



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Monitoring, Evaluation, and Impact Assessment Strategy for CRP6 (2012 – 2016)

Forests, Trees and Agroforestry: Livelihoods, Landscapes
and Governance



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Cover photo by Ollivier Girard/CIFOR
Camille Dehu interviews Mama Odette in her house in Ngon village, Ebolowa, Cameroon.

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1. Introduction

Consortium Research Program 6 on “Forests, Trees and Agroforestry: Livelihoods, Landscapes and Governance” (CRP6) is an integrated global research initiative that aims to enhance the management and use of forests, agroforestry and tree genetic resources as a way to improve livelihoods and sustain environmental values. It is an ambitious program, with attention to a wide range of topics, from small-scale production technologies through to international trade and global conventions, with multiple partnerships, and with a diverse set of strategies to achieve impact. The program itself is an experiment. It will test methods, approaches, partnerships, and engagement strategies, seeking the most effective means of achieving positive change. Therefore, the program requires an effective and innovative system to monitor, to evaluate and to assess the impact of its work. The CRP6 monitoring, evaluation and impact assessment (MEIA) system is designed to:

- encourage an “impact culture” within CRP6 in which research and related activities are explicitly defined, designed and implemented to contribute to transformative change
- ensure that CRP6 work remains relevant and useful in a rapidly changing world
- guide ongoing research and engagement to maximize effectiveness
- help CRP6 learn from its own experience about what works best and how to focus, design and manage research and engagement in the future
- provide evidence that CRP6 work is effective and that investments in the program produce competitive returns
- contribute to the global evidence base on returns to investments in natural resources management research, capacity strengthening, and communications for poverty alleviation and environmental sustainability

This document describes the overall monitoring and evaluation framework for CRP6. It presents the context of CRP6 within the larger CGIAR system; it outlines the challenges inherent in evaluating natural resources management research; it provides an overview of the impact pathway model used by CRP6, and; it presents the strategies for monitoring, evaluation and impact assessment, with emphasis on the integration and streamlining of these functions.

2. CGIAR and CRP6 context

In its Strategy and Results Framework (SRF), the new CGIAR Consortium has defined four system level outcomes which shape the direction of the research it conducts. These are:

1. Reducing rural poverty. Agricultural growth through improved productivity, markets and incomes has shown to be a particularly effective contributor to reducing poverty especially in the initial stages of development;
2. Improving food security. Access to affordable food is a problem for millions of poor people in urban and rural communities and it requires increasing global and regional supply of key staples and containing potential price increases and price volatility;
3. Improving nutrition and health. Poor populations suffer particularly from diets which are insufficient in micronutrients affecting health and development, particularly in women and children;
4. Sustainable management of natural resources. Agriculture demands better management of natural resources to ensure both sustainable food production and provision of ecosystem services to the poor, particularly in light of climate change.

CRP6 will primarily contribute to reduce rural poverty (System Level Outcome 1), increase food security (SLO 2) and more sustainable management of natural resources (SLO 4), but research will also contribute, to a lesser extent, to improve nutrition and health (SLO 3). Finally, CRP6 will contribute to meeting explicit gender and capacity building related goals of the Consortium.

The SRF notes that for research to contribute to such aims, an approach is required that includes: a results-oriented strategy that sets directions and outcomes; management decisions and resource allocations that align with strategic outcomes; program performance indicators that target clients and beneficiaries and measure improvements in the livelihoods of beneficiaries, and; indicators that are used as signals to motivate staff and provide a base for learning and improving.

The CGIAR uses an “impact pathways” approach, which assumes that project inputs (financial, human and material resources) are used in a range of activities (the tasks undertaken to transform inputs into outputs) that generate research outputs (new/changed knowledge, materials, technology, policy options and capacity) that contribute to research outcomes (reflecting the uptake and immediate use of the research outputs) and system level outcomes (changes in the social, economic and bio-physical environment environment). Hereafter, to avoid confusion in terminology, we use the term ‘impacts’ to refer to the system level outcomes, as this term is consistent with terminology used by other organizations and within the CGIAR, for example by the GRiSP monitoring and evaluation strategy. CGIAR researchers are fully accountable for generating research outputs. In a change from the past, CGIAR researchers are also now co-responsible with partners for the achievement of research outcomes. Lastly, CGIAR researchers are engaged with institutions which are scaling up research outcomes to contribute to achieving the intended impacts.

3. The Challenge of Evaluating NRM Research

CRP6 is complex, with multiple pathways to impact at the component and theme levels. It is intended that the main research products will be international public goods: knowledge, technology, and institutional and policy innovations that are relevant and useful throughout the tropics and beyond. Much of the research will be grounded in case studies and comparative analyses. This research is also expected to contribute to positive change by helping to address constraints and realize opportunities directly in the countries, sites and systems where the research is carried out. CRP6 intends to contribute to achieving impact by: influencing global and national research and development agendas; giving due attention to the needs of all stakeholders (gender, diversity issues); developing new research approaches and methods; networking and coordinating with other actors in the knowledge-to-action process, and; helping to strengthen the capacity of developing country institutions and individuals to generate and apply knowledge more effectively.

Figure 1 shows the basic impact pathway envisioned for CRP6, with the main types of research outputs by component, the key impact strategies, generic outcomes (primarily system-level outcomes) and intended CRP6 impacts that will contribute to meeting SRF objectives.

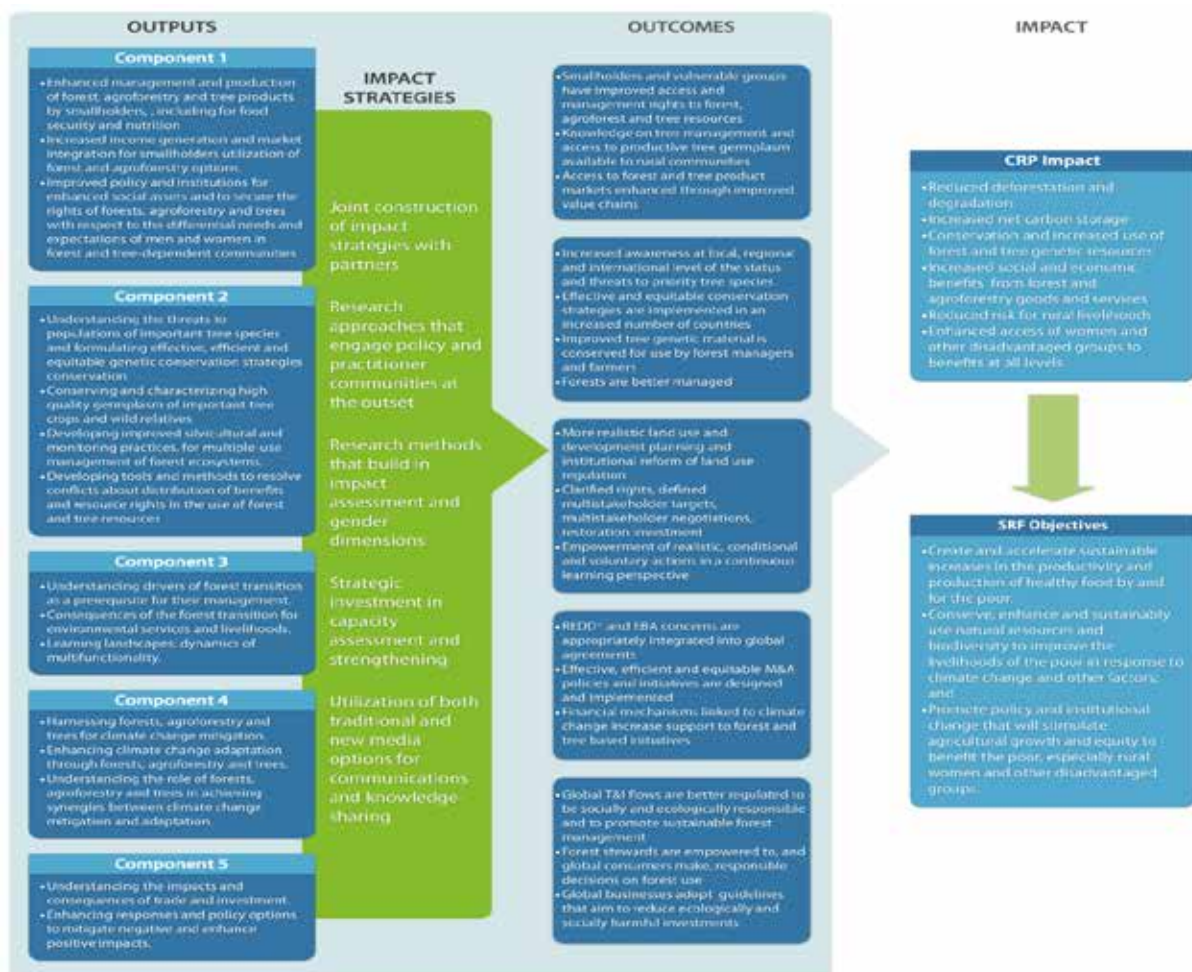


Figure 1. CRP6 Schematic Impact Pathway

In fact, with the broad and diverse range of research undertaken within CRP6, there are long and complex impact pathways. Rather than the simplified linear impact pathway described above, we anticipate multiple pathways or webs, with many actors involved and multiple scales of influence and impact. Impacts will be achieved through effective research/partnership processes and through high quality research products. In any science-for-development programme, but perhaps increasingly so in a complex and multi-pronged programme such as CRP6, unintended consequences – outcomes and impacts – may occur. These could either be positive or negative and it is important that the monitoring system be sensitive both to intended and unintended changes. A program can influence outcomes through its partnerships and communications activities. CRP6 recognizes this and actively seeks to engage a broad range of partners to help achieve positive outcomes. Many other factors also influence outcomes and, ultimately, impacts. All social and environmental change takes place in dynamic environments with multiple causes. Any effort to attribute impacts to particular interventions must be made with caution. As an example, CRP6 will devote substantial resources to research that aims to influence climate change negotiations and policy development (Component 4). However, this is a highly political process, and it is impossible to control or to predict how the process will unfold or even the extent to which evidence-based information will be used. Moreover, CRP6 will have manifold impact pathways, at several scales. The program will help to bring about on-the-ground changes at its research sites through to large-scale changes effected by influencing policy and practice at national and international levels. There will also be multiplier effects through capacity building, methods development and agenda setting.

Also complicating efforts to measure impact is the difficulty of generating counterfactual information -- the situation that would exist in the absence of the program. At a small (project) scale, it may be possible to use a controlled or quasi-experimental design where similar sites outside the project intervention zone may be used as controls but, at the scale that CRP6 operates, counterfactual information can often only be estimated. This is particularly true when conducting research in large landscapes or at national and international policy levels. A recent study commissioned by DFID (2012) on “Broadening the range of designs and methods for impact evaluations” recognizes the difficulties of evaluating activities that have complex, indirect causal chains, multiple-partnerships (like CRP6 research). The authors examined a series of development program evaluations and found that, although the majority of impact evaluation has been done using a narrow range of experimental and statistical designs, those designs are really only applicable in a small proportion of cases and it recognizes the need for further development and testing of designs and methods for monitoring and evaluation, as a valid research activity.

As noted by Douthwaite *et al* (2003), the dominant paradigm in the CGIAR has been a positivist paradigm, based on repeatable and quantifiable experiments. Many of the products of research have been delivered in the form of embedded technologies, primarily as improved planting materials and related production technologies. The main outcome is that farmers adopt the technologies and, as a result, are able to increase their productivity and overall production. The development and widespread adoption of high yielding crop varieties has been a major accomplishment of the CGIAR system. It is relatively straightforward to estimate the gains realized through such interventions, and impact assessment in the system has overwhelmingly focused on quantifying production improvements in economic terms.

CRP6 includes some technological research (notably in Component 1), but the main focus of the program is on analyzing and supporting the improvement of institutions and policies, at a range of scales. The impact pathway for this research, as with other natural resource management and policy oriented CRPs, works more within a social constructivist paradigm, with an active learning process in

which the users of research products fit new information into their existing ways of understanding and managing (Douthwaite *et al* 2003). Within this model, research publications in peer-reviewed journals, for example, are important research products, but they are only one of many kinds of products and processes that are needed to affect change.

Douthwaite *et al* (2003) provide a conceptual framework which emphasizes the scaling up and scaling out of CGIAR research, with the primary attention to innovation and change at the local (farmer and farmer groups) level. Interventions focus at local and national levels with the aim to improve opportunities and support the adoption and spread of innovations. CRP6, and other policy oriented CRPs, intend to provide information, analysis, and recommendations, and to support processes that will lead to change at several levels of decision making, including international conventions and policies, policies and programs of national governments, and national and international conservation and development organizations, as well as by supporting innovation at the local level. The multi-level intervention focus is illustrated in figure 2.

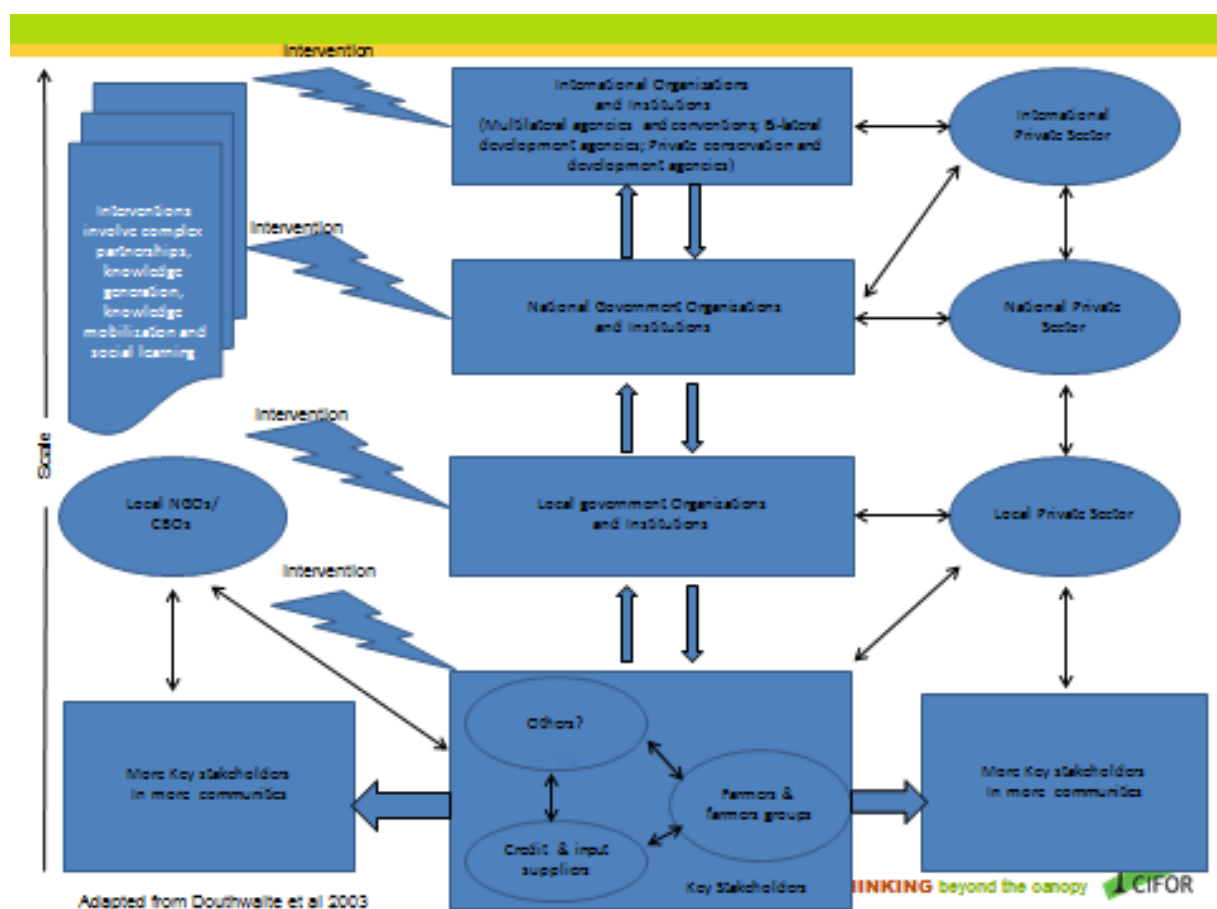


Figure 2.

Moreover, unlike for the main agricultural commodity systems, there is still limited understanding of the role and the potential of forests, trees and agroforestry systems to maintain or improve rural livelihoods or to contribute to meeting conservation objectives. There is a wide range of species and products, of markets, and of the institutions that govern forest and tree production, processing and marketing, and there is still an acute need for analyses and diagnoses of the constraints and opportunities within a wide range of systems.

CRP6 will contribute to change through the research and partnership process, networking, and the delivery of information, analysis and technologies (research products). Research approaches will engage policy and practitioner communities at the outset as a way to focus research on relevant, high priority problems, to engage the intended research users early in the process and to joint construction of impact strategies with partners. Research methods will build in evaluation/learning and gender dimensions. There will be strategic investment in capacity assessment and strengthening, and use of traditional and new media options for communications and knowledge sharing.

For these reasons, CRP6 MEIA will build on the impact pathway approach. It will monitor and assess outcomes and progress indicators and seek evidence and plausible arguments that those outcomes have contributed to impacts. In this model, we need to consider research outcomes in more detail. We follow the Outcome Mapping approach developed by IDRC (Smutylo 2001, 2005) and the Participatory Impact Pathways Analysis (PIPA) approach (Douthwaite *et al* 2008; PIPA Wiki). In Outcome Mapping, outcomes are defined as “changes in the behaviour, relationships, activities, or actions of the people, groups and organizations with whom a program works directly (Earl, Carden and Smutylo 2001).” This corresponds well with the CGIAR’s “research outcomes”. Outcome Mapping focuses attention on influence and behavioural change within partners that relate directly to a project or program. The CGIAR recognizes research outcomes as changed behavior by any beneficiary of its outputs, not only those that worked directly with the program. It is intended that knowledge generated will be internationally relevant and valuable. To illustrate this difference, assume that the use of a new methodology for measuring carbon is identified as a key outcome from a project operating in four countries. If organizations in those four countries then use the new method in the future, a clear research outcome has been achieved. If the methodology is then used by other countries, the CGIAR also recognizes that uptake as an outcome attributable to CGIAR research. In the new SRF, the CGIAR should be co-engaged in the wider adoption and use of its outputs, but such processes can also take place with minimal involvement of the CGIAR.

Those individuals and organizations that the program works directly with and aims to influence are called “boundary partners” in Outcome Mapping terms and “Actors” in PIPA (Douthwaite 2008). The program intends that those research outcomes will lead to impacts, beyond the direct influence of the program. These will be manifest as changes in general practice, institutions, policy and capacity. For example: an international agreement is reached or national policies are adopted that will encourage forest conservation or improved livelihoods; improved germplasm is taken up by commercial nurseries and made available to farmers, or; an international conservation organization implements a new approach in its programming designed to protect local people’s access to forest resources in their project areas. Such outcomes (unlike outputs), are only partially attributable to the program; there are other changes taking place and other factors that also contribute. And even positive outcomes are no guarantee of positive impacts. CRP6 research operates in a complex environment and it is necessary to monitor whether and how the research products, and the process itself, are contributing to social learning and positive changes.

The Outcome Mapping method explicitly acknowledges that projects lack control over downstream impacts. The method therefore focuses on clearly identifying priority outcomes, and the behavioural changes among “Boundary Partners” that are expected to lead to those outcomes. Monitoring efforts are then focused on indicators of progress toward outcomes (called “progress markers”) and evaluation focuses at the level of outcomes.

4. The CRP6 MEIA strategy

The CRP6 MEIA strategy is intended to meet CGIAR requirements and standards effectively and efficiently. It is intended that the MEIA approach will encourage the development and testing of clear and explicit impact pathways and that it will foster a strong impact culture within CRP6. The CRP6 MEIA System will use a nested, hierarchical system, in which each element contributes to others. Explicit development of impact pathways, *ex ante* impact assessment and outcome mapping will support strategic planning at the project, theme and component levels; regular monitoring will provide feedback on ongoing work to facilitate adaptive management, it will provide information needed for annual reporting requirements, and it will be used as inputs for internal and external evaluation. Lower-level (project, theme) evaluation will support higher level (component, CRP) evaluation. And available M&E data and analyses will support the design, interpretation and implementation of impact assessments. It will use rolling 5 year plan, revised annually. It will be participatory and outcome-focused.

4.1. Explicit Impact Pathway Design

A first and fundamental step will be to develop clear and explicit impact pathways (aka outcome maps; theory of change) at the level of projects, themes and components.

The CRP6 proposal contains stylized impact pathways for each of the five components and for the CRP as a whole. These pathways represent the theoretical links between research outputs and research outcomes and between research outcomes and impacts. As such, they provide the rationale for the proposed research outputs. However, as they are framed in generic outcome language (i.e. lacking details on who, where, when), they do not provide sufficient guidance for research design. Moreover, the specific activities that CGIAR scientists may need to undertake with partners in order to generate research outcomes are not identified in the pathways; those activities and relationships are implied in the arrows connecting research outputs to research outcomes.

Components, themes and individual projects will be supported to elaborate and describe much more specific and detailed impact pathways using the Outcome Mapping approach and methods. They will also be guided to develop plans for outcome and performance monitoring, which will include progress markers and strategy maps. One member from the MEIA team will be assigned to each of the components to provide ongoing assistance in developing more explicit impact pathways and designing research activities to assess and revise them.

The proposed approach puts increased focus on outcomes as behavioral change, with more explicit appreciation and utilization of outcomes as part of defining, describing, understanding and analyzing impact pathways. There is an emphasis on outcome assessment because outcomes can be attributed more directly than impacts to CRP6 outputs. Moreover, outcomes are defined as milestones towards impacts and will be realized in shorter time frames. Since CRPs are to be evaluated each 5-6 years, it is vital that an outcome monitoring system be functional.

The process of mapping the impact pathways may be as or more important than the product. It is anticipated that by explicitly planning the impact pathway, researchers and partners will be better able to anticipate needs and opportunities for the research, and fine-tune the design of research, partnership and communications activities to achieve the intended outcomes more effectively. It is

highly recommended to make the process participatory, engaging the research team, partners and clients as a way to develop a more realistic and shared vision of the project/program and to facilitate feedback, learning and adaptive management. The process of developing and defining impact pathways involves partners and stakeholders working together to map how knowledge and research products will lead to the intended development goals. Constructing an impact pathway at the scale of an individual project might involve an extension agency that could encourage broad adoption, or staff from a donor-funded project working in the area that has related interests and resources for implementation. At the scale of a theme or a component, the research emphasis is more on comparative analysis and learning generic lessons about effective methods, practice and policy. At this scale, key partners include national and international organizations that need the kind of information and analysis the component will produce. Effective communication between the CRP6 team and these partners, and even joint implementation, is expected to increase the likelihood that the research will be relevant (informing research design) and that it will be used (facilitating uptake and implementation).

Identifying (and engaging) key partners and describing intended impact pathways will help to focus monitoring, evaluation and impact assessment activities. The essential idea is that each element of the program's work needs to be clear and specific about what results are being sought and what means will be used to achieve them, and then systematically collect information to assess and analyze progress. Well defined objectives and a clear understanding of, and engagement with, the stakeholders and institutions involved can lead to the identification of those transmission channels needed to trigger the results that we seek at different levels and time horizons to reach the ultimate objectives.

4.2. Priority assessment

4.2.1 Priority Setting

Although there is no mention of a formal priority setting process at the CRP level, prioritization appears multiple times in the different components. It is mentioned in the CRP6 proposal in the context of research issues, research regions, countries & sites and species.

At the CRP level, priority setting may be useful in resource allocation decisions, though the steering committee has adopted a process that does not include expected impact as a criterion.

At the component level, it will be important to use some objective priority setting methods in order to arrive at specific research locations which will best deliver the outcomes and impacts desired. This may include some *ex ante* impact assessment.

4.2.2 Ex ante impact assessment

Ex ante impact assessment within the CGIAR has focused predominantly on the use of quantitative methods. Such approaches are appropriate when they are used to assess well-defined technology interventions, with well-understood and well-defined impacts that are easily quantifiable. The comparison of different crop varieties for their effect on food production/consumption is an example where *ex ante* impact analysis has been commonly used. For CRP6, is expected to produce a range of livelihood and environmental impacts as part of complex, multi-causal impact pathways. Quantitative *ex ante* impact assessment is unlikely to be appropriate, except for specific technological innovations at the sub-component level.

Despite these challenges, it will be important for CRP6 to be able to anticipate potential impacts from research to link with Fund Council plans to develop a priority setting mechanism to assist with allocation of window 1 and 2 funds across CRPs. Currently available *ex ante* models are very poor in their handling of natural resource management related interventions. Therefore CRP6 will pursue the development of *ex ante* impact models and useful datasets to contribute to improved system level prioritization processes.

4.2.3 Targeting

The CRP6 proposal sets out ambitious impact targets (Table 1). At the consortium level, there still needs to be more discussion on how these targets are to be used by CRPs. There may be scope for de-emphasizing them or revising them to be more realistic, for example to respond to actual resources available and CRP implementation schedules. While there are also specific output targets in the rolling operational plans, the outcomes are not specified as to where, when and to whom they will occur. We will need this detail as in the new SRF, the CGIAR is co-responsible for research outcomes. Moreover, specific outcomes are needed to inform the design of research, partnerships and communications activities, and to design appropriate indicators for MEIA.

Table 1. Major impacts sought in CRP6 by year 10 (~2022)

	After 10 years, research under CRP6 is expected to contribute to the following impacts.
Reduced deforestation and degradation	<ul style="list-style-type: none"> • between 0.5 and 1.7 million hectares of forest being saved annually from deforestation; • ecologically and socially sustainable production and management practices being adopted in 9.3–27.8 million hectares of managed forests in target regions
Increased net carbon storage	<ul style="list-style-type: none"> • carbon emissions being reduced by between 0.16 and 0.68 Gt CO₂ yr⁻¹. • increased efficiency of REDD+ resulting in an increased supply of REDD+ credits worth between US\$108 million and US\$2695 million per year
Conservation and increased use of forest and tree genetic resources	<ul style="list-style-type: none"> • at least 2 million producers benefiting from increased conservation efforts related to tree diversity
Increased social and economic benefits from forest and agroforestry goods and services	<ul style="list-style-type: none"> • enhanced production and management options benefiting at least 3 million producers and traders and their families • enhanced production and management technologies raising tree, land and labor productivity of target groups by at least 50% • incomes from forest and agroforestry products for target households being at least doubled
Reduced risk for rural livelihoods	<ul style="list-style-type: none"> • the accelerated availability of funding for climate adaptation programs benefiting an additional 60 million people
Enhanced access of women and other disadvantaged groups to benefits at all levels	<ul style="list-style-type: none"> • where women have poor access to benefits provided through forests and trees, significantly improving that access, with our ultimate aim being to ensure equal access to benefits by both genders

4.3. Performance monitoring

Monitoring is the regular and systematic collection and analysis of data to determine how well a project or program is progressing along its impact pathways, meeting output targets leading towards intended outcomes. The objectives of monitoring for CRP6 are to:

1. provide regular information that is transparent, credible and rigorous for assessing progress (or lack of) in the delivery of results
2. satisfy CGIAR system-level minimum reporting requirements
3. encourage overall coherence and reasonable standardization in approaches within themes and components and across CRP6, for progress at Program level to be assessed and associated lessons drawn
4. provide data that can be used for subsequent evaluation and impact assessments.

According to the (draft) Consortium Level Monitoring Principles, CRPs should monitor progress over time, both in quantity and quality, toward the delivery of outputs and outcomes, and total spending (from all sources: Fund and bilateral) against expected expenditures at the (i) the CRP component level, and (ii) the regional level. Each CRP is expected to monitor its progress and to report to the CO annually, using a standard reporting template.

In the CRP6 MEIA strategy, monitoring, and project management, will be facilitated by the explicit development of “outcome maps”, with “outcome challenges” (targets) and relevant “progress markers” (indicators). Progress markers are qualitative and/or quantitative indicators, and may include: changes in knowledge, attitude and awareness of key “boundary partners”; development or improvements in the structure and function of relevant networks; evidence of interest and advocacy for policy change by relevant stakeholders; institutional reform; change in structure/function of market; technology adoption, or; change in individual or organization capacity. It is proposed that outcome mapping approaches be used in at least one major project or thrust of each component by end of 2013 and that it becomes more commonly used thereafter. This is not to advocate heavy design and transactions costs for all projects. The vision would be to instill greater planning of outcomes and impacts throughout, but not to introduce even more monitoring requirements to an overburdened system. Regular monitoring would be done for selected progress markers, with at least annual review, reflection and reporting. Wherever possible, indicators will be quantified. Progress will be assessed along a sequenced hierarchy of outputs, outcomes and their respective research and development milestones. This proposed linked set of analyses provides more structure and coherence to the hitherto separate reporting exercises in the CGIAR of center outputs, outcomes and impacts. These analyses will form the backbone for evaluations of CRP6 and its components.

Monitoring provides regular feedback and early indications of progress or lack thereof in the achievement of intended results and helps to guide implementation. It will provide qualitative and quantitative assessment of progress towards achieving planned outputs, project level outcomes and system level outcomes. Indeed, a result of the assessment could be an adjustment of the impact pathway, including progress markers. Progress will be assessed by comparison of actual achievements with intended milestones and “progress markers”. Monitoring reports will include discussion of, inter alia:

1. milestones and progress markers achieved, delayed, not achieved
2. the quality and significance of results achieved
3. measures of progress in delivering gender related results, as per CRP6 gender strategy (e.g. number of relevant CRP6 projects collecting gender-disaggregated data)
4. role and engagement of partners

5. comparison of budget against actual expenditures
6. deviations from plan, new directions and revisions to the impact pathway

Monitoring will also inform regular reflection on the plausibility of planned impact pathways at the Theme, Component and CRP levels. The results of the monitoring will be used as feedback to make necessary adjustments in ongoing and new activities.

Part of our challenge is to monitor, assess and learn from the CRP6 experiment. It is (intended to be) a new way of working, with three key characteristics that (should) differentiate CRP6 from “business as usual”: and enhanced focus on an “impact culture” or “utilization focus”, in which individual scientists, teams, and the program as a whole, are oriented to solve priority problems and develop and follow clear and well-articulated impact pathways; coherence and focus on priority topics, organized into 5 Components; emphasis on building relationships with a broad range of partners, including ground-level practitioners through to high-level policy makers, in addition to a wider range of research collaborators. These aspects of operation and organizational culture will also be monitored.

Regular monitoring will produce a register of outputs and outcomes, as data for reporting, evaluation and impact assessment.

Monitoring is the responsibility of the Component Coordinator (supported by senior scientists from participating centers). MSU will assist as required.

Timing and templates

- Annual “activity” reporting (progress towards achieving Outputs)
- Reporting template developed and cleared through Component Coordinators

An overview and timetable of MEIA activities and responsibilities is provided as Appendix 3.

4.4. Evaluation

Evaluation is the systematic and objective assessment of an ongoing or completed project, program or policy, its design, implementation and results. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making processes of major stakeholders.

Evaluation can be conducted by an independent, external evaluator/team, by an internal evaluator/team independent of the activity being evaluated, by project/program team members, or any combination of the above. Independent external evaluation has been promoted as the best approach where the accountability function of evaluation is paramount. This is based on the assumption that independent external evaluators will be more objective and more inclined to be critical, without conflicts of interest (though this assumption is questionable for several reasons). External evaluators may also bring a fresh perspective to see problems or opportunities that have been overlooked internally. The CGIAR has established an Independent Evaluation Arrangement (IEA), with an approved policy for Independent External Evaluation and a set of standards intended to guide CRPs (discussed further below). CRP6 places high value on the learning function of evaluation, and for that there is a strong argument to employ internal evaluation at the Theme and Component levels.

4.4.1 Internal Evaluation

CRP6 will conduct regular internal evaluations of themes, components, and regional sets of activities. Evaluations will draw on established impact pathways and regular monitoring information, with additional data collection and analyses of overall processes (process evaluation) or outcomes (outcome evaluation), and ultimately the longer-term impacts.

A typical internal evaluation will develop a record of theme/component work, including: partnerships and other kinds of stakeholder engagement; explicit and implicit intended impact pathways; main outputs, and; project level and system level outcomes. We will draw on a range of methods, including:

- Outcome mapping and PIPA, theory-based approaches that aim to identify change at intermediate stages along the impact pathway.
- Most Significant Change Analysis, an approach to assess change after-the-fact. It has a strong participatory element and uses narrative documentation.
- Social network analysis to assess and demonstrate the role of CRP6 in engaging with and influencing other actors as part of the process of achieving the impacts.
- Discourse analysis tools to trace CRP6 influence in international or national discourse and policymaking.
- Bibliometric analysis to trace CRP6 uptake and influence in the scholarly community, and a measure of scientific quality.
- Conventional before/after and with/without quantitative analyses of impacts

The essential challenge is to trace the links between the collective set of activities, partnerships, outputs and project level outcomes, to larger impacts and, as or more importantly, to understand whether, why and how the program has contributed to change. With these complex impact pathways, it is neither practical nor desirable to try to attribute major outcomes exclusively or even directly to CRP6 interventions. The process of change is understood as a complex, iterative and multi-agent process. The evaluation task is to assess whether and how components of CRP6 have contributed by tracing back to the research and other interventions to show evidence (indicators) that the theoretical impact pathway(s) was realized. It will be very useful to investigate what worked and how it worked in the sense of causing or supporting change. We can aim for rich qualitative descriptions of the multiple pathways and feedback loops (more of an impact web) and identify weaknesses and/or missed opportunities that can be enhanced in future work.

Once the outcomes are documented, it will be possible to estimate their impacts in terms of impacts such as forest conservation (biodiversity, carbon) and livelihoods improvements (discussed below), though again attribution in a quantitative sense may not be practical or advisable.

The work will be done by CRP6 scientists and staff supplemented by external consultants as needed and appropriate. To get the work done in a timely way, and to get a broad perspective, it will be best to have an interdisciplinary team.

4.4.2 Independent External Evaluation

The CGIAR has established an Independent Evaluation Arrangement (IEA), with an approved policy for Independent External Evaluation and a set of standards intended to guide CRPs.

IEA evaluations will have a strong focus on accountability and value for money, explicitly considering the comparative advantage of the CGIAR and CGIAR reforms in efficiently contributing to the system

level objectives. They will examine the clarity, relevance and priority of the objectives of CRP work; original and continued validity of the intended impact pathways; adequacy and integration of ethical and equity considerations; efficiency and effectiveness of institutional, governance, oversight and managerial arrangements; quality and efficiency of the research; mutual accountability and responsibility in line with forecasts and budget; progress and potential for achieving outcomes and ultimate development impacts; potential for sustainability and multiplier effects of investments.

It is intended that IEA evaluation will use CRP6 assessments as its primary source of evidence, including outcome and impact assessments, annual monitoring reports, and internal evaluations. External evaluations of CRPs commissioned by the IEA will be asked to include assessments of the credibility of monitoring reports provided by the CRPs. The Consortium Board will also ask the IEA to conduct external evaluations of the monitoring system at regular intervals. Verification of the reliability of the information provided by the CRPs will be part of the terms of reference for this external review.

4.5. Ex-post Impact Assessment

Impacts are defined in the evaluation literature as the positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended (IEA Standards). These effects can be economic, sociocultural, institutional, environmental, technological or other types. Within the CGIAR system, impacts are defined as the consequences of the CRPs on the status and state of selected development variables concerning the SLOs - which are themselves related to the attainment of Millennium Development Goals. These development impacts may include decreases in rural poverty rates at transnational level, increased household food security levels, including increased nutritional quality of diets of the poor, and increased resilience of the most vulnerable agricultural systems to climate change and other external shocks. Impacts are the overall and long-term effects that are attributable in part to a CRP.

However, there is increasing recognition that interventions that contribute to complex, indirect causal chains, with multiple partnerships, and with data limitations that are inherent in contemporary development programming (and by extension, in CGIAR work), require a broad range of methods to evaluate effectively (DFID 2012; CGIAR NRM Impact Assessment Discussion Group). Therefore CRP6 will adopt a mixed methods approach to impact assessment that considers impact pathways and ex-post outcomes assessment along with efforts to trace impacts in the more conventional sense.

Indeed, there is a recognized lack of tools to effectively assess impacts of these kinds. The DFID (2012) report highlights the need for further development and testing of IE designs and methods as a research activity. CRP6 will contribute to this.

4.5.1 Building on Outcome and Impact Pathway Assessments

The CRPs have had to describe intended outcomes in more detail than centers were required to do previously. Notwithstanding the explicit impacts described above, outcomes are not yet specified in terms of quantity, location, or specific beneficiary. A list of outcomes indicated in the CRP6 proposal is provided as appendix 2.

Several points are important to make regarding this list.

First, the Consortium Office has not yet made clear their expectation for the monitoring and assessment of outcomes. Therefore, the degree of specific targeting, assessment of baseline conditions, level of quantification, inter alia, is not yet known.

Second, the list demonstrates the breadth of changes sought by CRP6 outputs and therefore the complexity of assessment. Regardless of the needs of the Consortium, it is obvious we cannot apply rigorous and costly methods to assess all these outcomes. Different degrees of monitoring will be required and a process of prioritization will need to take place to make this decision.

Third, outcomes are often related to improved decision making by various stakeholders or improved access or capacity. They are also related to improved functional performance of organizations or systems – e.g. efficiency and effectiveness. These are not straightforward to measure and thus there will be need to enhance CRP6 capacity to measure and assess change in such outcomes. As noted above, this is a legitimate research activity for CRP6. As a part of this, we aim to develop effective systems and approaches to use results from monitoring and evaluation as part of impact assessment.

4.5.2 Impact Assessment

Ex post impact assessment in CRP6 will build on the theory-based approach discussed above. Evidence of positive outcomes consistent with anticipated (or revised) impact pathways will be linked to quantified changes in conservation and livelihoods status compared with baseline assessments in locations selected as representative for CRP6. Because CRP6 interventions will have influence at many different scales, and because they will operate as contributory causes in complex environments, it is unlikely that it will be possible to compare treatment and control groups in any strict sense. Counterfactuals (what would have occurred in the absence of CRP6) cannot be directly observed, they can only be estimated. A mixed method approach employing a variety of qualitative methods will almost always be needed to understand why and how changes have taken place, and what role CRP6 has played in those changes. Impacts which are not narrowly defined or expressed in a quantitative sense, such as those which relate to “benefits from increased conservation efforts related to tree diversity” or “livelihood gains for women”, will also need to be assessed through participatory approaches, where beneficiaries help to define the important impacts. Assessments will be conducted for a representative set of CRP portfolio activities so that overall impact can be extrapolated. It is not pragmatic, for example, to measure the livelihood impacts for millions of intended beneficiaries.

While all outputs and many outcomes are envisaged to take place wholly within a component, impacts are for the most part achieved through the (non-linear) interaction of outputs and outcomes across CRP6 components. What this means is that coordination of design and methods is important so that all CRP6 projects and activities are aligned in the way they contribute to impact assessment. For example, where impacts could be additive across components, they need to be defined and measured in consistent ways (e.g. the way poverty reduction is calculated). Often impacts are not additive (for example when different components work in the same sites) and that also presents challenges in design to be able to understand the relative importance of different outputs and outcomes in achieving impacts. This has further structural implications on how impact assessment is done and this is discussed in section 4.5.3 below.

Quantified impact targets have been set in the CRP6 proposal, which allows for an eventual determination of whether they have been achieved or not. There are concerns about whether the

targets are practical or achievable in the time period and under the budget proposed in CRP6 (indeed, the role of impact targets for all CRPs is not yet clarified by the CO). One reason that CRP6 and other CRPs tended to be optimistic in their targets is that there is already significant research for development taking place in centers, which is highly relevant to the CRPs. Ex post impact assessments can therefore begin with assessments of impacts from pre-CRP6 research endeavors. This will build experience with the tools and generate lessons to improve CRP6 implementation.

There is need to establish clear definitions and indicators for the key impact variables of CRP6. For example, the impact for women, of 'significantly improving access to benefits provided through forests and trees' requires a clearer definition of 'access'. Similarly, the definition of what is meant by 'benefiting' needs elaboration in the impact target of 'enhanced production and management options benefiting at least 3 million producers and traders and their families' (and the one related to conservation of forests). For other variables, the meaning is clearer, but the specifics on how to measure them need to be developed (e.g. how to measure income, productivity, and deforestation).

4.5.3 EPIA Methods – Design, Sampling and Assumptions

Among the new research planned in CRP6, some decision needs to be made on what will be subjected to more rigorous impact assessment, and therefore where baselines may be collected. For outcomes, each component will develop its priorities for more rigorous assessment, but for the longer-term impacts which result from the collective efforts of all components, a CRP level process is required. It is proposed that the technical steering group and the monitoring/impact team jointly participate in this decision making process.

Design issues:

The basic challenge in design of studies is a way to properly measure impact – the change attributable to an intervention(s) in comparison to the absence of the intervention (i.e. the counterfactual). In recent years, the issue of the identification of an appropriate control has attracted considerable attention precisely because it has been recognized that this has not always been achieved. When treatment and control groups are not identical in important characteristics, the impacts found could then be partly attributable to the differences in these characteristics and not to the intervention itself. There are analytical methods available to try and separate these effects, but generally these work only in large samples, possible for observational units such as households, and not for larger observational units whose samples sizes will be limited, such as landscapes. Therefore the identification of appropriate counterfactuals will be an important design consideration in impact assessment (and possibly for some outcomes as well).

The sites selected for impact assessment are also important in that they should be broadly representative of the target areas of CRP6 so that sites sampled for impact studies could form the basis for broader extrapolation of CRP6 impacts. To meet needs of comparable treatment and control groups as well as representativeness of landscapes, households, or other observation units, CRP6 will integrate as much randomness into impact assessment designs. This need not entail a complete randomized (or experimental) design but the goals and principles of such a design will be applied.

In addition to the testing for impacts of interventions articulated in the components, CRP6 will also consider conducting assessments of cross cutting approaches, including the sentinel landscape approach, partnerships, capacity development, and communications.

Sampling issues:

As noted above, the sampling of sites needs to consider representativeness of CRP6 research so as to be able to generalize results. Sampling for impact assessment should also cover the major strata we are interested in. The proposal emphasizes how interventions and impacts will differ according to location along different parts of the forest transition curve. In order to test for this, research and subsequent impact assessment will need to be implemented across this stratum. Other strata will be identified through component discussions (e.g. varying sites across institutional frameworks, climate, etc..).

CRP6 will need to consider the sampling of different units, for example: countries for national policy impacts; sub-national regions for local institutions, landscapes for multifunctional landscape outcomes, households for livelihood outcomes and individuals for gender effects. Sizes of samples will require careful thought taking into consideration need for quantification, potential shifts over time of control observations to treatment observations, and potential difficulties of disentangling multiple influences on impacts.

Assumptions:

There are assumptions made on the level of expected impacts (and where), the pathways of achieving them, and the best methods used to measure them. These should be clarified so that better understanding of ex post assessments can be made. This will need to be done through discussions with component leaders.

4.5.3 EPIA Methods – Measuring impact indicators

Generally, most of the impacts and many of the outcomes sought by CRP6 are long term. Yet, there will be need to demonstrate progress towards impacts and outcomes by year 5 when the CRP is likely to be evaluated. Thus there is need to identify some progress indicators for outcomes and impacts and to monitor them at an appropriate frequency during the time until impact.

Many indicators require special scientific techniques for measurement – e.g. deforestation, carbon stocks, and poverty reduction. These should be developed by CRP6 experts in the area with help from external specialists where necessary. There is need to align these with other CRPs and already there have been discussions with other CRPs around developing common methods for NRM related indicators.

Undoubtedly, CRP6 will not apply a one-method fits all approach to impact assessment. We will evaluate different methodological options based on advantages and disadvantages as there are tradeoffs between degree of rigor and cost. CRP6 will use both quantitative and qualitative methods as appropriate.

4.5.4 Aligning indicators from project to CRP and SRF

At the impact level, all CRPs are to feed into consortium level impacts as noted by the SRF. Thus, all CRP6 activities should be aligned to feed into broader level impacts. Future project proposals and CRP6 impact assessment activities should make sure that their indicator lists are harmonized with those at higher levels and that methods used in collecting data are the same.

4.5.5 EPIA methods – how the impacts were achieved

Arguably the most critical aspect of impact assessment is not simply to know whether targeted impacts were achieved or not, but rather how and why changes in impact indicators (and unintended impacts) came about. This not only helps CRP6 in enhancing its effectiveness in contributing to impacts in the future (e.g. through identification of more relevant outcomes and outputs) but can also have more far reaching effects on other research and development initiatives which are faced with the same challenges. This type of analysis will rely heavily on qualitative research, which will complement the more quantitative research on 'what changed'. Such qualitative research will include perspectives of impact and influences from different stakeholders.

5. MEIA Team

CRP6 has a dedicated MEIA Team with scientists from participating centres and partner organizations and support from the CRP6 Director's Office. The MEIA Team will:

- Support the development of community of practice around MEIA within CRP6, and link with the larger CGIAR MEIA community of practice
- Help projects, themes and components to develop clear and explicit impact pathway and progress markers in the design phase, to monitor and assess progress during implementation and to build an evidence base that will support high quality evaluation and ex-post impact assessments
- Conduct or coordinate internal evaluations of CRP6 research at the theme, component or region level
- Advance the tools and approaches for measuring the returns to policy-oriented social science research and natural resources management research

The CRP6 model is an experiment and research on the effectiveness of the approaches used is an important scientific effort in and of itself. There is a known lack of reliable approaches for evaluating the impact of policy and natural resources management research. The dearth of studies within the CGIAR system itself that address non-marketed environmental benefits and costs of research has been criticized. Recent efforts by SPIA have made good progress, but methods for assessing critical outcomes such as capacity strengthening, institutional development and policy reform require further development and testing. CRP6 will tackle this as a means to improve its own monitoring, evaluation and impact assessment. This then will be another important output of the program.

As a part of the early implementation of the program, the MEIA team will work with individual component leaders and teams to develop component-level impact pathways, outcome maps, and explicit indicators of progress to be used in monitoring, reporting, impact pathway evaluation and, ultimately, in Component- and CRP-Level evaluations.

Reports will be peer reviewed and published in an ongoing series of MEIA discussion papers and journal articles, and the results will be summarized and highlighted on a MEIA webpage. The team will engage with ongoing and developing research, communications and extension efforts as a way to share learning with CRP6 partners and stakeholders, and more broadly.

Appendix 1: Definitions

Baseline: analysis describing the situation to be addressed by a CRP (e.g., as described in the CRP proposal) and thus prior to the CRP generating results, that serves as a basis for measuring progress in achieving the objectives (outputs, outcomes and eventually impacts) of a CRP. Progress (results and accomplishments) can be assessed and comparisons made against it. It also serves as an important reference for the external evaluation of the CRP.

Common Operational Framework: framework for common processes agreed between the FC and the CB, which includes monitoring and other operational aspects that apply to all aspects of funding and implementation of the SRF and the CRPs, regardless of funding source or implementing entity.

Evaluation: The systematic and objective assessment of an ongoing or completed project, program or policy, its design, implementation and results. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making processes of major stakeholders.

Impacts: Impacts are the positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended (IEA Standards). These effects can be economic, sociocultural, institutional, environmental, technological or other types. Within the CGIAR system, impacts are defined as the consequences of the CRPs on the status and state of selected development variables concerning the SLOs - which are themselves related to the attainment of Millennium Development Goals. These development variables, specifically related to each SLO, may include decreases in rural poverty rates at transnational level, increased household food security levels, including increased nutritional quality of diets of the poor, increased resilience of the most vulnerable agricultural systems to climate change and other external shocks. Impacts are the overall and long-term effects that are attributable to a CRP.

Influence: change in perception or understanding among partners, stakeholders or clients achieved by sharing outputs and/or by engagement in the scientific process.

Milestones: intermediate 'markers' of progress toward the delivery of outputs or outcomes, expected to be delivered by the CRP at specific dates, before the full output/outcome is delivered. They help track progress.

Monitoring: regular and systematic data collection and analysis to determine how well a CRP is progressing along its impact pathways, toward intended outcomes. Progress is assessed along a sequenced hierarchy of outputs, outcomes and their respective research and development milestones. Monitoring provides regular feedback and early indications of progress or lack thereof in the achievement of intended results and helps to guide implementation.

Most significant change: The most significant change (MSC) technique is a form of participatory monitoring and evaluation. It is participatory because many project stakeholders are involved both in deciding the sorts of change to be recorded and in analysing the data. It is a form of monitoring because it occurs throughout the program cycle and provides information to help people manage the program. It contributes to evaluation because it provides data on impact and outcomes that can be used to help assess the performance of the program as a whole. Essentially, the process involves

the collection of significant change (SC) stories emanating from the field level, and the systematic selection of the most significant of these stories by panels of designated stakeholders or staff. The designated staff and stakeholders are initially involved by 'searching' for project impact. Once changes have been captured, various people sit down together, read the stories aloud and have regular and often in-depth discussions about the value of these reported changes. When the technique is implemented successfully, whole teams of people begin to focus their attention on program impact (<http://www.mande.co.uk/docs/MSCGuide.pdf>).

Outputs: Outputs are the most immediate effects of the activities undertaken in a CRP. They are concrete and tangible products and services, including new knowledge, technology and policy recommendations, and they are necessary to achieve the CRP's objectives. Outputs relate to the completion (rather than the conduct) of activities and are a type of results over which scientists and research managers have the highest degree of control.

Output targets (with associated verifiable indicators/milestones): An intermediate step below "Outputs". In the general logic model followed by research Components in the CRP6 (knowledge development [output target], knowledge synthesis [output], knowledge uptake/use [outcome], and knock-on effects of knowledge uptake/use [impact]), the Output target category lies at the knowledge development level. Indicators or milestones for the achievement of output targets could include publications, workshops or other constituent parts of a knowledge development output target.

Outcomes: Behavioral changes manifest as changes in practice, institutions, policy and capacity that result in part or in whole from CRP6 work. For example: an international agreement is reached or national policies are adopted that will encourage forest conservation or improved livelihoods; improved germplasm is taken up by commercial nurseries and made available to farmers, or; an international conservation organization implements a new approach in its programming designed to protect local people's access to forest resources in their project areas. Outcomes, unlike outputs, are only partially attributable to the project/program activities; there are other changes taking place and other factors that contribute to outcomes.

Outcome mapping: A monitoring and evaluation method that focuses on defining and tracking progress in terms of behavioural change (Outcomes) by key stakeholders (Boundary Partners).

Results: all the different effects of a CRP's activities. The terms "outputs", "outcomes" and "impact" describe more precisely the different types of results at different levels of the impact pathway hierarchy.

Uptake: The process of becoming aware of and accessing research outputs, and the institutions, policies, systems and mechanisms supporting this process (<http://www.dfid.gov.uk/r4d/PDF/Outputs/Communication/Research-uptake-report-part1.pdf>).

Appendix 2: Key Targeted Outcomes in CRP6

Component 1 as listed in the CRP Impact Pathway:

- Smallholders and vulnerable groups have improved access and management rights to forest, agroforestry, and tree resources
- Knowledge on tree management and access to productive tree germplasm available to rural communities
- Access to forest and tree product markets enhanced through improved value chains

Specific ones listed in component text:

Predominantly Theme 1

- Technical innovations increase the productivity, sustainability and profitability of smallholder forest and agroforestry production.
- Smallholder natural-resource-based enterprise development is encouraged and facilitated.

Predominantly Theme 2

- Accessibility, effectiveness and efficiency of markets for forest and tree products is increased.
- Innovative extension approaches increase the speed, appropriateness and targeting of the spread of superior tree germplasm and tree management options.

Integrated across Themes 1 and 2

- Smallholder production and marketing systems attract efficient private-sector input suppliers (e.g., quality planting material, production and harvesting inputs, and postharvest processing equipment).

Predominantly Theme 3

- Policy and institutional changes provide tenure security and incentives for small- and medium-scale forest and tree product producers, processors and traders.
- Local-level institutions that regulate use and management of forest and tree resources are supported and strengthened (including their aggregation into higher-level structures) to improve their effectiveness, to enhance market access and to increase opportunities for influencing policy and practice.
- Rules, norms and strategies for conflict resolution and equitable benefits capture among multiple resource users are identified and strengthened.

Integrated across all three themes

- Recognition of actual and potential contributions of forest and tree products to livelihoods is increased among national-level government agencies and national and international programs and projects.
- National Agricultural Research Systems (NARS) increase problem-oriented research on social, economic, policy and technical issues including local knowledge and practice relevant to smallholder forest and tree production systems.
- Women and other disadvantaged actors have greater incentives, rights and capacity with which to benefit from forest, tree and agroforestry products.

Component 2 as listed in the CRP Impact Pathway:

- Increased awareness at local, regional, and international level of the status and threats to priority tree species
- Effective and equitable conservation strategies are implemented in an increased number of countries
- Improved tree genetic material is conserved for use by forest managers and farmers
- Forests are better managed

Specific ones listed in component text:

1. Status of and threats to at least 100 priority tree species, important to both men and women in Africa, Asia and Latin America, will be better understood and mitigation and conservation initiatives will be undertaken by national partners (government agencies, NGOs) and other stakeholders.
2. National agencies in at least five countries per region will have developed and be implementing strategies for the conservation and sustainable use of forest and tree resources including intraspecific tree genetic diversity.
3. Germplasm of wild relatives and cultivars of tree crops (e.g., cacao, coffee, coconut) and priority wild tree species with important traits will be conserved and characterized.
4. Production forests will be managed for multiple uses and improved multifunctionality by integrating management of timber and NTFPs in at least five priority countries.
5. Local communities will be better represented in decision making regarding the management of production forests, ensuring more equitable benefit sharing and reducing conflicts over land use and resource rights in at least five priority countries.

Component 3 as listed in the CRP Impact Pathway:

- More realistic land use and development planning and institutional reform of land use regulation
- Clarified rights, defined multistakeholder targets, multistakeholder negotiations, restoration investment
- Empowerment of realistic, conditional and voluntary actions in a continuous learning perspective

Specific ones listed in component text:

1. In **temporal** terms: When dealing with tree-based systems across the transition, longer-term impacts should be expected, usually in the range of 10–30 years. However, research conducted under Component 3 of CRP6 will both reduce the conversion and degradation of forests and enhance the restoration/rehabilitation of forestlands. The restoration of tree cover and forest functions (including environmental services and biodiversity) will thus be accelerated while meeting the needs of poor and disadvantaged communities and contributing to national development.
Relevant outcomes include the following. Local resource managers will have access to and be able to use cost-effective tools to appraise the likely impacts of changes in land use on watershed functions, biodiversity, carbon stocks and the economic. What historically has taken a decade, or longer, of intensive research and negotiation support could feasibly be replicated in a third to half the time.
2. In **spatial** terms, Component 3 of CRP6 will lead to: (i) an increase in the area of natural and sustainably managed (woody) vegetation with effective protection; (ii) an increase in the area of multifunctional zones that provide for production within forested landscapes while maintaining biodiversity assets and the provision of environmental services; and (iii) a decrease in the area of low-value, contested and formerly forested land that can be transformed into productive agroforestry/forest landscape mosaics.

Relevant outcomes include the following. Land use planners and practitioners will use principles and methods resulting in clearer recognition of conservation and development trade-offs in land and rights allocation, notably tenure, leading to optimized biodiversity and livelihood outcomes.

3. In **functional** terms, Component 3 of CRP6 will enhance rural livelihoods and environmental service provisioning, while acknowledging that trade-offs must be ultimately recognized and negotiated. Environmental services will be integrated using appropriate criteria and indicators that reflect the drivers and consequences of tree cover transitions.

Relevant outcomes include the following. Local and national agencies will identify environmental service flows and biodiversity assets, supporting efficient and effective conservation, management and marketing of, and rewards for, the provision of environmental services.

Opportunities for ecological restoration will be fully used; trade-offs will be recognized and the contest over them will be eased by negotiation

4. **Institutionally**, the knowledge and solutions generated under this component of CRP6 will support the delivery of forest and tree services through innovative rewards and incentives, particularly through payments for environmental services (PES) systems. These will support social and economic relations between external and local stakeholders that strive for reciprocity, and seek a balance of fairness and efficiency.

Relevant outcomes include the following. Local and external stakeholders will negotiate and have access to a range of conditional and performance-based arrangements that support the provision and maintenance of environmental services and biodiversity assets in productive landscapes. Community involvement will be based on collaborative decision making aided by monitoring tools for strengthening meaningful participation in conservation and land use planning, especially by women and other disadvantaged groups.

Component 4 as listed in the CRP Impact Pathway:

- REDD+ and EBA concerns are appropriately integrated into global agreements
- Effective, efficient and equitable mitigation and adaptation policies and initiatives are designed and implemented
- Financial mechanisms linked to climate change increase support to forest and tree based initiatives

Specific ones listed in component text:

It is our aspiration that research conducted under this component will contribute to the development of new forest-and-climate regimes (currently being negotiated at global and national levels) and subnational initiatives related to climate change, forests and trees in ways that ensure that they are effective, efficient and equitable. Within five years, research results will have shaped key features of the global regulatory systems as well as governance and financing priorities for forest-related M&A measures. Within 10 years, research will have resulted in demonstrable improvements in policies and practices, and effective governance as “second-generation” initiatives incorporate lessons from those now getting underway or being negotiated, including those aimed at increasing synergies between M&A policies and measures. Although not fully attributable to CRP6, associated impacts will be estimated in terms of tons of CO₂e emissions avoided or carbon sequestered in forests and trees, forest areas under improved management, and people benefiting from M&A initiatives.

Component 5 as listed in the CRP Impact Pathway:

- Global trade and investment flows are better regulated to be socially and ecologically responsible and to promote sustainable forest management
- Forest stewards are empowered to, and global consumers make, responsible decisions on forest use

- Global businesses adopt guidelines that aim to reduce ecologically and socially harmful investments

Specific ones listed in component text:

We expect to contribute toward the following specific outcomes.

- Multilateral and regional banks favor investments in non-forestlands and reduce investments driving conversion of primary forests in selected forest-rich countries. This will encompass, for example, shifting investments away from peatlands to degraded mineral soils in Indonesia to reduce GHG emissions.
- International multi-stakeholder processes build effective forest governance regimes by defining standards, procedures and safeguards that are inclusive of small-scale producers, and are economically and politically feasible and environmentally sound.
- Multilateral and regional banks increase their investments in selected forest-rich countries, favoring inclusive business models that specifically address the needs of women, indigenous peoples and other disadvantaged groups.
- Regional investment and economic development institutions in Central, East and Southern Africa, Southeast Asia and the Mekong region in Asia, and the Amazon and the *Cerrado/Chaco* region in Latin America adopt guidelines that promote trade and investment incentives that are ecologically sound and socially inclusive.
- Private corporations with significant forest-related investment adopt sustainable standards that ensure respect of local people's rights and facilitate equitable benefit sharing and continued provision of forest goods and services.
- Governments in consumer countries, especially in North America, member states of the EU and China, advance policy and legislation aimed at improving procurement guidelines seeking to reduce deforestation from food, fodder and fuel crop production, and forest degradation associated with illegal timber trade.
- National governments in forest-rich countries in each selected region design and enforce effective policies, laws and regulatory frameworks on resource extraction while ensuring legal trade, protection of local people's rights and provision of forest goods and services.

Appendix 3: Type of CRP6 monitoring, evaluation and impact assessment (MEIA)

Type of MEIA	Due	Responsibility	Users	Information required
Semi-annual technical reporting	Feb 28	Component Coordinators	MSU, SC, Donors	Progress in achieving deliverables
	Jul 31	Cross-cutting focal points MSU		Progress in achieving outputs Progress in achieving outcomes Publications list
Annual progress monitoring and reporting	April 30	Component Coordinators Cross-cutting focal points MSU	CO, FC	Progress in achieving deliverables Progress in achieving outputs Progress in achieving outcomes Publications list 1x Outcome story per Component Deviation from Impact pathway
Internally-commissioned Evaluations (inc. Impact Assessment)	Annually	SC/Lead Center	SC, CRP6 scientists, partners and managers	TBC
CRP-level Evaluations	Minimum every 4 years	IEA	CO, FC, IEA, CRP6 scientists, partners and managers	Relevance, effectiveness, efficiency, impact and sustainability
Final report	Within 6 months of CRP6 completion	Component Coordinators Cross-cutting focal point MSU	CO, FC	Format TBC

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