| Forest Science Institute of Vietnam, Vietnam | 10 | 20 | 10 | 30 | 20 | 0 | 10 | 0 | Y | N |
| Stockholm Environment Institute-US | 10 | 5 | 35 | 15 | 15 | 0 | 5 | 15 | Y | N |
| ICRAF, China | 0 | 20 | 0 | 50 | 20 | 0 | 10 | 0 | Y | N |
| University of Leipzig, Germany | 0 | 20 | 10 | 40 | 20 | 0 | 10 | 0 | Y | N |
| Universidad Nacional Autonoma de México | 20 | 20 | 20 | 10 | 20 | 0 | 10 | 0 | Y | N |

### *Project 5, Output 2: Analysis of options for governing the economic, social and environmental trade-offs of major trends in forestry-related trade and investment within specific forest landscapes and communities*

**Output Description**

Research under Output 2 will focus on how global trends in forest-related trade and investment influence local landscapes and livelihoods, and how these impacts can be governed to enhance sustainability and equity. Based on CIFOR's analysis of key forest-based and extra-sectoral commodities shaping forests (Output 1), specific landscapes will be selected for more in-depth analysis of how identified trends are manifest at local and national levels. Field-based research to assess the local social and environmental impacts associated with different commodities under different business models utilized to produce or extract the commodity (e.g. smallholder production, large-scale plantations, outgrower schemes) will be carried out. Where feasible and relevant, impacts of forest-related trade and investment on national economies will also be assessed. In these same countries, analysis of legal and institutional frameworks governing forest-related trade and investment will be carried out. Global comparative research across regions and commodities will help to distil positive and negative economic, social and environmental impacts, and how governance arrangements and power relations at diverse levels (from global to local) affect these.

Data collection and analysis will be socially-disaggregated, to enable CIFOR to differentiate effects by gender and other social parameters shaping patterns of vulnerability. One objective will be to identify external costs posed by specific land use changes resulting from international investment or market demand, and what regulatory changes are needed to ensure that these costs are understood and minimized. A second objective will be to identify means to enhance positive impacts from these investments on forests and local livelihoods. Through scenario analysis at multiple scales, the research will highlight potential policy and market interventions that can guide change processes toward more equitable and sustainable outcomes. The analysis will point to key opportunities for leveraging change through comparative analysis of impacts observed in different governance contexts and by predicting the effects of alternative policy reform options. Where feasible, CIFOR will go a step further and test recommended governance innovations in practice in a multi-stakeholder, action research mode, and monitor the effects. This analysis will be geared towards learning general lessons for the global community by studying the comparative effectiveness of alternative policy measures.

**Changes from Previous MTP**

In general, there has been some reorganization, so that analysis of investment and trade trends that can put pressure on forests is more consistently under Output 1, while analysis of potential national and local governance options to manage these pressures is more consistently under Output 2. In Output 2, there is a clearer focus on comparative analysis of governance mechanisms and policy options. An output Target has been added on governing the effects of Chinese investments.

**Alignment to CGIAR System Priorities**

The research under this Output corresponds to the CGIAR System Priority 4: Poverty alleviation and sustainable management of water, land and forest resources. Specifically, it links to SP 4A: Integrated land, water, and forest management at the landscape level.

- General goal: *Improved land-use practices contribute to increased and sustained productivity, optimal conservation, reduced conflicts, and equitable use of land, water, and forest resources in multi-use landscapes.*
- Specific goal 5: *Creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.*

**Research Approach to International Public Goods**

Two primary approaches are envisioned for the generation of international public goods (IPGs). The first is global comparative *empirical research* across forest-related commodities (timber, pulp and paper, agricultural cash crops, biofuels, minerals) and landscapes (select eco-regions in Africa, Asia and Latin America) to assess the positive and negative impacts of different types of investments and how these are conditioned by different governance contexts.

The second approach to generating IPGs will be global comparative *action research* at national level in select countries, and in selected forested landscapes most shaped by global trends in trade and investment, to understand key elements to effective governance innovations at each scale. Analysis will be derived from systematic observation of the change process itself, as well as of the outcomes and impacts derived from these innovations.

**Impact Pathways**

Impact will be derived from "engaged" research in select contexts, as well as publication and outreach. While the first will enable site-specific impacts from an improved understanding of the current and future situation and stakeholder engagement in prioritizing governance innovations, the latter will enable such site-specific findings to be translated into lessons of relevance to the global community. It is envisaged that the ultimate impact of the research will be reduced negative environmental and social externalities from land use changes associated with predicted patterns of trade and investment, as well as "win-win" or solutions that enhance social and environmental outcomes of forest-related trade and investment.

"Engaged" research is expected to bring change at local and national levels through stakeholder involvement in action research and scenario analysis. More direct impacts will occur through stakeholder use and continuing adaptation of research-derived knowledge, analytical techniques, negotiation tools and governance innovations, while more indirect impacts are anticipated to occur as the result of the empowerment of women and other marginalized groups vis-à-vis government and corporate actors.

Publication and outreach will be used to influence change in multiple ways. Findings will be packaged for diverse audiences able to influence national and local governance related to forest-based trade and investment. The identification of positive and negative impacts from identified patterns in forest-related trade and investment and how governance arrangements shape these will be used to enable policy makers from ministries of finance, trade, planning and forestry to better assess options and negotiate more favourable trade and investment agreements. They will also be used to illustrate the critical importance of monitoring for aligning practice with policy. Findings will also be disseminated to civil society, to enable their active engagement in leveraging for more favourable trade and investment agreements and improved government and corporate performance. Lessons from action research will also be distilled for policy-makers and practitioners facing similar challenges elsewhere, particularly those associated with extra-sectoral influences. Special emphasis will be given to

learning lessons how to reduce the negative impacts on women and other marginalized groups.

Findings from Output 2 will also be fed into impact pathways for Output 1. This will enable data on types of impacts, for example, to be considered when revising global standards for investment and corporate reporting and disclosure. Findings related to how governance arrangements shape outcomes of trade and investment and from action research to explore improved governance innovations, on the other hand, will be used to shape policies and plans for the development of forest-based industries and/or development of other sectors that affect forests.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Outputs of the Project in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to each Output of this Project.

**Table 2. Partners' roles in Project 5, Output 2**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (y/n) | Financial (y/n) |
| CIFOR | 15 | 15 | 15 | 10 | 15 | 10 | 15 | 5 | Y | y |
| Bogor Agricultural University, Bogor, Indonesia | 15 | 15 | 25 | 15 | 25 | 0 | 5 | 0 | Y | N |
| Center for Tropical and Subtropical Agriculture and Forestry, Gottingen, Germany | 15 | 15 | 20 | 20 | 20 | 10 | 0 | 0 | Y | N |
| Common Market for Eastern and Southern Africa, Zambia | 0 | 0 | 0 | 0 | 20 | 0 | 60 | 20 | Y | y |
| Council for Scientific and Industrial Research, South Africa | 10 | 20 | 10 | 25 | 25 | 0 | 10 | 0 | Y | N |
| Directorate of Conservation Areas, Indonesia | 20 | 0 | 0 | 10 | 20 | 0 | 50 | 0 | Y | N |
| Forest Science Institute of Vietnam, Vietnam | 20 | 20 | 30 | 0 | 30 | 0 | 0 | 0 | Y | N |
| Forest Watch Indonesia | 20 | 20 | 20 | 10 | 0 | 10 | 10 | 10 | Y | N |
| Kutai National Park Agency | 50 | 0 | 0 | 10 | 0 | 40 | 0 | 0 | Y | N |
| Tropen Bos Indonesia | 20 | 20 | 20 | 10 | 0 | 10 | 10 | 10 | Y | N |
| Sawit Watch Indonesia | 20 | 20 | 20 | 10 | 0 | 10 | 10 | 10 | Y | N |
| PILI (Pusat Lingkungan Hidup), Bogor | 0 | 0 | 0 | 30 | 0 | 0 | 60 | 10 | Y | N |
| Shanduko (Centre for Agrarian and Environmental Research) | 0 | 20 | 10 | 30 | 30 | 0 | 10 | 0 | N | N |
| Stockholm Environment Institute-USA | 10 | 10 | 20 | 10 | 20 | 0 | 20 | 10 | Y | N |
| Universidad Nacional Autonoma de México | 0 | 10 | 10 | 30 | 30 | 10 | 10 | 0 | Y | N |
| Universitas Papua, Indonesia | 0 | 10 | 0 | 30 | 30 | 10 | 10 | 10 | Y | N |
| World Agroforestry Centre, Vietnam | 30 | 20 | 20 | 0 | 30 | 0 | 0 | 0 | Y | N |

## Project 6: Sustainable management of tropical production forests

### Project Overview and Rationale

Tropical forests represent about 51% of the world's forests and are the most biodiversity rich suite of terrestrial ecosystems on Earth. Over 400 million people live in or at the edge of these tropical forests including the world's 60 million native or indigenous peoples who rely entirely on the forests for their way of life. Given that production forests (concessions, municipal forests, private holdings) represent up to 80% of the permanent forest estate in many tropical regions, a large number of forest dependent people are living in or near such production forests and are likely to be affected by whether these forests are or are not well managed[15].

In spite of the efforts of the global community in its collective search for solutions to address the suboptimal use of forest lands and resources and to promote sustainable forest management (SFM), tropical forests are undergoing unprecedented pressure as population and demand for new agricultural land, forest products and ecosystem services increase. These efforts have nevertheless resulted in an increase of natural forests set aside for timber production under more ecologically sensitive management. The number of tropical forests in which "sustainability" is a priority consideration, although low, is nevertheless expected to increase in the near future[16].

At the same time, in many tropical forested countries, the basic tenets of forest management have not really changed over the last decades. This is despite the facts that 1) growing evidence of the potential contribution of forest peoples by way of their traditional management systems, has accumulated[17] and 2) new powerful tools, such as GIS and remote-sensing imagery are available. Reduced Impact Logging (RIL) guidelines are commonly advocated, but the basic tenets of forest management have not really changed and are still largely based on European models 'exported' to the tropics in the 1950s. Existing management plans are thus frequently based on unrealistic technical prescriptions that hinder implementation by many operators in the tropics. Meanwhile, most existing management models appear to be viable only for large concessions in unlogged forests, whereas there is an increasing number of small to medium scale enterprises working in secondary or logged-over forests. Research is therefore needed to revisit existing management approaches for tropical production forests to facilitate the design of more appropriate, equitable, and more environmentally friendly management rules[18].

Ambiguity in policies, ineffective or inconsistent law enforcement, corruption and overall weakness in the rule of law are still preventing many developing countries from realizing the full socio-economic, developmental and environmental benefits from the use of their production forests. Without major reforms in policies and practices for a more transparent forest productive sector, efforts to have better managed forests and involve local communities in their management are likely to have limited effectiveness. As a result of civil

[15] Chomitz K. et al. 2006. At Loggerheads? Agricultural Expansion and Poverty Reduction in Tropical Forests. World Bank Policy Research Report http://go.worldbank.org/TKGHE4IA30
[16] Nasi, R., J.-C. Nguinguiri, D. Ezzine de Blas (Eds.) 2006. Exploitation et gestion durable des forêts d'Afrique Centrale : la quête de la durabilité. ITTO, CIFOR, CIRAD, L'Harmattan, Paris, 429p.
[17] Parrotta, J.A., Liu, J., & Sim, H-C., 2008. Sustainable Forest Management and Poverty Alleviation: Roles of Traditional Forest-related Knowledge. IUFRO World Series Vol. 21. Vienna, Austria: International Union of Forest Research Organizations, 224 pp.
[18] Nasi, R. (Guest Editor) 2006. Do we need new management paradigms to ensure sustainability in tropical forests? Ecology and Society http://www.ecologyandsociety.org/viewissue.php?sf=27

society demands, new governance regimes are emerging for tropical forests (public-private partnerships, logging companies – NGO partnerships, non-state governance market systems like certification processes) that have potential to facilitate change.

Although many organisations are involved in promoting sustainable forest management worldwide, they cover research aspects outside of CIFOR's mandate or focus on particular countries. CIFOR has therefore a clear niche in this research Project as a centre that emphasizes "policy relevant research", multi-scale research, and an interdisciplinary approach. These research issues lend themselves to a comparative treatment, to investigate how and why different kinds of investments, actions to influence the behaviour of policy makers, practitioners, and community members have worked, and under what conditions, and to draw lessons and recommendations to help streamline and improve the effectiveness of efforts to influence policies regulating production forests.

**Goal**

It is intended that CIFOR's research will contribute to major changes in how production forests are managed, improving multifunctionality (integrating timber and non timber products), ensuring better representation of local communities (in all their diversity) in management decisions and reducing land-use and resource right conflicts.

**Objectives**

1. To identify and promote public policies and market instruments for the management of production forests that reduce social and environmental footprints of harvesting.
2. To develop and promote improved methods and tools for better monitoring and management of tropical production forests.
3. To develop and disseminate new tools and methods to incorporate local values, enhance equitable benefit sharing and resolve conflicts in the management of tropical production forests.

Revisiting the scientific bases for achieving sustainable forest management in tropical production forests should help to remove major constraints and barriers to the adoption and implementation of appropriate forest management practices that will allow equitable and sustainable production of goods and services. Thereby, the contribution of sustainably managed tropical forest landscapes to achieving the Millennium Development Goals especially MDG1 ("eradicate extreme poverty and hunger") and MDG7 ("ensure environmental sustainability") will be improved. This should be a major contribution to the achievement of the overall CGIAR goals, specifically the fostering of the sustainable management of natural resources.

**Overall Alignment with CGIAR System Priorities**

This work falls completely within CGIAR System Priority area 4a – Integrated Land, Water and Forest Management at a Landscape Scale, as indicated subsequently by Output, following the Science Council guidelines to align each Output with one System Priority area.

However because there are overlaps between System Priority areas and given that CIFOR's research has always multiple and nested goals, the Project is also aligned with the following priority areas:

(SP1b) - Promoting conservation and characterization of under-utilized plant genetic resources to increase the income of the poor

(SP 3d) - Sustainable income generation from trees and forests

(SP 5a) - Science and technology policies and institutions

(SP 5c) – Rural institutions and their governance

(SP 5d) - Improving research and development options to reduce rural poverty and vulnerability

(SP 4d) – Sustainable agro-ecological intensification in low- and high-potential environments

### *Project 6, Output 1: Identification of efficient of public policies and market-based instruments to improve the social and environmental footprints of production forest harvesting*

#### Output Description

Public policies or market-based instruments implemented in tropical countries have an important impact on the evolution and dynamics of forest resources, on the sharing of the benefits resulting from their uses and on the collective capacity of societies to manage these resources and benefits. Designing appropriate policies or instruments that are applicable and effective is therefore a prerequisite for achieving SFM. This is unfortunately more the exception than the norm in the forestry sector in developing countries, where forest regulations are frequently violated. The Output's purpose is therefore to study the cycle of public policy development in order to provide guidance to policy makers on the design of better forest and forestry policy regimes that will be implemented and accepted. In particular, the research will identify effective measures for addressing illegal logging through analysis of the determinants of illegal logging practices, as well as potential measures to verify legality. The recent global financial crisis is creating new operating conditions for both governments, NGOs and companies that will highlighted inherent legislative flaws or weaknesses. We will use and analyse this real scale global experiment as part of our work to design better instruments for the management of production forests. This will also build on Outputs 2 and 3 for the design of better forest policies.

#### Changes from Previous MTP

There are no major changes from the previous MTP. Some Output Targets have been reordered to take into account progress in implementation and funding. New research is added for the 2012 Target, which appraises the effects of the financial crisis on forest management. We are also planning to extend our anti-corruption and anti-money laundering approaches to Central Africa and Latin America for tackling illegal lagging globally.

#### Alignment to CGIAR System Priorities

This work falls completely within the CGIAR System Priority 4a - Integrated land, water and forest management at landscape level; Specific goal 5: Creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.

#### Research Approach to International Public Goods

CIFOR, as a research centre that emphasizes "policy relevant research" and transdisciplinarity, has a clear comparative advantage in producing international public goods through this Project. Our global mandate and a well-established practice of comparative analyses through partnership research lend themselves to comparative treatments, to investigate how and why different kinds of actions to influence the behaviour

of practitioners have worked, and to draw lessons and recommendations to help streamline and improve the effectiveness of efforts to influence policy outcomes at global and national levels. Other important organisations involved within the commercial forestry realm are generally country-based research institutions (e.g. CIRAD, EFI, Tropenbos International…), environmental "science-based" NGOs (e.g. WWF, WCS, WRI, IIED…), advocacy NGOs (Greenpeace, Friends of the Earth, WRM…), certification groups (e.g. FSC, PEFC, ISO) or consulting firms. They are often close partners of CIFOR and cover various aspects of the research Project that are out of our scope (e.g. permanent sample plots, management plan design, advocacy campaigns…) and could help us in addressing the above questions.

Target regions for this Output are the Amazon Basin (Bolivia, Brazil and Peru) and Mexico for the neotropics, Central Africa (Cameroon, Democratic Republic of Congo and Gabon) and South-East Asia (ASEAN countries) for the paleotropics.

The Project will identify, assess and synthesize approaches, principles and lessons for improved public policies and market-based instruments for better governance of the use of production forests. Ultimately, by considering various aspects of the public policies development cycle in different regions, the Project intends to derive general principles for the development of effective public policies for tropical production forests and with relevance and applicability to countries and regions faced with similar issues and conditions.

**Impact Pathways**

Demand for the information that this research will supply appears in the programmes and strategic documents[19] of multilateral agreements (UNFF, CBD and ITTO), development banks (WB, AFB, ADB), multi- and bi-lateral donors (EC, US, UK, France, Germany…). There is also a clear demand from the most advanced part of the commercial timber sector linked to the increasing importance of certification and of the generally negative publicity linked to logging in tropical forests. A better organised, more transparent commercial timber sector implementing equitable and environmentally sound management practices will be more beneficial to concerned countries and local people. Clients/users of this research will involve local villagers in cases where they manage a significant forest estate for timber, such as in Mexico. Our targeted clients are the policy-makers and practitioners who govern and operate commercial forestry operation, so major direct beneficiaries and end users of the results and findings of this Output are government, enterprises and communities managing forests. We will collaborate with international organisations and processes (e.g. UNFF, CPF, ITTO, FAO…) national and local governments, industry, donors and NGOs in the development of efficient public policies and market instruments for better managed tropical production forests. International organizations and international NGOs (e.g. FSC) will also help in disseminating results and promote up-take. Key policy makers and donors will be targeted to illustrate how it can be economically viable to manage production forests to supply forest products and how forest-based industries can sustainably meet the growing demand of timber and other forest products.. Local people will be the ultimate beneficiaries as one way to improve their wellbeing is to trying change the adverse forces that constrain or impact them.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Output targets in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to this Output.

[19] Worldbank's Forest Strategy and Operational Policy; UNFF Proposals for Action; ITTO Status of Tropical Forest Management 2005; EC Forest Law Enforcement and Governance – FLEG- Action Plan…

**Table 14. Partners' roles in Project 6, Output 1.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 20 | 25 | 20 | 10 | 10 | 0 | 5 | 10 | Y | Y |
| Forest Stewardship Council International Center (FSC IC) | 20 | 20 | 10 | 0 | 15 | 15 | 20 | 0 | Y | Y |
| CERTIFLOR, Brazil | 10 | 10 | 0 | 0 | 15 | 20 | 20 | 25 | Y | Y |
| Forest Stewardship Council Cameroon (FSC Cam) | 10 | 10 | 0 | 0 | 15 | 20 | 20 | 25 | Y | Y |
| Forest Stewardship Council Brazil (FSC Bra) | 10 | 10 | 0 | 0 | 15 | 20 | 20 | 25 | Y | Y |
| PROFOREST, UK | 10 | 0 | 10 | 10 | 0 | 35 | 0 | 35 | Y | N |
| Overseas Development Institute (ODI), UK | 20 | 30 | 10 | 10 | 10 | 0 | 20 | 0 | Y | Y |
| Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France | 10 | 0 | 10 | 30 | 15 | 5 | 10 | 20 | Y | N |
| Université Catholique de Louvain (UCL), Belgium | 20 | 15 | 20 | 20 | 10 | 0 | 10 | 5 | Y | N |
| Forêt Ressources Management (FRM), France | 10 | 5 | 10 | 30 | 15 | 20 | 5 | 5 | Y | N |
| Institut de Recherches en Ecologie Tropicale (IRET/CENAREST), Gabon | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Université de Kisangani, Faculté des Sciences, DR of Congo | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Joint Research Center of the European Commission (JRC), Italy | 15 | 10 | 25 | 20 | 20 | 0 | 0 | 10 | Y | Y |
| Indonesian Working Group on Forest Finance (IWGFF) | 10 | 10 | 10 | 10 | 10 | 10 | 20 | 20 | Y | Y |
| Institute Hukum Sumber Daya Alam (IHSA), Indonesia | 0 | 0 | 5 | 45 | 50 | 0 | 0 | 0 | N | N |
| Wahana Lingkungan Hidup (Walhi) Kaltim, Indonesia | 0 | 10 | 0 | 10 | 20 | 20 | 20 | 20 | N | N |

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | In kind (Y/N) | Financial (Y/N) |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | | |
| Jaringan Kerja Penyelamat Hutan Riau (Jikalahari), Indonesia | 0 | 10 | 0 | 10 | 20 | 20 | 20 | 20 | N | N |
| Warsi, Indonesia | 0 | 10 | 0 | 10 | 20 | 20 | 20 | 20 | N | N |
| Australian Institute of Criminology (AIC) | 10 | 10 | 20 | 10 | 20 | 10 | 20 | 0 | y | y |
| Brainforest (Gabon) | 0 | 10 | 10 | 50 | 10 | 10 | 10 | 0 | N | N |
| Unité de Recherches sur la Productivité des PlantationsIndustrielles (UR2PI, Congo) | 0 | 10 | 0 | 60 | 10 | 10 | 0 | 10 | N | N |

### *Project 6, Output 2: Development of tools, methods and guidelines for better monitoring and management of tropical production forests*

#### Output Description

Many important factors ensuring that production forests will be retained over time are largely political and socio-economic (see Outputs 1 and 3). However, this does not imply that silvicultural or management research is no longer needed. The last decade highlighted the concerted effort towards developing and implementing research on reduced impact logging (RIL) with some encouraging anecdotal reports of adoption. Yet RIL approaches do not sufficiently address broader aspects of ecology and silviculture. Prior research by CIFOR and partners moved the agenda forward by concluding that RIL was necessary but not sufficient for attaining sustainable forest management. Thus to move "beyond RIL" requires a silvicultural regime that avoids local extinction of commercial timber species at the stand level, moves beyond "minimum felling diameter" rules, seeks to optimize/harmonize the extraction of timber compared with extraction of non-timber forest products (including bushmeat), and attempts to integrate biodiversity considerations and other environmental or cultural services in management prescriptions. Analysis and monitoring tools developed at national and regional levels will build upon these considerations to improve the governance and management of tropical production forests and contribute to the achievement of Output 1.

#### Changes from Previous MTP

There are no major changes from previous MTP. Some Output Targets have been reordered to take into account progress in implementation and funding. We have also tried to better capture and consider gender issues, and reflect this in the logframes. Some work on capacity needs for NTFP management in Latin America and on the integration of bushmeat/wildlife management in production forest management has also been added.

#### Alignment to CGIAR System Priorities

This work falls completely within the CGIAR System Priority area (SP 4a) - Integrated land, water and forest management at landscape level; Specific goal 1: To develop analytical methods and tools for the management of multiple use landscapes with a focus on sustainable productivity enhancement.

#### Research Approach to International Public Goods

The Project will identify tools, methods and guidelines for better managed tropical production forests to become best practices recognized and promoted at international and national level to encourage a wise use of tropical production forests. It will build on indigenous management and uses of timber and NTFPs, integrating positive elements of these systems into better practices 'beyond RIL'.

Target regions for this Output are the Amazon Basin (Bolivia, Brazil, Peru and Guyana), Central Africa (Cameroon, Democratic Republic of Congo and Gabon), South-East Asia (Indonesia) and Pacific (Papua New Guinea).

The comparison of experiences across the sites and regions and synthesis work will result in the provision of tools, methods and guidelines widely applicable to other forest management and planning processes occurring in tropical areas where the long-term sustainability of

forest product supply is a priority. A large part of the work will be carried out in collaboration with organizations directly involved in the promotion of sustainable forest management – international processes (UNFF, ITTO…), regional initiatives (ASEAN, CEMAC, COMIFAC…) national forestry organizations, forest enterprises and leading certifiers (such as FSC). The progress so far and the global coverage achieved through various case studies, places CIFOR in a unique position to promote the sustainable use of production forests.

**Impact Pathways**

There is a clear demand for this research from the community of "forestry managers", be they part of the commercial timber sector, governments, regional or international organisations[20]. Much of the work will involve action research that integrates target groups such as extension services, gender disaggregated farmer or NTFP collector groups, forest enterprises (including small scale, NTFP-focused enterprises) and NGOs into the research process to ensure the relevance and uptake of research findings. The Project will also engage national and local governments, industry, donors and advocacy groups in a dialogue about appropriate policies, strategies and guidelines. The Project intends that utilization of enhanced management methods in production forests will increase their overall value for local people and the income generated through enhanced access to premium timber markets. The project also hopes to integrate NTFP involvement by local communities into a broader interpretation of forest management (beyond timber alone). In so doing, the use of more sustainable practices will help to conserve important environmental services and safety nets for the poor, as well as build local confidence and capacity in management of both timber and nontimber products. We will collaborate with international organisations (e.g. CPF, ITTO, FAO…) national and local governments, industry and NGOs in the development and dissemination of improved silvicultural and monitoring practices consistent with sustainable management of production forests, so as to reach ultimate adopters (forestry companies) more effectively.. Key policy makers and donors will be targeted to illustrate how it can be economically viable to manage production forests in an integrated fashion to supply sustainably a whole range of forest products, so as to support the dissemination of Output 1. It is ultimately intended that more sustainable and productive production forest management practices will afford greater levels of market and non-market values over longer durations, thereby benefiting both the poor and the environment. A more holistic approach to forest management can also have indirect benefits, such as reducing conflicts between companies and local people through attention to NTFPs, which women are more likely to nurture and collect. This Output should help to improve gender equity.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Output targets in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to this Output.

[20] ITTO Status of Tropical Forest Management 2005; International Technical Tropical Timber Association Management Guidelines…

**Table 15. Partners' roles in Project 6, Output 2.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 20 | 25 | 20 | 10 | 10 | 0 | 5 | 10 | Y | Y |
| Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France | 20 | 0 | 20 | 20 | 20 | 0 | 0 | 20 | Y | Y |
| Université Catholique de Louvain (UCL), Belgium | 20 | 15 | 20 | 20 | 10 | 0 | 0 | 15 | Y | Y |
| Université Libre de Bruxelles (ULB), Belgium | 20 | 15 | 20 | 0 | 10 | 0 | 0 | 35 | | |
| Forêt Ressources Management (FRM), France | 10 | 5 | 10 | 30 | 15 | 20 | 5 | 5 | Y | Y |
| Joint Research Center of the European Commission (JRC), Italy | 20 | 15 | 20 | 20 | 10 | 0 | 10 | 5 | Y | Y |
| Institut de Recherches en Ecologie Tropicale (IRET/CENAREST), Gabon | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Forest Research Institute of Papua New Guinea (PNG FRI) | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Iwokrama International Center, Guyana | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Université de Kisangani, Faculté des Sciences, DR of Congo | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| University of British Columbia, Canada | 30 | 0 | 30 | 0 | 20 | 0 | 20 | 0 | N | N |
| Tropical Forest Foundation (Indonesia) | 15 | 10 | 10 | 15 | 25 | 5 | 20 | 0 | Y | N |
| FORDA (Indonesia) | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |

### *Project 6, Output 3: Tools and methods to resolve conflicts about land use and resource rights in the use of tropical production forests*

#### Output Description

It is widely appreciated that local people have forest management strategies that are potentially valuable to the development of new silvicultural systems. Moreover, many stakeholders are involved in the formal and customary management of forests designated for production, some directly (indigenous people, migrants, local NGOs, timber companies, agro-industrial developers, local officers…), others less directly (international NGOs, national governments, end consumers, companies that trade wood or carbon credits, etc.). Different groups often have conflicting or overlapping rights and responsibilities, as companies may be allocated use rights in areas inhabited by local forest dwellers. However, there may be unrealised scope for synergies in production forest management. Research under this Output will explore the values, knowledge and perceptions of local men and women relating to forests, in order to facilitate synergies and solve issues of conflicting land use rights through new models of shared responsibilities for and benefits from production forests. The results of this research will inform and contribute to achievement of Outputs 1 and 2.

#### Changes from Previous MTP

There are no major changes from previous MTP. Some Output Targets have been reordered to take into account progress in realisation and funding. We have also tried to better capture and consider gender issues, reflected in narrative, partner tables and logframes. The output description is now more detailed, adding greater focus to analysis of mechanisms for harmonizing traditional local management and commercial timber extraction.

#### Alignment to CGIAR System Priorities

This work falls completely within the CGIAR System Priority area (SP 4a) - Integrated land, water and forest management at landscape level - Specific goal 3: Establish effective rights and opportunities to ensure that the poor benefit equitably from forests and tree resources and Specific goal 5: Creating multiple benefits and improved governance of environmental resources through the harmonization of inter-sectoral policies and institutions.

#### Research Approach to International Public Goods

The Project will identify tools, methods and guidelines for the integration of local values and knowledge in the management of tropical production forests to reduce the conflicting land and resource use right issues generated by the commercial use of these forests. Special attention will be paid to differences in priorities for forest use and management between men and women, and different categories of people (e.g., ethnic, occupational, caste, tribal, and other social groupings).

Target regions for this Output are the Amazon Basin (Bolivia, Brazil, Peru and Guyana), Central Africa (Cameroon, Democratic Republic of Congo and Gabon), South-East Asia (Indonesia) and Pacific (Papua New Guinea)---areas known to be inhabited by a variety of forest peoples.

The comparison of experiences across the sites and regions and synthesis work will result in the provision of generic tools, methods and guidelines that can be used to understand and make good use of the knowledge and capabilities of local communities. The linking of local and formal or ‘cosmopolitan’ knowledge will also contribute to enhanced and strengthened local capacity to manage tropical production forests. A large part of the work will be carried

out in collaboration with organizations directly involved in the promotion of sustainable forest management – international processes (UNFF, ITTO…), regional initiatives (ASEAN, CEMAC, COMIFAC…) national forestry organizations, forest enterprises and leading certifiers (such as FSC). Many of these organizations have expressed ongoing concern about social sustainability, and the work here proposed will contribute to those efforts as well.

**Impact Pathways**

There is a clear demand for this research from parts of the private sector concerned with "social responsibility" (e.g. Social Guidelines of management plans for the International Forest Industry Association) and from important multi-lateral donors in their country-based funding (e.g. World Bank policies on indigenous people).Our targeted clients are the policy-makers and practitioners who govern and operate commercial forestry operations at national and local levels. Local people (including marginalized groups) will participate in the research and be ultimate beneficiaries through enhanced institutional management capacities, reduced levels of local conflict, and greater empowerment in decision-taking processes concerning production forests. Results generated in Output 3 will also be used in Output 2 (especially on issues of integrated forest management) and in Output 1 to reduce the social footprint of harvesting operations in production forests. As such they will be an integral part of the impact pathways of the two previous Outputs.

**Partner Roles**

As CIFOR is a 'centre without walls' all research is conducted through an extensive array of partnerships. Due to the number of partners, it is not possible to effectively convey the contribution of each to specific Output targets in a narrative format of only a few pages. Thus, a tabular approach follows to concisely outline the specific contributions of each research partner to this Output.

**Table 16. Partners' roles in Project 6, Output 3.**

| Research partner name and country | Role (% of effort) | | | | | | | | Resource contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Research process | | | | | | Dissemination | | | |
| | Problem/ priority determination | Research coordination and management | Contributor of concepts/ tools | Contributor of data | Participant in analysis | Local adapter/ tester | Disseminator/ advocate | Capacity builder | In kind (Y/N) | Financial (Y/N) |
| CIFOR | 20 | 25 | 20 | 10 | 10 | 0 | 5 | 10 | Y | Y |
| Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France | 20 | 0 | 20 | 20 | 20 | 0 | 0 | 20 | Y | Y |
| Université Catholique de Louvain (UCL), Belgium | 20 | 15 | 20 | 20 | 10 | 0 | 10 | 5 | Y | Y |
| Université Libre de Bruxelles (ULB), Belgium | 20 | 15 | 20 | 0 | 10 | 0 | 0 | 35 | Y | N |
| Forêt Ressources Management (FRM), France | 10 | 5 | 10 | 30 | 15 | 20 | 5 | 5 | Y | Y |
| Joint Research Center of the European Commission (JRC), Italy | 20 | 15 | 20 | 20 | 10 | 0 | 10 | 5 | Y | Y |
| Institut de Recherches en Ecologie Tropicale (IRET/CENAREST), Gabon | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Forest Research Institute of Papua New Guinea (PNG FRI) | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Iwokrama International Center, Guyana | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| Université de Kisangani, Faculté des Sciences, DR of Congo | 20 | 10 | 5 | 20 | 10 | 20 | 0 | 15 | Y | N |
| University of British Columbia, Canada | 30 | 0 | 30 | 0 | 20 | 0 | 20 | 0 | N | N |
| Women Organizing for Change in Agriculture and Natural Resources (WOCAN) | 10 | 10 | 30 | 0 | 10 | 10 | 20 | 10 | Y | N |
| Participatory Research and Gender Analysis program of the CGIAR | 10 | 0 | 40 | 0 | 20 | | 20 | 10 | Y | N |

## Project Logframes

Logframe for Project 1: Enhancing the role of forests in climate mitigation

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1: | Improved procedures and practices for estimating and managing carbon stocks of tropical forest landscapes | | Global processes (COP/MOP), IPCC scientific community, donors<br>National and local governments, NGOs, private sector, forest managers, research institutions, auditors in SE Asia, Andean region, and Congo Basin | Post 2012 climate regime is designed and national REDD schemes are constructed to use improved practices for managing, estimating and monitoring forest carbon pools so as to lead to real reductions of emissions from deforestation and degradation<br>Reduced transaction costs leading to increased adoption of REDD schemes | Enhanced reductions of carbon emissions, and increased co-benefits from forest conservation, increased revenue flows to forest dependent people |
| Output Targets 2009 | Identification of best practice methods for estimating carbon stocks effects of forest degradation | Document on national vs. sub-national baseline development and monitoring schemes<br>Review of existing methods for carbon accounting (EU Bioenergy)<br>Document on best practice methods for estimating carbon stocks and changes in carbon stocks from IPCC GHG document<br>Document on degradation<br>COP 15 – Forest day documents | IPCC, negotiators (COP), scientific community, donors, national and local governments, NGOs, private sector, forest managers research institutions, conservation and development agencies in SE Asia (Indonesia, Malaysia), Andean region, Congo Basin (DR Congo, Cameroon). | New REDD initiatives, including demonstration (pilot) activities, are using the best practice methods for estimating carbon stocks. | Improved targeting and lower transaction costs for REDD activities, which lead to enhanced REDD effectiveness. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2010 | Identification of best practice methods for estimating carbon stocks in forest landscapes (including peatlands) | Database and models for estimating below and above-ground C-stocks (LV).<br>Document on revised methods for carbon accounting for forest-based bioenergy schemes (EC bioenergy) (MK).<br>Paper on the setting of the emissions reference level (DM).<br>Paper on land-use change and soil respiration in upland systems in Sumatra (LV). | IPCC, negotiators (COP), scientific community, donors, national and local governments, NGO's, private sector, forest managers research institutions, conservation and development agencies in SE Asia, Andean region, Congo Basin | REDD schemes are better designed in terms of methods for estimating and managing carbon stocks in peatlands.<br>Agreed methods are included into the COP decision. | Greenhouse gas emissions from peatlands are more effectively managed as a result of enhanced REDD modalities. |
| Output Targets 2011 | Decision support tools for estimating and managing carbon stocks, including methods for estimating and managing carbon from degradation and in peatlands | Papers, CVD_ROM's web materials comprising the tool box related to methodological issues as a result of selected comparative studies across the demonstration activities (LV, MK, DM). | IPCC, negotiators (COP), scientific community, donors.<br>National and local governments, NGO's, private sector, forest managers research institutions, conservation and development agencies in SE Asia, Andean region, Congo Basin | REDD schemes are better implemented in terms of methods for estimating and managing carbon stocks.<br>Agreed methods are used by REDD schemes. | Enhanced real reductions in greenhouse gas emissions through more efficient and effective REDD modalities |
| Output Targets 2012 | Tools and guidelines for defining emission reference levels and for community participation in carbon monitoring | Manual and user-friendly tool for developing reference level scenarios (DM).<br>Training material and online tutorials (LV). | Project development groups including civil society organizations and non-lead organizations; international agencies; and national agencies leading REDD initiatives. | Meaningful participation and ownership of communities in the measurement and monitoring of carbon stocks. | Enhanced accounting of emission reductions via reference levels that use reliable current data and participatory community carbon accounting methods leads to reduced uncertainty about REDD performance and more effective REDD investments |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 2: | Identification of policies, governance conditions and payment mechanisms that lead to effective implementation of REDD schemes | | REDD practitioner community inside and outside government; people developing policies and programs to implement REDD and the public and private investors supporting them; advocacy groups dealing with national level implementation issues. | Findings are used to improve the design and selection of national REDD interventions | National REDD interventions are more effective in terms of reduced emissions from deforestation and reduced risks to vulnerable communities; policies and programs produce pro-poor and pro-biodiversity co-benefits |
| Output Targets 2009 | Analysis of early issues arising in incipient REDD schemes, including site selection and conflicts among agencies involved.<br>Analysis of how to achieve the necessary minimum conditions for REDD (readiness) based on analysis of previous other forestry governance challenges | "Issues Arising" publication for COP15<br>"Capacity for success" publication for COP15<br>Website on how to manage conflicting interests (e.g. LPF) | REDD practitioner community inside and outside government; people developing and implementing and investing in REDD demonstration activities | Findings are used to improve the design and selection of national REDD interventions | Planned national REDD schemes (and demonstration activities) mitigate risks related to the design of the schemes, so that more real reductions are achieved with co-benefits. |
| Output Targets 2010 | Analysis of how REDD is likely to be impacted by local context (e.g. tenurial arrangements) and how REDD is likely to influence local livelihoods and governance arrangements | A synthesis paper summarizing the literature on the need for forest tenure reform in Indonesia in light of the new challenges and opportunities of REDD (WS).<br>Literature review on leakage, including selected case studies on displacement of livelihoods and carbon-emitting activities due to policies aimed at controlling land use change (SA).<br>Document describing the potential of REDD in particular landscapes, and the likely impacts on livelihoods and | REDD practitioner community inside and outside government; people developing and implementing and investing in REDD demonstration activities | New REDD initiatives, including demonstration (pilot) activities, are designed using best practices of implementation. | Planned national REDD schemes (and demonstration activities) mitigate risks related to the design of the schemes, so that more real reductions are achieved with co-benefits. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | equity (MC).<br>Paper with analysis of REDD actors in selected landscapes (motivations, behaviours and constraints) including analysis of institutions that can be mobilised for REDD (EM).<br>Developed, consulted, revised framework for comparative analysis of REDD site level demonstration activities (SA). | | | |
| Output Targets 2011 | Global comparative analysis of policies and processes for effective REDD site-level demonstration activities | Paper on the processes that lead to carbon leakage and livelihood changes in REDD pilot study sites, based on two REDD pilot projects in Indonesia (SA).<br>A comparative study synthesizing results from pilot REDD site-level demonstration activities (WS).<br>Document on principles that have a bearing on the design of REDD site-level demonstration activities (tbd).<br>Document on the impacts of timber plantations on REDD (KO). | REDD practitioner community inside and outside government; people developing and implementing and investing in REDD demonstration activities | National REDD schemes are better implemented in terms of governance and poverty alleviation. | Planned national REDD schemes in the post 2012 climate regime are designed so that they reduce risks to vulnerable communities and include policies and programs that produce pro-poor and pro-biodiversity co-benefits |
| Output Targets 2012 | Comparative analysis of efficiency, effectiveness and equity of specific mechanisms for benefit sharing, tenurial clarification and leakage prevention in REDD site-level demonstration activities | Manual for second generation site-level activities (tbd)<br>Paper on outcomes from first generation demonstration activities (tbd). | REDD practitioner community including local government; local people, and private sector developing/implementing REDD demonstration activities | Second generation REDD site-level activities, are designed using best practices of implementation.(derived from the experiences and outcomes from first generation activities) | Planned REDD demonstration activities mitigate risks related to the design of the schemes, so that more real reductions are achieved with co-benefits. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 3: | Identification of political economy barriers that are likely to limit the pursuit of REDD regimes | | Proponents of REDD inside and outside government: donor agencies, government officials, advocacy groups; participants in COP14 & COP15 | Global REDD architecture and strategies reflect a more sophisticated understanding of trends, actors, and interests impinging on success so as to be better targeted and more politically legitimate | Improved effectiveness of international REDD strategies in reducing forest-based emissions and associated co-benefits |
| Output Targets 2009 | Critical review of potential barriers to adoption of REDD policies based on global analysis of the political economic influences within and outside the forestry sector<br>Global analysis of different REDD design options based on assessment of proposals made by governments and other stakeholders | Web site on REDD and bioenergy (EU Bioenergy)<br>Typology of existing REDD schemes<br>Document on analysis of tropical deforestation due to bioenergy development (EU Bioenergy)<br>Forest Day 3 organized | IPCC, negotiators (COP), scientific community, donors, EU parliament and EC, national and local governments/ parliaments, NGOs, private sector, civil society organizations, research institutions, conservation agencies | Actors and policy makers have improved understanding on key REDD issues, which leads to an improved international REDD architecture | Improved effectiveness of international REDD arrangements in reducing forest-based emissions and associated co-benefits |
| Output Targets 2010 | Comparative analysis of the efficiency, effectiveness and equity of first generation national REDD strategy and policy formulation and implementation frameworks | Three pilot country case studies analysing the political and economic barriers likely to limit REDD strategy formulation and implementation (SW, MB).<br>Comparative analysis of actors and governance conditions influencing efficiency, effectiveness and equity outcomes from REDD strategy development and implementation in 3 selected countries (MB).<br>A comparative analysis of first generation REDD policy frameworks in at least 3 pilot countries (SW).<br>Up to three regional workshops to build partner capacity and | IPCC, negotiators (COP), scientific community, donors, EU parliament and EC, national and local governments/ parliaments, NGOs, private sector, civil society organizations, research institutions, conservation agencies | Negotiations of the global post 2012 climate regime include REDD as an element of the global post 2012 climate regime in a manner that more efficiently meets environmental and social goals | Improved effectiveness of REDD strategies in reducing forest-based emissions and associated co-benefits |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | generate input to framework for comparative analysis of national REDD initiatives (SW, MB).<br><br>Developed, consulted, revised framework for comparative analysis of national REDD initiatives (SW). | | | |
| Output Targets 2011 | Comparative analysis of political economy barriers and definition of minimum governance conditions for efficient, effective and equitable REDD policy formulation and implementation | Eight case studies of policy processes political and economic barriers for national REDD policy formulation and implementation in 8 pilot countries (SW, MB).<br><br>A document synthesizing lessons on the roles of actors and governance environment in the first generation REDD national policy formulation and implementation (MB).<br><br>Analysis and formulation of main barriers and minimum governance conditions for effective, efficient and equitable REDD strategy formulation and implementation (SW).<br><br>Database with survey data from 8 countries (tbd).<br><br>Up to three regional workshops to review country findings and draw general lessons for political economy barriers and minimum governance conditions for REDD policy formulation and implementation (SW, MB). | IPCC, negotiators (COP), scientific community, donors, EU parliament and EC, national and local governments/ parliaments, NGOs, private sector, civil society organizations, research institutions, conservation agencies | Global policy processes are influenced by results on different options for REDD, and trade-offs between them to include REDD as an element of the global post 2012 climate regime in a manner that more efficiently meets environmental and social goals | The architecture of the global post 2012 climate regime includes REDD strategies that are based on improved effectiveness and efficiency of reducing forest-based emissions and generating associated co-benefits in an equitable manner |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2012 | Recommendations to improve the transparency, inclusiveness, and efficiency of REDD policymaking processes, including REDD national strategies and implementation frameworks | Best practice manual and toolkit to inform second generation REDD policy formulation processes and strategy development (tbd).<br>Policy documents on key issues for REDD policy processes and strategy development and implementation (tbd).<br>Two global seminars to disseminate final results and products (e.g. in conjunction with UNFCCC COPs) (tbd). | REDD policy makers (national and local governments) and other stakeholders (donors, civil society organizations) involved in national REDD initiatives. | Second generation REDD national-level activities, are designed using best practices of implementation.(derived from the experiences and outcomes from first generation activities) | National REDD processes and strategy implementation are conducted such that more real carbon reductions are achieved with co-benefits. |

Logframe for Project 2*:* Enhancing the role of forests in adaptation to climate change

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1 | Identification of strategies for adapting sustainable forest use and management to the context of climate change | | Forest users in general (local communities, extractive companies, forest managers, extension services, NGOs, etc) Forest policy community (Ministries in charge of forests, Ministry of planning, and other actors in the policy arena) International community (UNFCCC, IPCC, donors and board of adaptation fund, scientific community). | Mainstreaming climate change adaptation in forestry.<br><br>Implementation of new management practices for tropical forest ecosystems. | More forests sustainably managed for the provision of goods and services in the context of climate change |
| Output Targets 2009 | Identification of vulnerability of forest communities to climate variability and change in West Africa | ▪ Document /publishable article on adaptive capacity and local knowledge of forest-dependent communities in West Africa (MI)<br>▪ Scoping and review papers about the vulnerability of forest communities and the need for adaptation (synthesis papers 1 & 2 from TroFCCA JN, Adaptation book, BL)<br>▪ Guide on climate change datasets. Available data on climate change (HS, MI, PI). | ▪ Scientific community<br>▪ Forest users or managers (communities, companies, extension services, NGOs…)<br>▪ Forest policy makers (forest ministries, planning…) | Forest users in general are aware of climate change facts and data, and know how to adapt their practices to climate change. | Increased resilience of most vulnerable forest communities and ecosystems as a result of more appropriate adaptation measures |
| Output Targets 2010 | National geospatial and local scale assessments of vulnerability of forest communities to climate variability and change in Africa | ▪ Case study reports on local vulnerability of forest-dependent communities (TroFCCA MI, MB, FK and CoFCCA DS)<br>▪ Document about mapping the vulnerability of forest communities at national scale (CofCCA DS, MI, BL) | ▪ Forest users or managers (communities, companies, extension services, NGOs…)<br>▪ Forest policy makers (forest ministries, planning…) | Forest communities are engaged in a process of vulnerability assessment and decision makers are aware of the main drivers of vulnerability. | Increased resilience of most vulnerable forest communities and ecosystems as a result of more appropriate adaptation measures |
| | Methods and tools for assessing the impacts of | ▪ Articles on the use of specific tools and methods for | ▪ International community (UNFCCC, donors, adaptation | Relevant institutions use adequate tools to improve forest conservation | |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | climate change on forests and their services | assessing the impacts of climate change on hydrological services (PI), soil protection (HS), protected areas (BL PI), plantations (BL PI), forest fires (HS HH PI BL)<br>▪ Synthesis paper on tools and methods (BL) | funds, IPCC, scientists…)<br>▪ Forest users or managers (communities, companies, extension services, NGOs…) | and management decisions in the context of climate change | |
| Output Targets 2011 | Prioritization of forest locations for targeting adaptation interventions from the international community and national governments | ▪ Articles on vulnerability mapping of social ecological systems in different countries (DS, BL, others in new projects)<br>▪ Reports on dialogue with donors and decision makers about vulnerability mapping and prioritization (JN, DS, BL, others in new projects)<br>▪ Policy briefs | ▪ Forest policy makers (forest ministries, planning, other actors influencing policy)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Funds for climate change adaptation are more efficiently and effectively allocated | Increased resilience of most vulnerable forest communities and ecosystems as a result of more appropriate adaptation measures |
| | Identification of interventions for strengthening the adaptive capacity of forest-related people based on comparative analysis | ▪ Case study reports (DS, MB, others in new projects)<br>▪ Synthesis paper on Participatory Action Research for adaptation (in Central Africa)) | | Decision makers know better practices for strengthening adaptive capacity | |
| Output Targets 2012 | Identification of approaches for integrating adaptation to climate change in forest management, conservation planning and forest based climate change mitigation activities | ▪ Paper on adaptation measures and strategies for forest management and conservation.<br>▪ Paper on the trade-offs or synergies between adaptation and mitigation. Paper on how to develop forestry projects and policies with dual benefits on adaptation and mitigation<br>▪ Policy briefs | ▪ Forest policy makers (forest ministries, planning…)<br>▪ Forest users or managers (communities, companies, extension services, NGOs, conservation bodies, mitigation programs…)<br>▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local) | Forest managers apply better practices of in a context of a changing climate<br>Forest mitigation projects and policies contribute to adaptation: | Increased resilience of most vulnerable forest communities and ecosystems as a result of more appropriate adaptation measures |
| | Comparative analysis of gender-differentiated vulnerability, adaptive strategies | ▪ Case studies on gender issues related to vulnerability and adaptation (CoFCCA | ▪ Forest policy makers (forest ministries, planning…)<br>▪ International community | Decision makers recognize gender specific needs in the adaptation of forest communities to climate | Increased resilience of most vulnerable forest communities and ecosystems as a result of |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | and roles in adaptation in Africa | team, MI)<br>▪ Policy briefs | (UNFCCC, donors, adaptation funds, IPCC, scientists…) | change | more appropriate adaptation measures |
| Output 2 | Identification of roles and potentials of forests to contribute to reduced social vulnerability beyond the forestry sector | | ▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Integration of forest into the climate change adaptation agenda at different levels<br><br>Improved land-use planning and governance to harness the potential of forests to reduce vulnerability<br><br>Forest-dependent sectors are empowered to influence national and international policies regarding forest or adaptation | Reduced vulnerability of sectors and stakeholder depending on forest ecosystem services |
| Output Targets 2009 | Vulnerability assessment of selected sectors dependent on forest ecosystem goods and services | ▪ Synth. papers on vulnerability assessment tools & methods (BL + TrofCCA SP2, BL)<br>▪ Synth. paper on the need for ecosystem-based adaptation (TroFCCA SP1 and 3, HS, JN).<br>Vulnerability maps (TroFCCA CA and WA, MI, RV, PI, BL) | ▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Relevant institutions can better assess their vulnerability to climate change and changes in the provision of forest goods and services and can identify more effective responses | Reduced vulnerability of sectors and stakeholder depending on forest ecosystem services as a result of preservation of key services from forests |
| Output Targets 2010 | Comparative study on how current governance systems address the potential of forests to reduce vulnerability of other sectors and stakeholders | ▪ Paper on policies for ecosystem based adaptation (MB, TroFCCA SP1 and 3, JN, HS)<br>▪ Papers on analyzing governance and vulnerability (Policy Network Analysis, MB, RV)<br>▪ Papers on the role of forest in current adaptation policies (NAPAs/Africa, fire/Asia, FK, HS, HH) | ▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Relevant institutions can better identify the need for adequate governance arrangements and financial mechanisms for fostering the use of forest ecosystem services in adaptation | Reduced vulnerability of sectors and stakeholder depending on forest ecosystem services as a result of preservation of key services from forests. |
| | Assessment of the potential of different financial mechanisms to foster the use of forest ecosystem services in | ▪ Papers on PES and adaptation (Central America RV + general SWK BL MB)<br>▪ Paper on carbon markets and | | | |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | adaptation | adaptation (synergies miti-adap BL, DM, MC) | | | |
| Output Targets 2011 | Improved and validated action research methods for facilitating cross-scale ecosystem-based adaptation, (adaptation policies and measures harnessing the potential of forests for the adaptation of society at local and national scale). | ▪ Synth. paper on approaches facilitating ecosystem-based adaptation (PAR, CoFFCA).<br>▪ Paper on empowering forestry actors to link with other actors on adaptation (MB, MI, JN, HS, other in new projects) | ▪ Forest users or managers (communities, companies, extension services, NGOs…)<br>▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local) | Participatory action research is used for improving adaptation planning in the forestry sector and forest-dependent sectors | Reduced vulnerability of sectors and stakeholder depending on forest ecosystem services as a result of preservation of key services from forests |
| | Recommendations for adaptive governance for facilitating ecosystem-based adaptation, based on comparative analysis | ▪ Synthesis papers on governance features needed for ecosystem-based adaptation (MB, others in new projects)<br>▪ Articles or report on case studies + synthesis report on policy network analysis for mainstreaming ecosystem-based adaptation (JN, MB, MI, HS, others in new projects) | ▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Adaptation plans or strategies (private or public) consider forests for adaptation | |
| Output Targets 2012 | Comparative cost-benefit assessment of ecosystem-based adaptation compared to other adaptation strategies | ▪ Articles or report on case studies on economic valuation of ecosystem services in a context of climate change<br>▪ Synthesis paper | ▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local)<br>▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | Decision makers recognize that ecosystem-based adaptation is a cost-effective approach to adaptation | Reduced vulnerability of sectors and stakeholder depending on forest ecosystem services as a result of preservation of key services from forests |
| | Analysis of funding needs for implementing ecosystem-based adaptation, based on comparative analysis in Africa | ▪ Report on case studies about funding needs and opportunities<br>▪ Guidebook on adaptation funding for ecosystem-based adaptation<br>▪ Report on policy-science dialogue on how to target | ▪ Forest users or managers (communities, companies, extension services, NGOs…)<br>▪ Planning agencies and policy makers (e.g., finance, agriculture, land use) at different levels (e.g., national and local) | Donors, policy makers, and practitioners are aware of adaptation funding needs and opportunities, as well as funding mechanisms. | |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | adaptation funds | ▪ International community (UNFCCC, donors, adaptation funds, IPCC, scientists…) | | |

Logframe for Project 3: Improving livelihoods through smallholder and community forestry

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1: | Identification of enhanced technical practices that facilitate sustainable smallholder and community forestry and secure safety-nets from forests | | International initiatives for guideline development (e.g. WWF, EU, industry associations, ITTO, IUFRO), certification bodies, NGOs, forestry extension, producer associations | Use of information on improved timber and NTFP production practices by service and extension agencies to facilitate adoption of improved management by smallholders and communities | Better managed forests that deliver more sustainable outputs |
| Output Targets 2009 | A series of case studies to identify enhanced silvicultural practices for smallholder and community management of products from natural forests | *Paper on management norms for community production of Brazil nuts (PC)*<br>*Paper on leaf harvest techniques for sustainable yield (CE)*<br>*Paper on NTFP vs. Timber (MG; PS)*<br>Brochure on best practices for managing select native NTFPs in Amazonia (PS)<br>Brochure on latex production (MS, PS)<br>Guidelines on gum and resin production in Burkina Faso and Ethiopia (MZ, HK, Sida Dry Forests)<br>Practical guide for managing woodlands for forest enterprises (DG, Sida Dry Forests)<br>Production technologies for beekeeping (MH, Sida Dry Forests)<br>Reports on NTFP management | National-level NGOs and forestry extension agencies | Use of best practice information by agencies providing extension to smallholders and communities involved with timber and non-timber extraction, leading to smallholder adoption of identified techniques | Increased extent of well-managed smallholder forests, leading to greater sustainability, and greater incomes for smallholders |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | and markets in Cambodia (MB) | | | |
| Output Targets 2010 | A series of case studies to identify enhanced silvicultural practices for smallholder and community management of plantations (including timber and NTFPs) | Silvicultural guidelines for Acacia, Jabon and Mahogany for smallholders (MKo, BMZ)<br><br>Manual on best practices for smallholder teak production (DR, ACIAR Teak)<br><br>Training for management and commercialization of high-value NTFPs in Cambodia (MB, ITTO) | National-level NGOs and forestry extension agencies, district planning authorities | Use of best practice information by agencies providing extension to smallholders and communities, and use of tools by district planning authorities, leading to smallholder adoption of identified techniques | Increased production and extent of well-managed smallholder plantations, leading to less pressure on natural forests, and greater incomes for smallholders |
| Output Targets 2011 | Analysis of how scientific knowledge can complement local ecological knowledge to improve smallholder forest management strategies | Paper on the impact of logging on livelihoods, and the role of local ecological knowledge (PS, landscape mosaics, SDC)<br><br>Final report of Cambodian NTFP project (MB, ITTO) | International initiatives for guideline development (e.g. WWF, EU, industry associations, ITTO, IUFRO), Certification bodies, forestry extension agencies, district planning authorities, producer associations | Better targeting of forestry research and development activities, so as to complement local knowledge more effectively | More effective research products help to foster better improvements in the sustainability and productivity of smallholder forestry |
| Output Targets 2012 | Synthesis of principles for interventions to improve technical management of timber and non-timber resources for smallholder and community forestry | 2-3 case study papers that demonstrate the principles (e.g. "Options that contribute to the sustainable supply of gums and resins by smallholders" paper that demonstrates the role regulatory policies play in market development)<br><br>Synthesis paper<br><br>Series of policy briefs for international fora | International initiatives for guideline development (e.g. WWF, EU, industry associations, ITTO, IUFRO), Certification bodies, international development and conservation NGOs | Use of guidelines and principles derived from the research by international agencies, certification organisations and extension bodies, so as to facilitate adoption of improved methods by smallholders | Better managed forest resources and fewer failed forestry initiatives lead to benefits for the poor and the environment |
| Output 2: | Tools, guidelines and approaches that strengthen local organizations and forest enterprises to enhance outcomes from smallholder | | Community groups, producer associations, cooperatives, social movements and the agencies that deal with them: development and conservation NGOs (e.g. CARE, WWF), | Intended users of the outputs implement tools, guidelines and approaches to improve capacity of local organisations to represent themselves, negotiate | Improved livelihoods of smallholders and communities from forestry activities that are mediated by local organizations |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | and community forestry | | national extension agencies, private companies | and distribute benefits | |
| Output Targets 2009 | Identification of effective interventions to enhance smallholder access to information and markets | Paper on certification possibilities in dry forests (MZ, Sida Dry Forests)<br>Articles in "Knowledge Transfer" Special Issue of Biotropica.<br>Series of publications on adaptive collaborative management (CC)<br>Role of collective action in dry forest management (FP, Sida Dry Forest)<br>Strengthening community organisations to participate in community-company partnerships using the role-playing games approach (HP)<br>Timber and non-timber forest product extraction and management in the tropics: towards compatibility? Manuel R. Guariguata, Carmen García-Fernández, Robert Nasi, Douglas Sheil, Cristina Herrero-Jáuregui, Peter Cronkleton, Ousseynou Ndoye, Verina Ingram | Community groups, producer associations, cooperatives, social movements, development NGOs (e.g. CARE), national extension agencies, private companies | Use of new information on interventions by agencies working with smallholder and community forestry | Better functioning producer and other groups lead to enhanced benefits for producers |
| Output Targets 2010 | Case study assessments of how producers, and in particular marginalised groups including women and the poorest rural dwellers, can capture a greater | Market performance and impact of Irvingia spp in households in Cameroon<br>AA) | Community groups, producer associations, cooperatives, social movements, development NGOs (e.g. CARE), national extension | Techniques to enable increased market capture utilised by communities and producer associations and promoted by development NGOs and extension | Enhanced incomes for smallholders due to increased value chain capture |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | portion of the forest product value chains (in terms of value adding, certification, fair trade, greater negotiating power, use of ICTs such as cell phones and internet) | Teak and furniture value chain papers (HP, DR, Rini, ACIAR Teak)<br>Policy briefs for Jepara on recommendation to balance value addition distribution among furniture actors, men and women, and overcome constraints (HP, Rini et al.<br>Brazil nut value chains and business models for smallholder and community forestry (PP, PC)<br>Comparative paper on honey values chains in africa (VI, MH, TC)<br>Paper on five NTFP value chains and management in Cameroon & DRC (VI, AA, JS with FAO & ICRAF)<br>Gnetum in African and Asia - strategies for livelihoods and conservation (VI, TC, H Tabuna, Soedjarwo Soejatmoko)<br>Global Framework for Forest Product value chain analysis (Herry, Verina, Dani, Rini, Habte, Madeleen,..)<br>Paper on gender equity issues in forest value chains (SS)<br>Gums and resins value chain paper (HK, Sida Dry Forests)<br>Monograph on economic important NTFPs in Cambodia | agencies | agencies | |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | Forests and livelihoods: three NTFPs in DRC (VI, R Reafor students fro Uni Kisangani DRC)<br>Marketing system and the value chain of gums and resins in Ethiopia. | | | |
| Output targets 2011 | Comparative analysis of how smallholders engage with larger private sector entities, with a focus on rural financing mechanisms for smallholder and community forestry | Review of rural financing schemes for smallholder forest enterprises, financing behaviour, and the relevant policy and regulatory frameworks (DR, ACIAR Teak, BMZ smallholder)<br>Overview paper on rural financing systems<br>Comparative study of community-company partnerships in Indonesia and Vietnam on the relative advantages, constraints and effectiveness of different types of contracts and organizations | NGOs, development agencies, financial organisations | Best practice financing schemes promoted by development agencies and supported by financial institutions | Enhanced forest management and enhanced smallholder-based forest enterprises due to availability of finance |
| Output Targets 2012 | Comparative analysis and synthesis of how smallholder and community producers achieve gains in efficiency, reduce costs, and capture a higher price for their products through improved coordination | Paper on key constraints to effective organizations and institutional arrangements for smallholder and community forestry<br>Synthesis paper based on case studies of a variety of products showing transaction costs and how they can be reduced by organisational development. | Community groups, producer associations, cooperatives, social movements, development NGOs (e.g. CARE), national extension agencies, private companies | Methods to improve the organisation of smallholder and community forestry taken up and used by development agencies | Improved functioning of groups leads to reduced transaction costs, better market access and higher incomes |
| Output 3: | Recommendations for national and international policies and approaches that promote sustainable livelihoods through smallholder and | | International donor community, conservation agencies, policy makers in national land, agriculture and forestry agencies | Adoption of policies and strategies by governments and agencies that include forests in poverty alleviation strategies. | Enhanced income and livelihoods of forest communities |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | community forestry | | | | |
| Output Targets 2009 | Comparative study of the roles of forest resources in safety nets and income generation, including analysis of the interactions between access, markets and forestry regulations. (Cameroon, Ghana, Nigeria, Zambia, Burkina Faso, Ethiopia, Indonesia, Cambodia and Brazil) | Using the value chain market analysis approach to understand NTFP exploitation (VI)<br>Policy briefs NTFP market chains DRC and Camerooon (VI, AA, JS)<br>Paper on income from forest-based enterprises (MH, Dry Forest)<br>Policy briefs for West Africa on livelihood strategies from forest products (TS)<br>Paper on implications of tenure regimes on forest-based livelihoods and enterprises presented IASCP/WFC (PP)<br>Paper on access and livelihoods for smallholder and community forestry (DB, AL, PC; RRI)<br>Paper on implications of Informal institutions for community forestry (PP, RRI)<br>Prunus africana – 'conservation-livelihood analysis' (VI) | Development, training and educational agencies and national institutions in Cameroon, Ghana, Zambia, Ethiopia, Burkina Faso, Nigeria, Brazil and Indonesia.<br>Development and conservation NGOs, donor organizations | Policies and forestry curricula which are based on better consideration of multiple uses and values in forest management.<br>Use of new understanding to better structure access rights for smallholders and communities. | Multiple use forest management results in improved total social benefits as a result of implementation of policies that better balance multiple forest values |
| Output Targets 2010 | Case studies on smallholder incomes from natural forests (in relation to incomes from other livelihood activities) from diverse countries in Latin America, Africa and Asia | Papers (one per country), plus policy briefs, on smallholder incomes from - Zambia, Mozambique, DRC, Brazil, Bolivia, Ecuador, Bangladesh, Cambodia, Vietnam (SW, AA, TS) | Researchers, think tanks, policy advisors, particularly in national agencies | Improved understanding by key policy advisors of the role of forests in poverty alleviation strategies, so as to improve forest sector based rural development programmes | Increased tree access by the rural poor as a result of improved support, leading to greater benefits from smallholder production. |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2011 | Analysis of global data set on household incomes to identify the role of forests in human well-being and how forest incomes fit in overall household livelihood strategies | Earthscan book on environmental income assessments and field methods (PEN) (SW) | Researchers, think tanks, policy advisors, particularly those in international agencies | Improved understanding by key policy advisors of the role of forests in poverty alleviation strategies, so as to improve forest sector based rural development programmes | Increased tree access by the rural poor as a result of improved support, leading to greater benefits from smallholder production. |
| | Analysis of impacts (in terms of local incomes, community rights and environmental conditions) of different models of community forestry | Review paper on the determining factors for successful community forestry<br>Paper on the livelihood benefits of different models of community forestry<br>Paper on the impact on forest conditions under different models of community forestry | Researchers, think tanks, policy advisors, particularly those in international agencies, and focused on those players promoting community forestry | Improved understanding of the costs and benefits of different forms of devolution and approaches to community forestry leading to a more appropriate array of options being promoted in practice. | Better and more sustainable effects in terms of rights, incomes and environment from community forestry |
| Output Targets 2012 | Synthesis of effective conditions and types of public sector forestry sector investments for achieving poverty alleviation goals | World Development synthesis paper or Special Issue in conjunction with high-level conference (PEN) (SW)<br>High-level paper in Science or Nature on forests and environmental incomes<br>Thematic papers on forest incomes (e.g. tenure) (PEN) (SW)<br>Analysis of PRSPs and national planning processes to determine how forestry can be better incorporated (FP)<br>Synthesis of case study work on forest enterprises to tease out policy impediments (VI)<br>Territorial governance | National economic planning agencies, development agencies, Forest companies, NGOs, development agencies | Improved policy alleviation policies that take into account the role of forests resources as a safety net, gap filler, subsistence income, source of savings and investment, and occasional path out of poverty. | Forest-based incomes of the poor increase, and/or are less risky as a result of more effective forestry interventions. |

| | *Outputs* | *Verifiable Indicators of Output Target* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | mechanisms (PP, RRI)<br>Formulating a set of recommended actions to be implemented by local organisations, the Government and support organizations for better livelihoods and conservation outcomes in specific countries (e.g. Ethiopia). (HK) | | | |

Logframe for Project 4: Managing the tradeoffs between conservation and development at landscape scales

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1: | Development of improved empirical basis and methods for assessing and monitoring environmental services at landscape levels | | Land-use planners; Implementers of conservation initiatives; Agricultural agencies; Designers of PES schemes (NGOs, government agencies) | Use of methods leads to improved assessment of environmental services provided within the landscape | More efficient and effective conservation and use of environmental services due to enhanced ability to identify service flows |
| Output Targets 2009 | Assessment of tools and approaches for measuring the provision of ecosystem services (provisioning, regulating, cultural and supporting)<br>Improved methods for participatory interpretation of satellite images for forest monitoring | An assessment for practitioners on lessons learned in participatory tropical forest management monitoring, (MG)<br>Documentation of participatory biodiversity monitoring methods and tools in Laos (merged SDC III and Landscape Mosaic projects) (MB, JLP)<br>Peer reviewed paper on lessons learned in participatory tropical forest management (MG)<br>Paper on spatial determinants of forest-based pollination services for selected crops in Colombia (MG)<br>Review of existing forms of land management, LUP and monitoring practices in Laos and Indonesia (MB, JLP, IB, YL)<br>Tools for participatory interpretation and understanding of satellite images (GT) | Land-use planners; Implementers of conservation initiatives, those involved in marketing environmental services | Use of methods leads to improved assessment of environmental services provided within the landscape | More efficient and effective conservation and use of environmental services due to enhanced ability to identify service flows |
| Output Targets 2010 | Synthesis of how scientific and local knowledge can be integrated in more efficient environmental service | Paper on the integration of scientific and local knowledge on environmental services, including women's knowledge | Land-use planners; Implementers of conservation initiatives, those involved in marketing environmental services, rural | Use of methods leads to improved assessment of environmental services provided within the | More efficient and effective conservation and use of environmental services due to enhanced ability to identify |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | monitoring methods in forest landscapes | and perceptions (LM-MB, PS, LY)<br>Multi-author Special Issue on measuring the flow of non-carbon services (MG) | development agencies | landscape | service flows |
| Output Targets 2011 | Analysis of the influence of landscape configuration on the provision of (non carbon) environmental services | Paper on innovative biodiversity monitoring systems based on activities developed in Laos (MB, JLP, IB)<br>Multi-author special Issue on evaluating ecosystem services resulting from symposium at 2010 ATBC meeting (TS and others) | Land use planners, implementers of conservation initiatives | Improved spatial configuration of conservation areas | More efficient and effective conservation and use of environmental services due to enhanced ability to identify service flows |
| Output Targets 2012 | Enhanced methods for spatial analysis of ecosystem service flows | Global review paper on effectiveness of regulation services provided by ecosystems including monitoring methods and application of underlying<br>biophysical principles | Academia, global and regional decision makers, national planning agencies | Better informed decision making processes and support systems in conservation planning | Conservation planning better maximises ecosystem services generated |
| Output 2: | Identification of principles, methods and processes for optimizing conservation and livelihood values from the allocation of land use rights within forest landscapes | | Govt officials at various levels, land use planners, practitioners and social movements | Land use planners and practitioners etc are using principles and methods resulting in clearer recognition of C&D trade-offs in land and rights allocation and in better outcomes | More equitable land use rights allocation strengthen the capacity of local managers, improving livelihoods and reducing deforestation |
| Output Targets 2009 | Comparative appraisal of on-going negotiation mechanisms for improved landscape management based on case studies of land tenure reforms in forested areas | Paper on comparison of governance strategies in forested landscapes (CC, LM)<br>Analytical framework as a result of CIFOR Annual Meeting 2008 and further discussion (all, MM lead)<br>Local and overall synthesis | Local stakeholders, land management authorities, ministries of Forestry aid organizations, research community, governments | Reforms adopted for more efficient and equitable allocation of land use rights | Land use better optimised for its productive potential for society, resulting in greater social, environmental and economic benefits. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | document on findings and experiences in a peer-reviewed paper (GT)<br>Regional comparison studies on access and livelihoods (RRI): informal institutions (DB, GD, AL)<br>Review on forest tenure in Latin America (AL)<br>Synthesis of forest social movements and impacts on tenure (PC, CE) | | | |
| Output Targets 2010 | Comparative analysis of governance processes used by land use planners in managing trade-offs at local and landscape levels | Book on the comparison of governance strategies in forested landscapes (CC, LM)<br>Analysis of the role of local knowledge in strengthening and maintaining both men's and women's local adaptive capacity (PS, MM, CC)<br>Publication about how different interest groups (e.g., men/women, old/young, different ethnic groups) perceive the legitimacy of customary norms and formal policies on resource access and management (CC, MM)<br>Paper on the effects of legalizing/codifying land tenure on customary practices, including the effects on women (Profor, CE, RRI – earlier for RRI, DB, BK)<br>Paper on the effect of accessibility based on case | Land management authorities, conservation NGOs, local government institutions | Reforms adopted for more efficient and equitable allocation of land use rights | Land use better optimised for its productive potential for society, resulting in greater social, environmental and economic benefits. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | studies (LM-JLP) | | | |
| Output targets 2011 | Collaborative decision-making and monitoring tools for strengthening community involvement and participation in conservation and land use planning | How can decentralized decision making build legitimate and transparent local institutions for managing conservation-development tradeoffs and increase negotiating power of marginalized groups (including women)? (AL, MM)<br>Analysis of what works for external implementers, including how to catalyze women's involvement/, energies and interests in facilitating change (LY, MM)<br>Analysis of what communities need to do to influence the conservation agenda (LY, MM) | Practitioner community (IMFN, social movement NGOs, district agencies, land-use planners, conservation NGO implementers) | Reforms adopted for more efficient and equitable allocation of land use rights | Land use better optimised for its productive potential for society, resulting in greater social, environmental and economic benefits. |
| Output Targets 2012 | Assessment of the implementation of land use planning tools and approaches and consequent equity effects for local communities | Examination of extent and efficacy of participatory land-use planning in selected countries and their impacts on marginalized groups (TBC) | Land management authorities, conservation NGOs, local government institutions | Improved planning methods adopted for more efficient and equitable allocation of land use rights | Land use better optimised for its productive potential for society, resulting in greater social, environmental and economic benefits, while minimizing social costs |
| Output 3: | Identification of improved modalities and approaches to effectively support conservation in forest landscapes | | Senior levels in government, conservation organizations (e.g. IUCN forest program), donor agencies and social movement organizations (e.g. Forests Peoples Program) | Better choices of institutional models to promote in different conditions | More effective forest conservation arrangements, with accordant reductions in conflicts, improved livelihoods, and retained environmental assets |
| Output Targets 2009 | Development of an evaluation framework for assessing the outcomes of different conservation-development models | Analytical framework: all (series of case studies where counter-factual examples can be defined, land-use changes followed and livelihood | Conservation community | Enhanced evaluation of conservation initiatives | Improved selection and implementation of conservation programes, with attendant environmental and social benefits |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | outcomes measured, with case studies selected on the basis of governance characteristics amongst others) | | | |
| Output Targets 2010 | Preliminary analysis of the effectiveness of alternative conservation approaches in terms of deforestation effects, livelihood outcomes, and local empowerment | Paper comparing ICDP outcomes and contexts for critical planning action (TS, YL, JL)<br>Paper on the role of the private sector in conservation (MM, TS)<br>Analysis of effects of decentralization (including jurisdictional fragmentation) on forest conservation (MM)<br>Review on the success and equity of pilot landscape-level non-carbon PES mechanisms (SW)<br>Comparative analysis of deforestation in/outside of different institutional models (context/conflict/actors) (JLP, based on LM examples)<br>A review of the potential of REDD to contribute to forest conservation and the potential livelihood implications of greater "command and control" mechanisms (TS, Thomas Sikor and others)<br>Case studies on the potential of REDD to contribute to forest conservation and livelihood improvement, (including women's) (BC, MS, SW and others) | UN Permanent Forum on Indigenous People's; World Rainforest Movement; large international Non Governmental Organisations | Governmental institutions, donors and conservation agencies draw on CIFOR's comparative analysis to support alternative conservation models and ICDP approaches to achieve more effective conservation-development outcomes | Improved conservation programmes, resulting in improved environmental and social benefits |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2011 | Comparative analysis of the circumstances under which different conservation approaches including payment for environmental services and non-cash incentives can be effective in delivering environmental services and improved livelihoods | Paper on ICDP "syndromes" (PC, CE)<br>Reconciling effective conservation and responsible development in West Papua (Indonesia) (MB, KO)<br>Comparative analysis of the outcomes of C&D and REDD initiatives (TS, DM)<br>Analysis about opportunities and constraints for upscaling PES mechanisms from local pilots to national or region-wide schemes (SW and others)<br>Paper on health impacts of conservation efforts in one or more countries for/on men and women (CC, PS) | Senior levels in government, conservation organizations, donor agencies and social movement organizations | Governmental institutions, donors and conservation agencies draw on CIFOR's comparative analysis to support alternative conservation models and ICDP approaches to achieve more effective conservation-development outcomes | More effective forest conservation arrangements, with accordant reductions in conflicts, improved livelihoods, and retained environmental assets |
| Output Targets 2012 | Comparative assessment of the long-term impacts and effectiveness of donor funded biodiversity conservation assistance in developing countries | Paper on the long-term impacts and effectiveness of donor funded biodiversity conservation assistance in developing nations in order to maximise outcomes for both conservation and sustainable livelihoods (TS, BC, Robyn James) | Senior levels in government, conservation organizations and donor agencies | Governmental institutions, donors and conservation agencies draw on CIFOR's comparative analysis to support alternative conservation models and ICDP approaches to achieve more effective conservation-development outcomes | More effective forest conservation arrangements, with accordant reductions in conflicts, improved livelihoods, and retained environmental assets |

Logframe for Project 5: Managing impacts of globalized trade and investment on forests and forest communities

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1: | Analysis of future trends and development pathways for globalized forest-related trade and investment | | Development banks and multilateral agencies, Investment institutions, national governments, corporate actors, professional and industrial associations | Greater transparency and consideration of externalities in decision making related to globalized trade and investment that affects forests and forest communities | Fewer environmental and social externalities from forest-related trade and investment |
| Output Targets 2009 | Analysis of emerging sectoral (pulp and smallholder tree-planting) and extra-sectoral (biofuel) investment trends likely to have significant effects on forests and forest related livelihoods in select countries or sub-regions of Asia-Pacific | Study on trade and investment scenarios in Indonesia's pulp and plantations sub-sectors, linking global and regional trends to national and sub-national industry development plans (CB/AD-BMZ – timeline TBD)<br><br>Report on role of Vietnam and Indonesia in the Asia-Pacific wood market, highlighting key drivers of market change (CB/AD, BMZ)<br><br>Reports summarizing policies, plans, and regulations for industrial tree-planting in Vietnam and Indonesia, with analysis of implications for smallholders (CB/AD, BMZ)<br><br>Analysis of global and regional trends and scenarios related to bioenergy development, and implications for forest sustainability, economic development and well-being of affected communities (LG/KO, EC Bioenergy -- focus on investment in biofuels) | Government policymakers and planners (Ministries of Forestry, Agriculture, Industry, Trade), corporate actors (pulp & paper, biofuel, plantation companies), financial institutions, trade and industry analysts, multilateral institutions and donor agencies, industry and producers' associations, civil society organizations | Improved risk analysis and resource planning for pulp mill projects, biofuel investments, and smallholder tree-planting initiatives, so that financial support and market access for industries and plantation projects are directed towards those that are socially and environmentally sustainable | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural smallholders involved in industrial tree-planting programs and biofuel projects |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | Study on institutional weaknesses, governance failures, and political-economic power relations in forest-producing countries of Asia-Pacific (CB, WB regional study) | | | |
| Output Targets 2010 | Analysis of emerging sectoral and extra-sectoral trade trends likely to have significant effects on forests and forest related livelihoods in select countries or sub-regions of Africa and Latin America | Report analyzing historical trends in trade in key commodities shaping forests in LA, SSA and Asia-Pacific, (USAID/EC Bioenergy – LG/PP/GS)<br><br>Document on global analysis of bioenergy development as a driver of tropical deforestation (PP – EC Bioenergy 1.1)<br><br>Regional reviews of the main dynamics and implications of biofuel development (EC Bioenergy – KO Asia, LG/GS Africa, PP L America)<br><br>Report on medium term trade and investment scenarios in Indonesia's pulp and plantations sub-sectors, linking global and regional trends to national and sub-national industry development plans (output from 2009 study) (CB/AD - BMZ)<br><br>Policy briefs on the role of Vietnam and Indonesia in the Asia-Pacific wood market, highlighting key drivers of market change (CB/AD - BMZ) | Government policymakers and planners (Ministries of Forestry, Agriculture, Industry, Trade), corporate actors (pulp & paper, biofuel, plantation companies), trade and industry analysts, multilateral institutions and donor agencies, industry and producers' associations, civil society organizations | Financial support and market access for industries and forestry projects directed towards those that are more socially and environmentally sustainable | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural smallholders involved in or affected by investment trends |
| Output Targets 2011 | Analysis of emerging sectoral and extra-sectoral investment trends likely to have significant | Report on investment flows in key commodities shaping forests in selected regions and/or | Government policymakers and planners (Ministries of Forestry, Agriculture, Industry, Trade), | Improved risk analysis and resource planning for specific sectoral and extra-sectoral investments, so that | Inappropriate deforestation reduced, and livelihood security and sustainable |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | effects on forests and forest related livelihoods in select countries or sub-regions of Africa and Latin America | countries (LG/CB – EC Bioenergy, USAID) | corporate actors (pulp & paper, biofuel, plantation companies), financial institutions, trade and industry analysts, multilateral institutions and donor agencies, industry and producers' associations, civil society organizations | financial support and market access are directed towards industries and forestry projects that are more socially and environmentally sustainable | reduction of poverty advanced among rural smallholders involved in or affected by investment trends |
| | Case analyses of the social and environmental impacts and trade-offs of investment in select commodities (e.g. food crops, timber, metals, carbon) associated with the highest current and projected forest landscape transformation in select landscapes of Africa, Asia and Latin America | Paper summarizing the role of specific commodities in transforming landscapes and livelihoods in select landscapes of Africa and Latin America (LG, PP, KO)<br>Set of case studies summarizing the trade-offs within specific landscapes resulting from investment in key commodities affecting forests (LG, PP, KO) | National and local planning departments, forestry departments, NGOs, private sector, major donors | National and regional planning processes more effectively manage the local economic, social and ecological "footprint" of commodity development that impacts on forests. | Decrease in negative external impacts and improvement of local benefits from forest related investment |
| | Analysis of Chinese trade and investment trends in commodities shaping forests and livelihoods in the Congo Basin and southern African woodlands | Paper summarizing Chinese investment patterns in Africa and their economic, social and environmental impacts for a set of prioritized commodities (BMZ)<br>Analysis of Chinese government and corporate policies and legislation shaping Chinese operations overseas (BMZ)<br>Paper summarizing Chinese government and corporate investment trends, and import data and trends with key countries and commodities of interest (BMZ) | African and Chinese policy makers and planners (Ministries of Forestry, Agriculture, Industry, Trade, Foreign Affairs), civil society | African policy makers are informed of the major trends in forest-based investments shaping livelihood security, the environment and long-term economic development, and are more able to plan proactively to govern new investments to capture value and minimize costs. | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural smallholders influenced by major investments that impact forests and forest communities |
| | Guidelines and tools for improved financial due diligence, social-environmental safeguards, corporate | Report on tools to improve investment decision-making processes by financial institutions and corporate | Government policymakers (Ministry of Finance; Capital Investment Coordinating Boards) and financial regulatory agencies, | Use of guidelines to improve safeguards for investments in the forestry sector | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | disclosure, and legal compliance of investments in sectors that affect forests | disclosure framework for biofuel corporations (CB /AD – EC Bioenergy) | corporate actors, financial institutions, multilateral institutions, donor agencies, and civil society organizations | | among rural smallholders influenced by major investments that impact forests and forest communities |
| Output Targets 2012 | Analysis of legality and sustainability aspects of the extraction, processing and trade of timber generated through forest conversion for biofuel investments in the Asia-Pacific region | Paper analyzing to-date legality and sustainability experience with the conversion of timber generated form land-clearing to make room for biofuel plantation investments in the region as well as in select countries (KO - EFI).<br>Paper analyzing measures for greater adherence to legal requirements and requisite sustainability criteria for the conversion timber by planned biofuel plantation investment in the region and in select countries (KO - EFI). | Asia-Pacific policy makers and planners (Ministries of Forestry, Agriculture, Industry, Trade, Foreign Affairs), civil society, private sector actors, financial institutions and donor agencies | Improved policies and strategies in the Asia Pacific region that minimize deforestation and other ecological costs due to biofuel development (e.g. illegal logging, conversion timber of uncertain origin) and maximize economic benefits and their equitable distribution to the wider society. | Inappropriate deforestation reduced, and livelihood security advanced among rural communities involved in or affected by investment trends; more meaningful contributions of natural resources to national economic development. |
| | Analysis of the legality and sustainability aspects of timber generated through forest conversion for pulp and paper production and trade the Asia Pacific region | Paper examining on-going and planned pulp and paper capacity expansion in the region, resultant forest conversion, and plantation investments (KO - EFI). | Asia-Pacific policy makers and planners (Ministries of Forestry, Agriculture, Industry, Trade, Foreign Affairs), financial institutions, private sector actors, industry and trade associations, multilateral agencies, research institutions, and civil society | Better understanding among the policy makers, planners, and finance actors in the Asia Pacific region of the implications of the planned pulp and paper expansion in the region on forest resources and dependent on the rural livelihoods.<br>Improved policies and strategies in the Asia Pacific region that minimize deforestation and maximize economic benefits and their equitable distribution to the wider society. | Inappropriate deforestation reduced, and livelihood security advanced among rural communities involved in or affected by investment trends; more meaningful contributions of natural resources to national economic development. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 2: | Analysis of options for governing the economic, social and environmental trade-offs of major trends in forestry-related trade and investment within specific forest landscapes and communities | | National and local planning departments, forestry departments, finance ministries, investment regulation bodies, NGOs, private sector associations, regional economic organisations (ASEAN, CEMAC, COMESA, MERCOSUR, ...), development banks, UNFF | Corrective actions taken by national level actors to mitigate the negative social and environmental impacts of global trends in forestry-related trade and investment | Significant reduction of the negative social and environmental impacts of global trends in forestry-related trade and investment |
| Output Targets 2009 | Analyses of economic feasibility and environmental and social impacts of timber plantation development for smallholders and forest landscapes in Asia-Pacific and southern Africa | Journal articles and policy briefs on economic feasibility, and environmental and social impacts of timber plantation development in Indonesia (KO), Vietnam (MM) and Southern Africa (BC/CCLF)<br>(Cordaid; BMZ, CCLF) | National and local planning departments; forestry departments, NGOs; private sector; EC and major donors | National and regional planning processes incorporate the recommendations and proposed guidelines for improvement of timber plantation development<br>As a result, there is an improvement in the planning process of timber plantations, so that they are located in areas that minimise negative external effects. | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural smallholders involved in improved industrial tree-planting programs |
| Output Targets 2010 | Case analyses of the local social and environmental impacts and trade-offs of bio-energy development and how local and national governance arrangements shape these outcomes in select countries of Asia, Africa and Latin America | Papers summarizing the local social, economic and environmental impacts of bio-energy development in select case study countries in Africa, LA and Asia (Cordaid, ACIAR-ANU, EC Bioenergy 1.2 – LG Africa; KO Asia; PP Latin America)<br>Paper analyzing the legal and institutional frameworks for bioenergy production at national level in select case study countries in Africa, LA and Asia (EC Bioenergy 3.2 – KO Asia, LG Africa, PP Latin America) | National and local planning departments, ministries of finance and trade, forestry departments, NGOs, private sector, EC and major donors | National and regional planning processes incorporate the recommendations and proposed guidelines for improvement in bioenergy plantation development, so that they minimize the negative external impacts of bioenergy plantation development | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural communities influenced by major bioenergy investments |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | Policy options and recommendations regarding forest sector and extra-sectoral investments for ensuring sustainable plantation based fiber and timber supplies in select Asia-Pacific supplier and consumer countries based on participatory assessment of scenarios by key stakeholder groups | Report summarizing policy options and recommendations for improved smallholder tree-planting initiatives formulated through participatory assessment of preliminary scenarios by key stakeholder groups in Vietnam and Indonesia (CB/AD - BMZ)<br><br>Policy briefs summarizing policies, plans, and regulations for industrial tree-planting in Vietnam and Indonesia, with analysis of implications for smallholders (CB/AD - BMZ) | Government policymakers and planners (Ministries of Forestry, Agriculture, Industry, Trade),, financial institutions, multilateral institutions and donor agencies | Improved policies and international/national strategies for pulp mill projects, biofuel investments, and smallholder tree-planting initiatives | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural smallholders involved in industrial tree-planting programs and biofuel projects |
| Output Targets 2011 | Identification of policies and market-based mechanisms with the potential to foster more sustainable and equitable bioenergy development in forest landscapes | Synthesis of existing recommendations, criteria and indicators for sustainable production of bioenergy (EU Bioenergy 1.3 – PP)<br><br>Document on revised criteria and indicators for sustainable production of bioenergy (EC bioenergy 1.4 – PP)<br><br>Document on criteria and indicators for equitable production of biofuels (EC bioenergy 1.5 – LG)<br><br>Document on options for market-based mechanisms with the potential to ensure bioenergy development is limited to degraded land rather than converting natural forests (EC bioenergy 3.3 – LG)<br><br>Analysis of policy mechanisms introduced in the EU and their | Biofuel industry, certification bodies, government agencies, the EU Bioenergy Directive (DG-TREN), civil society | Improved monitoring of the biofuel sector; adoption of specific market-based instruments likely to yield more sustainable and equitable returns from the bioenergy industry | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural communities influenced by major bioenergy investments |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | impacts on forests (EC Bioenergy 3.4 – KO)<br><br>Document on potential for sustainable bio-energy production in Sub-Saharan Africa (EC Bioenergy 4.2 – LG)<br><br>Medium-term scenarios of future outcomes from biofuel development related to sustainability and equity (EC Bioenergy WP 6 – KO Asia, LG Africa, PP L America)<br><br>Report summarizing policy options and recommendations for improved outcomes related to biofuel development, formulated through participatory assessment of preliminary scenarios by key stakeholder groups in select countries or sub-regions of Africa, Asia and Latin America (EC Bioenergy WP 6 – LG Africa, KO Asia, PP L America) | | | |
| Output Targets 2012 | Analysis of social, economic and environmental impacts and trade-offs of Chinese investments in select commodities shaping forests and livelihoods in Africa, and the potential effectiveness of governance instruments in shaping these | Papers analyzing the impact of Chinese trade and investment on national economic development, local livelihoods and forests for prioritized countries and commodities (LG - BMZ).<br>Paper analyzing the effectiveness of governance instruments at diverse levels in shaping outcomes, and opportunities for leveraging more sustainable and equitable | African and Chinese policy makers and planners (Ministries of Forestry, Agriculture, Industry, Trade, Foreign Affairs), civil society, private sector actors, financial institutions and donor agencies | Improved policies and strategies in China and Africa to govern the social and ecological costs and benefits of major investments that impact forests and forest communities; reduced financial support and market access for industries and forestry projects that are socially and environmentally unsustainable. | Inappropriate deforestation reduced, and livelihood security and sustainable reduction of poverty advanced among rural communities involved in or affected by investment trends; more meaningful contributions of natural resources to national economic development. |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | outcomes (LG - BMZ). | | | |
| | Global comparative analysis of existing instruments for governing the local economic, social and environmental impacts on forest landscapes and communities of major trends in forest related investment | Comparative synthesis (across countries or sub-regions) of the trade-offs of investment in select commodities in different governance contexts, summarizing lessons learnt for policy and practice (LG, PP, KO)<br>Set of scenarios of different land uses and development pathways in select landscapes that highlight trade-offs between local economic impacts, environmental impacts and national economic development (LG, KO, PP) | Development banks, UNFF, Regional economic organisations (ASEAN, CEMAC, COMESA, MERCOSUR, ALENA…), National and local planning departments, forestry departments, finance and trade ministries, investment bodies, NGOs, | Local and national governments adopt improved governance arrangements for managing pressures on forests and local livelihoods in forested landscapes shaped by investment trends | Decrease in negative external impacts and improvement of benefits from forest related investment |

Logframe for Project 6: Sustainable management of tropical production forests

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output 1: | Identification of efficient public policies or market-based instruments to improve the social and environmental footprint of the use of production forests | | UNFF, CDB, ITTO, CPF, multi-lateral donors (EC) regional bodies (ASEAN, CEMAC), development banks, Forest Stewardship Council (FSC), scientific community. forestry departments, certification bodies, local forestry NGOs | More effective and equitable to preserve environmental and social values of tropical production forests | Communities, governments and forest companies benefiting over longer periods from better management and more sustainable use of goods and services from production forests |
| Output Targets 2009 | Recommendations for improved certification standards for the management of high conservation values in small and low intensity managed forests | Toolkits adapted to local conditions (FSC-IC, ProForest, CIFOR)<br>Standards for certification (FSC)<br>Training materials and training courses (ProForest)<br>Data collection and reporting system for monitoring high conservation values in certified forests (FSC-IC)<br>(UNEP/GEF certification project; RN) | Forest decision and policy makers in target countries, CPF and NGOs, FSC, Certification bodies, Communities | Improved certification standards endorsed and adopted by FSC and other third-party accreditation bodies for small and low intensity managed forests | Increase in forest area managed under more biodiversity-friendly and socially responsible practices. |
| | Identification of potential improvements to verification systems for legally harvested timber and forest products. | Case studies of existing verification systems (11 cases from forest sector; 7 comparative case studies) (www.verifor.org)<br>Principles in forest verification (www.verifor.org)<br>Book based on case studies, lessons learnt, and | National governments, forestry departments, multilateral donors, certification bodies, scientific community, local and international NGOs | Effective verification schemes of legality acceptable to all stakeholders | Lower quantities of illegally harvested forest products entering markets, with attendant reductions in deforestation |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | recommendations (PC)<br>(VERIFOR project) | | | |
| Output Targets 2010 | Tools and recommendations to curb illegal logging through integrated law enforcement approaches (ILEA, using both extra-sectoral – e.g. money laundering and corruption - and forestry regulations) amongst ASEAN countries | A set of guidelines to use Integrated Law Enforcement Approach for Indonesia and ASEAN countries to curb illegal logging in the region. (BS, AS, SM and partners)<br>(ILEA, ADRA Projects) | ASEAN, National and local governments, forestry agencies, law enforcement and judicial agencies, financial institutions, local forestry NGO, donors | The ILEA approach is implemented in Indonesia and other ASEAN countries to help curb illegal logging | Illegal logging is reduced and can be prosecuted in ASEAN timber production processes, resulting in more sustainable forest management |
| | Recommendations to the governments of Congo Basin countries (CEMAC) on measures to monitor and control their domestic wood product (timber, fuelwood and utility wood) sector | New policies/approaches toward artisanal wood harvesters (GL, PC, RN)<br>Scientific articles (GL, PC, RN)<br>Survey reports of informal sector (GL, PC)<br>Governance Brief(s) (team + ISG)<br>(DGIS illegal harvesting, FORAF projects) | National governments, forestry departments, bilateral and multilateral donors, scientific community, local and international NGOs | The legal frameworks in respective countries are adapted/modified for more effective and equitable policies on the domestic wood markets | Domestic wood harvesting and markets fully integrated into national legal frameworks and economy, so that the governance of deforestation is enhanced. |
| Output Targets 2011 | Assessment of the extent and the driving forces of illegal logging in Indonesia and the Congo Basin | Governance Brief(s) and/or article(s) on the extent and the drivers of forest loss<br>Journal papers (PC, GL, KO, RN) | Forestry departments, multilateral donors, certification bodies, scientific community, local and international NGOs | Improved policy measures to addresses illegal logging and deforestation in both regions | Lower quantities of illegally harvested forest products entering markets, with attendant reductions in deforestation |
| | Comparison of potential policy options for limiting deforestation and promoting economically feasible, environmentally responsible and socially | Governance Brief(s) and/or article(s) on best case scenarios for limiting deforestation and promoting a balanced approach to plantation development in | Forestry departments, multilateral donors, certification bodies, scientific community, local and international NGOs | Improved land allocation for plantation estates that minimize deforestation | Less deforestation and conflict from timber and oil palm plantation development in Papua, Indonesia |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | equitable plantation estates and development in Papua | Papua (KO)<br>(COR02 project) | | | |
| Output Targets 2012 | Policy options and recommendations to clarify and improve the role of different actors (government, donors, research organisations, certifying bodies, NGOs) in fostering sustainable forest management and limiting illegal logging in the Congo Basin in production forests | Journal articles (PC, RN and partners) | Forestry departments, logging companies, certification bodies, scientific community, local and international NGOs | Improved PCI for FSC (FSC-IC and national initiatives) . Improved and harmonised standards adopted by certifying bodies<br><br>Improved sustainability criteria adopted by national forestry deparments | Legal and certified forest management in production forests adopt improved standards, leading to better managed forests |
| | Analysis of the impact of the 2008- 2009 global crisis on the forestry sector (extraction, deforestation, degradation) | Journal articles | Forestry departments, multi- and bi-lateral donors, logging companies, certification bodies, scientific community, local and international NGOs | Domestic timber sector importance recognised at national level, challenges quantified, and legal frameworks modified<br><br>Improved legal framework regulating the domestic timber sectors | Forest management improved in the face of pressures from the financial crisis |
| | Adaptation of anti corruption and anti money laundering regulations and instruments for identifying and prosecuting illegal logging to Latin American and Congo Basin countries | A set of standards or recommendations for timber companies in complying with regulations (internal and external) | Timber companies, forest decision makers, Ministry of Industry, Ministry of Trade | Better monitoring system or regulations on timber companies in extracting and trading timber for Ministry of Forestry, Ministry of Industry, and Ministry of Trade | Money laundering and corruption in the management of timber production are reduced, leading to reduced deforestation. |
| Output 2: | Improved tools, methods and guidelines for better monitoring and management of tropical production forests | | ITTO, CPF, multi-lateral donors (EC) regional bodies (ASEAN, CEMAC), development banks, Forest Stewardship Council (FSC), IUFRO, scientific community, forestry departments, forest managers, companies, local forestry NGOs, communities and | Improved silvicultural and monitoring practices, consistent with sustainable forest management are implemented<br><br>Increased area under SFM | The ability of production forests to provide different goods and services is maintained, which leads into Increased social and environmental benefits |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | | others involved in management of production forests | | |
| Output Targets 2009 | Comparative analysis of silvicultural and management systems harmonizing timber and non-timber production in the Neotropics | Issues article on integration of timber and non-timber management (MG)<br>Articles on integration of Brazil nut and timber extraction in Bolivia and the Western Amazon(MG) | Forest decision makers, scientific community, research managers. | The scientific and practitioner communities are better informed about tradeoffs and opportunities in integrated timber and NTFP management | Optimised and more sustainable use of tropical production forests in the Neotropics, with attendant environmental benefits |
| | Regional analysis of deforestation, degradation and conservation of forests in the Congo Basin (baseline 2008) | State of Forest 2008 (RN, DS, VI and partners)<br>Scientific article on forest degradation (MK, RN)<br>(FORAF, Climate Change related projects) | COMIFAC, National governments, forestry departments, multilateral donors, certification bodies, scientific community, local and international NGOs | Scientifically informed policy dialogue on deforestation and degradation | More effective remedial measures that help to preserve the environmental benefits of forests |
| | Comparative review of the evolution of scientific bases for management of tropical production forests in different contexts | Special feature in scientific journal (RN) | Scientific community, IUFRO | Shift in some scientific bases for management of production forests through alternations in research priorities | More effectively targeted research contributes to more sustainable forest management with attendant environmental benefits |
| Output Targets 2010 | Comparative analysis of silvicultural and management systems harmonizing timber and non-timber production in humid tropical forests | Monograph on timber production and non-timber resources management in South-East Asia (YL,RN and partners)<br>Global overview of status and trends on integration of timber and NTFP extraction (book chapter, MG)<br>Scientific articles on compatibility of timber extraction and production / conservation of other forest goods and services | Forest policy makers, scientific community, forest managers | Multi-resource forest management plans requested by policies and implemented by companies | Optimised and more sustainable use of tropical production forests in the tropics, with attendant environmental benefits |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| | | (MG, RN, PS, YL…)<br>Policy brief(s) (team and ISG)<br>(FORENET, REAFOR, SIDA projects) | | | |
| | Multi-stakeholder assessment on training and education needs on multiple-use forest management for the American tropics with an emphasis on NTFPs | Scientific article on emerging training and education needs of NTFP management for the Neotropics with considerations of timber integration (MG)<br>Policy brief (MG) | Academic community, national and regional forestry programs, donor agencies | NTFP and multiple use forest management training and education in the Latin American region that more effectively builds management capacity. | Sustainability of NTFP extraction and management enhanced in the context of multiple use forestry. |
| Output Targets 2011 | Analysis of status and trends (management, informal sector, NTFPs, contribution to livelihoods) of forests and forestry in the Congo Basin in 2010 | State of forests 2010 (RN other CIFOR staff as requested and partners)<br>Interactive website (project team)<br>(FORAF project) | COMIFAC, National governments, forestry departments, multilateral donors, certification bodies, scientific community, local and international NGOs | Better and more transparent monitoring of the state of forests in Congo Basin by stakeholders | Optimised and more sustainable use of tropical production forests in Central Africa, with attendant environmental benefits |
| | Review of the state of the art of multiple-use forest management for tropical production forests | Proceedings of the workshop (MG, RN and partners)<br>Three regional reports of integrated approaches of SFM in the tropics (consultants)<br>2 symposiums in IUFRO 2010 (MG, RN and others) | ITTO, CPF, scientific community, governments, forestry departments, forest managers, communities and others involved in management of productions forests | The scientific, practitioner and policy communities are better informed about tradeoffs and opportunities in integrated timber and NTFP management, so that best practices are more widely adopted | Improved sustainability of production and greater employment opportunities in production forests due to better profitability |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2012 | Approaches and tools to integrate wildlife management (both for conservation and consumption purposes) in logging concessions in the Congo Basin | WFC 2009 event (NV, RN)<br>Symposium in IUFRO 2010 event (MV, RN)<br>Report on tools and methods on:<br>- efficient wildlife survey methods;<br>- efficient ways to monitor bushmeat trade and consumption within logging concessions<br>- innovative methods for the analysis of survey and monitoring data;<br>- analysis of the social/economical/ecological acceptability of different management measures | Logging companies<br>NGOs<br>Consultancy groups in charge of sustainable management plans for logging companies<br>Ministries of Forestry<br>Certification bodies | Logging concessions, NGos, consultancy groups and governements implement improved wildlife management in logging concessions, paritially as a result of the inclusion of wildlife in certification standards. | The most appropriate species are sustainably used as source of protein and income for local communities living inside concessions, improving the nutrition of the poor.<br>Logging concessions better contribute to the protection of the most vulnerable animal species |
| Output 3: | Tools and methods to resolve conflicts about land use and resource rights in the use of tropical production forests | | Companies, development and environmental NGOs, local communities, local and national governments, educational institutions | Strategies for more equitable distribution of benefits adopted by NGOs, government and companies<br>Local values considered by companies in management and harvesting practices | Enhanced benefits and reduced detrimental effects for local communities from the use of production forests |
| Output Targets 2009 | Lesson learned from the identification of local peoples' perceptions and values attached to production forests in use right conflicts | Papers on methods and tools<br>Synthesis paper on what matters for local people in production forests?<br>( MB, NL, MP, IB, DS) | Scientific community, local governments, Development NGOs, ministries of forestry, timber concessionaires | Improved integration of local perceptions and values into decisions for the management of production forests | Fewer unnecessary land use or resource use conflicts in production forests |

| | *Outputs* | *Verifiable Indicators of Output Targets* | *Intended Users* | *Outcome* | *Impact* |
|---|---|---|---|---|---|
| Output Targets 2010 | Case studies on lessons learnt about local governance arrangements that effectively harmonize traditional management of resources important for local livelihoods with commercial extraction in production forests | Gabriel Medina's papers (3 on Amazonia)<br>Review paper of multiple-use forest management systems and forestry policy frameworks C Africa (VI, GL, PC, AA - Beyond timber CBFF ) | Local governments, Development NGOs, ministries of forestry, timber concessionaires, local communities | U nderstanding of relative importance of NTFP and other income sources in the context of multiple use forest managemet | Fewer unnecessary land use or resource use conflicts in production forests |
| Output Targets 2011 | Synthesis and lessons learned regarding the value of production forests to livelihoods and culture of local people (including gender disaggregated analysis), with special emphasis on the contributions of local knowledge to more sustainable forest management | Literature review document (CC)<br>Scientific article<br>Inventories and habitat assessment for key forest resources, and ecological, nutritional, and genetic data for selected food species in C.Africa (VI, VI, GL, PC, AA -Beyond timber CBFF)<br>Role and contribution of multiple-use forest management models to increase equity and capitalize on forest benefits (GL, VI,Beyond timber CBFF) | Local governments, Development NGOs, ministries of forestry, timber concessionaires, local communities | Use of lessons learned by companies in the development of their management plans in order to reduce conflicts with local communities about cultural values | Fewer unnecessary land use or resource use conflicts in production forests |
| Output Targets 2012 | Identification of effective approaches to strengthen local communities' and women's capacity to resolve conflicts and manage production forests in ACP countries | Manual describing approaches that work<br>One or more articles<br>Policy brief(s)<br>(FORENET; RN) | Communities, local governments, development NGOs, policymakers, forest managers, companies | Use of the manual by NGOs, local government and companies in their community work<br>Strengthened local forest communities and increased participation in the management of production forests | Reduced conflicts and improved employment opportunities, incomes and other benefits to local people from better capacity to manage production forests |

## Annexes

### *Annex 1: Progress report on implementation of CGIAR approved EPMR recommendations*

| RECOMMENDATION | CIFOR Response | Implementation | | |
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| | | Milestones | Progress Achieved | Target Date of Completion |
| 1. After the new Director General is in place, a CIFOR strategy be developed through a consultative and participatory process that builds on its current strengths and brings staff and management together with key stakeholders to agree on shared vision, mission, values and strategic goals. | AGREED. Timing right for a systematic and inclusive process to define the center's future direction. CIFOR waited for EPMR results before doing the strategy. A participatory process involving staff and external stakeholders will help to ensure that the new strategy has their full understanding and support. | • Consultations completed<br>• Background papers and reports of Task Forces<br>• Strategy approved by BOT | • Strategy developed and approved by BOT | Completed May 2008 |
| 2. As a first step towards a more transparent and systematic priority setting process, CIFOR needs to formally document its current practice better by developing an integrated framework that consolidates the steps followed at CIFOR for exclusion and inclusion of projects, giving a full description of criteria, quantitative or qualitative scoring and aggregation methods used. | AGREED. Current priority setting (PS) processes will be documented. Due to complexity of PS CIFOR will aim for a flexible system. Strategic planning will also help with PS | Document current practice for priority setting<br><br>Develop criteria for priority setting and engage programmes to select best option<br><br>Apply criteria | Achieved during Strategy process | End 2007 |
| 3. CIFOR review its resource allocation processes in order to use objective information to support the rationale for decisions on quantitative allocations of research funds between Programmes and regions, and ensure consistency in resource allocations with the Centre's approved strategic priorities and related BOT decisions. | AGREED. Rec. linked to 1 and 2. Decisions about resource allocation should link to strategic priorities and BOT decisions. | Identified research priorities<br><br>Agreed process to link priorities to allocations | In the budgeting process for 2008 a new system for allocating research funds was introduced to encourage cross programmatic collaboration. This system is aligned with the new research domains approved by the BOT. | 2008 |

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| 4. Programme objectives be refined jointly rather than individually, in full consultation with major stakeholders and staff, in order to minimize duplication and use effective mechanisms and incentives to enhance synergies among the Programmes. | AGREED. Need to avoid duplication. Strategy process will include revisions to programme objectives. Some overlaps might be necessary but CIFOR has taken steps to encourage synergy between Progs. | New strategy document | Addressed through new center strategy. Retreats were held for all domains and this was the process for jointly defining research goals, themes, impact pathways and geographic focus. | May 2008 |
| 5. CIFOR's Programmes and Projects, in their diagnosis, design and implementation, increase attention to gender, especially in regard to poverty alleviation | AGREED.<br><br>inventory of all its existing activities with significant attention to women and gender; ensuring that gender issues get adequate attention in the formulation of CIFOR's new strategy, checking project proposals to make sure they adequately address aspects related to gender, and making greater efforts to highlight and disseminate CIFOR's research on gender. | Conduct Inventory of Gender<br><br>Background analysis on gender issues in forestry research<br><br>Consider appropriate opportunities for gender focus in the research portfolio that emerges from the new strategy | CIFOR with FAO looking at mainstreaming gender issues in forestry<br><br>Attention to gender is being incorporated into a proposal checklist<br><br>MOU with Women Organizing for Change in Agriculture and Natural Resource Management was signed.<br><br>Cooperation with the Participatory Research and Gender Analysis CGIAR Systemwide Program (for assistance in ensuring that gender is addressed in the research portfolio | 2008<br>Linked to strategy<br><br>This is on-going linked to proposal development and project implementation |
| 6. In the absence of rigorous technical quality review of research proposals by donor or grant agencies, appropriate peer reviews of all proposals/study plans be undertaken prior to approval by Programme Directors. | AGREED.<br>CIFOR will seek to improve its approach to reviewing the scientific quality of its research proposals. Attention will be given to larger projects | Criteria for assessing proposal quality and relevance<br><br>Endorsement of criteria | Management discussed this item at its Management group Meeting in March 07 as part of its new norms for proposal development.<br><br>Criteria for reviewing project proposals are included in the centre's strategic alignment plan. | May 2008 |

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| 7. CIFOR establish a policy and develop protocols for research data quality control and assurance to be applied to all of its field research projects. | AGREED. CIFOR will review its current practices regarding how it ensures the quality of its research data and establish an appropriate center-wide policy and associated protocols. | Develop data storage, access, and metadata standards | A research data policy was developed, which is intended to clarify roles and responsibilities for the proper management of research data at CIFOR, including quality control, documentation, sharing, archiving and adherence to IPR and privacy standards. | 2007, implementation ongoing |
| 8. Programme Directors and scientists be strongly encouraged that, of the research publication effort aimed at the global forest science community, a greater share be focused on higher-impact refereed journals, rather than publishing in lower impact and non-refereed journals. | AGREED.<br>For global science community, the center will strive harder to publish in more prestigious journals<br><br>A substantial share of its publications will be readily available to developing country researchers, policy makers and forestry practitioners. | Review adequacy of current performance contracts' incentives for peer reviewed publication | As part of the CGIAR Performance Measurement, CIFOR reports annually on publications including those listed in the Thomson Scientific ISI.<br><br>CIFOR has revised its publications policy to reflect the need to publish in high impact journals | 2008 |
| 9. CIFOR's Board adjust its procedures as necessary to ensure that its Finance and Audit Committee can carefully review the audited financial statements with the External Auditor before consideration by the full Board.<br>• The Panel further recommends that the Board actively seek to add to its membership someone with substantial accounting and financial management expertise. | AGREED | Board add appropriate individual(s); Board review Audit Committee procedures | Done | 2006 |

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| 10. In accordance with its Capacity Building Strategy, CIFOR prepare monitoring and evaluation guides for measuring the effectiveness and impact of its capacity building activities, improve capacity building management processes, and that Senior Management increase their commitment to capacity building. | AGREED.<br><br>CB within CIFOR should and will get special attention in the formulation of the center's new strategy and in the decisions it makes regarding regional offices. | Capacity building component of new strategy; | Management has included this as part of its strategic action plan.<br><br>A draft CB monitoring tool is being developed | 2009 |
| 11. Internal policy be developed that includes incentives and opportunities to strengthen capacity of its own researchers and support staff | AGREED<br>The centre has encouraged junior staff to attend workshops, has supported writing skills training and encouraged staff to get higher degrees. Since these activities require scarce unrestricted funds, it is unlikely the center will be able to greatly increase the resources available for them. | Draft policy for discussion with all staff<br><br>Submit policy to BOT for formal approval | • This issue has also emerged in a staff perception survey conducted in 2006<br>• Management has developed a staff development plan focusing on development of national research capacity. | 2008 |
| 12. CIFOR become more proactive in identifying strong women candidates for future staff vacancies. | AGREED. CIFOR will assess options for career development for more junior women scientists. It will formalize the existing practice of including women on all interview panels, and will consult the CGIAR Gender and Diversity Program on ways to improve its approach to recruitment | Improved recruitment practices to encourage qualified women to apply for new openings | On-going<br><br>CIFOR appointed a female DG in 2006. | On-going |
| 13. CIFOR develop a policy and clear standards regarding ownership and archiving of research data.<br>• The Panel further recommends that CIFOR establish a records management system. | PARTIALLY AGREE. CIFOR already has a clear policy that all data produced by staff and consultants belong to the organization.<br><br>CIFOR will develop a records management strategy, with particular emphasis on electronic records management, | Introduce revised version of Research tracking system<br><br>Prepare draft policy and standards on research data ownership and archiving<br><br>Prepare a records management strategy | Research Data Policy has been developed and CIFOR is participation in a system-wide initiative to implement a research management system. | 2008 |
| 14. CIFOR work with other CGIAR centers, in consultation with the Science Council, to take appropriate measures to institute appropriate modalities for a predictable | AGREED. It is increasingly difficult to set priorities and conduct rigorous strategic research designed to achieve impact with a reliance on restricted funding. | Discussions with the Alliance Executive in examining how the system is funded | On-going<br>This is also embodied in CIFOR's participation in the CGIAR Change Management process, which | Ongoing |

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| funding environment for centers. | | | is intended to help improve the stability of CGIAR funding through a new central fund. | |
| 15. Further clarification of the objectives of the Regional Offices, the respective roles of Regional Coordinators and Programme Directors, and an effort towards harmonization of Programme objectives and regional strategies.<br>• The Panel further recommends that the Regional Coordinators have adequate authority and resources to fulfill their Terms of Reference. | AGREED. CIFOR accepts that regionalization is complex, involves inherent tensions and poses substantial risks for the institution and that many aspects still have to be clarified and worked out.<br><br>The global programs remains the central mechanism for making programmatic decisions and supervising scientific staff.<br><br>CIFOR's new strategy will address many of these issues | Strategy process clarifies structure for delivering CIFOR's programme | CIFOR's new strategy clarifies when and where regional offices will be established as well as the roles of regional coordinators and programme directors in fund raising and research planning and implementation.<br><br>The funding for regional offices has been clarified and will be included in an new budgeting system. | Started in2007 and finalised in 2008 |
| 16. CIFOR proactively monitor and evaluate the progress of the regionalization process in order to avoid conflicts among Regional Coordinators, Programme Directors, and regionally based staff, and to further assess the feasibility of establishing and maintaining the planned number of Regional Offices. | AGREED | Number of regional offices will be reviewed as part of strategy process<br><br>Undertake a CCER in 2009<br><br>Discussions and audit reports – constraints and what is working | • No new regional offices are planned.<br>• Clear criteria have been developed on expectations of regional offices.<br>• The regional office in Brazil was downgraded to a project office.<br>• Any regional or project office establishment will be driven by strategic needs in line with new research domains and potential to achieve impact. | 2008 |

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| 17. CIFOR devote more effort in its project and strategic planning to clearly identify and assess impact pathways in ways that are more closely linked to the CGIAR poverty priority and its own objectives. | AGREED. Attention will be given to this in the context of its new strategy. CIFOR has recently hired a new scientist responsible for impact assessment, who will support the efforts to identify and assess impact pathways. | New strategy and associated priority-setting procedures | CIFOR's new strategy defines impact pathways for each of its six research domains.<br>At the 2008 CIFOR annual meeting, each of the research domains/projects had sessions dedicated to defining intended impact pathways in increased detail. | End of 2008 |

## *Annex 2: Acronyms*

| | | |
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| ACP | : | Africa Caribbean-Pacific |
| ADB | : | Asian Development Bank |
| AFB | : | African Development Bank |
| AFP | : | Asian Forest Partnership |
| AI | : | Amazon Initiative |
| AIC | : | Australian Institute of Criminology |
| ANU | : | Australian National University |
| APEC | : | Asia-Pacific Economic Cooperation |
| ASB | : | Alternatives to Slash and Burn Consortium |
| ASEAN | : | Association of Southeast Asian Nations |
| ASrIA | : | Association for Sustainable and Responsible Investment in Asia |
| BOT | : | Board of Trustees |
| CARE International | : | Cooperative for Assistance and Relief Everywhere |
| CATIE | : | Centro Agronómico Tropical de Investigación y Enseñanza |
| CBD | : | Convention on Biodiversity |
| CBNRM | : | Community-Based Natural Resources Management |
| CEESP | : | The IUCN Commission on Environmental, Economic and Social Policy |
| CEMAC | : | Economic and Monetary Community of Central Africa |
| CFET | : | Center for Forestry Education and Training |
| CGIAR | : | Consultative Group on International Agricultural Research |
| CI | : | Conservation International |
| CIAT | : | International Centre for Tropical Agriculture |
| CIDIAT | : | Centro Interamericano de Desarollo e Investigacion Ambiental y Territorial |
| CIFOR | : | Center for International Forestry Research |
| CIRAD | : | Centre de coopération internationale en recherche agronomique pour le développement (Agricultural Research for Developing Countries) |
| CLI | : | Country Led Initiative |
| COMESA | : | Common Market for Eastern and Southern Africa |
| COMIFAC | : | The Central African Forest Commission |
| COP | : | Conference of Parties |
| CPF | : | Collaborative Partnership on Forests |
| DED | : | Deutscher Entwicklungsdienst |
| DFID | : | Department for International Development |
| DNEF | | Direction Nationale des Eaux et Forets |
| DRC | : | Democratic Republic of Congo |
| DWAF | : | Department Water Affairs and Forestry |
| EC | : | European Union |
| EMBRAPA | : | Empresa Brasileira de Pesquisa Agropecuária |
| ENV | : | Environmental Services and Sustainable use of Forests Programme |
| EPFZ | : | Swiss Federal Institute of Technology |
| EPMR | : | External Programme and Management Review |
| FAO | : | Food and Agriculture Organization of the United Nations |
| FATF | : | Financial Action Task Force |
| FLEGT | : | Forest Law Enforcement, Governance and Trade |
| FOEN | : | Federal Office for the Environment |
| FORDA | : | Forest Research and Development Agency |
| FRM | : | Forêt Ressources Management |
| FSC | : | Forest Stewardship Council |
| FSC Bra | : | Forest Stewardship Council Brazil |

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| FSC Cam | : | Forest Stewardship Council Cameroon |
| FSC IC | : | Forest Stewardship Council International Center |
| FSIV | : | Forest Science Institute of Vietnam |
| G-8 | : | Group of Eight (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States) |
| GEF | : | Global Environment Facility |
| GFIS | : | Global Forestry Information System |
| GTZ | : | German Agency for Technical Cooperation |
| ICDP | : | Integrated Conservation and Development Project |
| ICRAF | : | World Agroforestry Centre |
| IHSA | : | Institute Hukum Sumber Daya Alam |
| IIED | : | International Institute for Environment and Development |
| IITA | : | International Institute for Tropical Agriculture |
| INIA | : | Instituto Nacional de Investigacióny Tecnologia Agraria y Alimentaria |
| IPB | : | Bogor Agricultural University |
| IPCC | : | Intergovernmental Panel on Climate Change |
| IPGRI | : | International Plant Genetic Resources Institute |
| IPGs | : | International Public Goods |
| IRD | : | Institut de Recherche pour le développement |
| IRET/CENAREST | : | Institut de Recherches en Ecologie Tropicale |
| IRRI | : | International Rice Research Center |
| ISO | : | International Organization for Standardization |
| ITTA | : | International Tropical Timber Agreement |
| ITTO | : | International Tropical Timber Organization |
| IUCN | : | International Union for the Conservation of Nature |
| IUED | : | Institute of Development Studies |
| IUFRO | : | International Union of Forest Research Organizations |
| IWGFF | | Indonesian Working Group on Forest Finance |
| IWMI | : | International Water Management Insitute |
| Jikalahari | | Jaringan Kerja Penyelamat Hutan Riau |
| JRC | | Joint Research Center of the European Commission |
| KfW | : | Kreditanstalt für Wiederaufbau |
| LAMIL | : | Landscape Management for Improved Livelihoods |
| LIPI | : | Indonesian Institute of Science |
| LIV | : | Forests and Livelihoods Program |
| MDGs | : | Millennium Development Goals |
| MEA | : | Millennium Ecosystem Assessment |
| MERCOSUR | : | Common Market of the South |
| MOP | : | Meeting of Parties |
| MOU | : | Memorandum of Understanding |
| MSc | : | Master of Science |
| MTP | : | Medium Term Plan |
| NAFRI | : | National Agricultural and Forestry Research Institute |
| NARIs | : | National Agricultural Research Institutions |
| NARS | : | National Agricultural Research System |
| NASA | | National Aeronautics and Space Administration |
| NGOs | : | Non-Governmental Organizations |
| NTFP | : | Non-Timber Forest Product |
| ODI | : | Overseas Development Institute |
| PAR | : | Participatory Action Research |
| PAs | : | Protected Areas |
| PCLG | : | Poverty Conservation Learning Group |
| PEFC | : | Programme for the Endorsement of Forest Certification |

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| PEN | : | Poverty Environment Network |
| PEP | : | Poverty Environment Partnership |
| PES | : | Payment for Environmental Services |
| PNG FRI | : | Forest Research Institute of Papua New Guinea |
| PRSPs | : | Poverty Reduction Strategy Papers |
| PSWS | : | Phnom Samkos Wildlife Sanctuary |
| RECOFTC | : | Regional Community Forestry Training Center for Asia and the Pacific, Thailand |
| RED | : | Reduced Emissions from Deforestation |
| REDD | : | Reduced Emissions from Deforestation and Degradation |
| REL | : | Reference Emission Levels |
| RFF | : | Resources for the Future |
| RIL | : | Reduced Impact Logging |
| RRI | : | Rights and Resources Initiative |
| SBSTA | : | Subsidiary Body for Scientific and Technological Advice |
| SFM | : | Sustainable Forest Management |
| SP | : | System Priority |
| TNC | : | The Nature Conservancy |
| UCL | : | Université Catholique de Louvain |
| UK | : | United Kingdom |
| ULA | : | Universidad de Los Andes |
| UN | : | United Nations |
| UNEP | : | United Nations Environment Programme |
| UNFCCC | : | United Nations Framework Convention on Climate Change |
| UNFF | : | United Nations Forum on Forests |
| UNILA | : | University of Lampung |
| USA | : | United States of America |
| USAID | : | United States Agency for International Development |
| WALHI | : | Wahana Lingkungan Hidup (Friends of the Earth Indonesia) |
| WB | : | World Bank |
| WCS | : | Wildlife Conservation Society |
| WHO | : | World Health Organization |
| WHRC | : | The Woods Hole Research Center |
| WOCAN | : | CIFOR and Women Organizing for Change in Agriculture and Natural Resource Management |
| WRI | : | World Resources Institute |
| WRM | : | World Rainforest Movement |
| WWF | : | World Wide Fund for Nature |

## *Annex 3: CGIAR System Priorities*

**Priority area 1: Sustaining biodiversity for current and future generations**

Priority 1A: Conservation and characterization of staple crops
Priority 1B: Promoting conservation and characterization of under-utilized plant genetic resources to increase the income of the poor
Priority 1C: Conservation of indigenous livestock
Priority 1D: Conservation of aquatic animal genetic resources

**Priority area 2: Producing more and better food at lower cost through genetic improvements**

Priority 2A: Maintaining and enhancing yields and yield potential of food staples
Priority 2B: Tolerance to selected abiotic stresses
Priority 2C: Enhancing nutritional quality and safety
Priority 2D: Genetic enhancement of selected high-value species

**Priority area 3: Reducing rural poverty through agricultural diversification and emerging opportunities for high-value commodities and products**

Priority 3A: Increasing income from fruit and vegetables
Priority 3B: Income increases from livestock
Priority 3C: Enhancing income through increased productivity of fisheries and aquaculture
Priority 3D: Sustainable income generation from forests and trees

**Priority area 4: Poverty alleviation and sustainable management of water, land, and forest resources**

Priority 4A: Integrated land, water and forest management at landscape level
Priority 4B: Sustaining and managing aquatic ecosystems for food and livelihoods
Priority 4C: Improving water productivity
Priority 4D: Sustainable agro-ecological intensification in low- and high-potential areas

**Priority area 5: Improving policies and facilitating institutional innovation to support sustainable reduction of poverty and hunger**

Priority 5A: Science and technology policies and institutions
Priority 5B: Making international and domestic markets work for the poor
Priority 5C: Rural institutions and their governance
Priority 5D: Improving research and development options to reduce rural poverty and vulnerability