This Forest Livelihood brief summarizes the outcomes of an process developed through the LearningWheel© methodology, facilitated by PICOTEAM.

Operationalising the ecosystem approach – re-inventing research

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Forest Livelihood Briefs

Operationalising the ecosystem approach - re-inventing research

1. Ideas from divergent fields are heading in the same direction...

Huge amounts of money have been invested in various approaches to improving natural resource management, of which biological diversity is a component. Integrated rural development was widely attempted in the 1960s and 1970s but then abandoned. Integrated conservation and development projects came onto the scene in the 1970s but although they are still around their credibility as a development or conservation tool is now seriously questioned. Ecoregional approaches to development, landscape approaches, the ecosystem approach, integrated catchment management, community-based natural resource management etc. are the flavours of this decade but many claim that they are merely putting old wine into new bottles. Our seeming inability to translate the approaches into practical achievements on the ground is leading to widespread disillusionment. In frustration, we abandon one set of buzzwords and replace them with others. What is surprising is not the improvement of approaches over the past 40 years - rather it is their fundamental similarity.

Although different approaches are held sacred in different fields of endeavour - e.g. the ecosystem approach within the biodiversity community, and integrated natural resource management within the international research centers[1] - they share many similarities (Figure 1), and there is much room for learning from each other.

2. The ecosystem approach has a long way to go before it can be operationalised...

The five statements of operational guidance, in the current versions of the ecosystem approach, whilst clearly written and coherently argued, effectively repeat the content of five of the principles without necessarily providing any further guidance on just how the ecosystem approach should be implemented. Peter Frost and colleagues, in a recent critique, suggest that the ecosystem approach has seemed to place greater emphasis on the content and comprehensiveness of the principles, rather than on what precisely needs to be achieved and how that achievement can be demonstrated. If the CBD is to move towards an outcomes-based approach, then the operational guidelines need to be strengthened.

3. What do we need to do to have widespread impact over whole landscapes with divergent stakeholders?

3.1 Changing the face of research...

Many people are asking: Is there a role for research? How many times have we heard from supposed beneficiaries of research that they do not see the role for research? How many donors have said that they don't want research?

Natural resources research in the rural tropics has had a bad press. We acknowledge that it is true that much natural resources research has not been very useful, but an overhauled science may be the only basis for solving many of the intransigent problems of the developing world. Research is needed that mobilises existing knowledge as well as

Protecting catchments in areas of shifting cultivation in Indonesia.
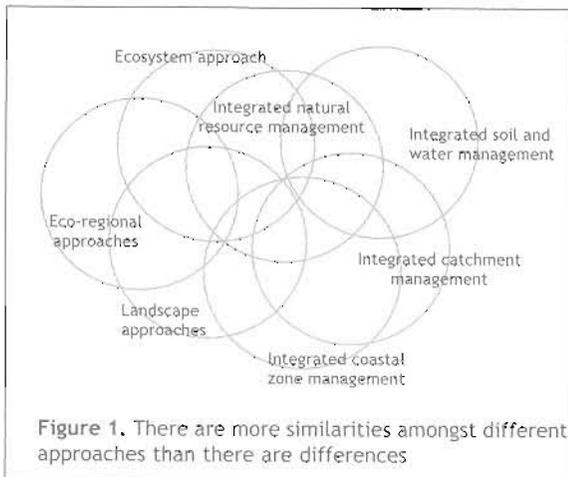(Photo by Yani Saloh)

Figure 1. There are more similarities amongst different approaches than there are differences

generating new knowledge. It is research that treats all management as experimental and that deals with real life situations. It is research that enables scientists and resource managers to experiment and learn together. It is action research but at a much larger scale than that at which it is usually practised. We argue that research needs to reinvent itself (Box 1). We need an approach that embraces multiple scales of interaction and response; a high frequency of non-linearity, uncertainty, and time lags; and multiple stakeholders with often contrasting objectives and activities. We need an approach that will have an impact on real-world problems. We need an approach that can make a contribution to complex issues and work on the multiple factors that have so far limited finding solutions to major problems. We also need an approach that is able to better address issues in their social and institutional context.

Our review leads us to advocate a new relationship between research and management. Research must be a shared learning experience for researchers, local farmers, fishers and forest managers and the staffs of government resource management agencies. Roussel et al. have argued for this new relationship between scientists and managers in the corporate sector. Their vision of 3rd Generation R&D is an industrial equivalent of what is needed for the rural environment in the tropics.

In the recent book "Science for Sustainable Development" the authors call for new ways of organising science in support of sustainable development in rural tropical landscapes. They argue that scientists must not be detached observers from outside the system. They must be actors themselves. They must work with resource managers to examine possible development scenarios and then to use the resource managers' interventions as their laboratory bench.

3.2. We need to pay attention to particular cornerstones for success – but go beyond just rolling out the jargon...

Eleven cornerstones have been identified as the core functions and characteristics that must be provided for successful, self-sustaining resource

Box 1. How should Science reinvent itself?

- Scientists need to 'get into the system'. No longer do we imagine systems analysis from an objective distance - we imagine researchers being one of the many actors, with the research process firmly driven by the users of the research results.
- We envisage multiple levels of analysis and intervention. For instance, in getting communities rewarded for conserving biodiversity, change will have to occur at the international convention level; national policies will need changing; district officials will need to make provision for new forms of land use; and communities will need to organise themselves to manage conservation areas and distribute benefits equitably.
- We will have to embrace complexity. 'Integration' will be a key concept - we will have to integrate across scales, across multiple stakeholders with divergent understanding of problems/opportunities, across different system components, across the research and development continuum.
- Given systems complexity, moving multiple stakeholders through the muddy waters will require facilitation skills at multiple levels. 'Facilitator' will never be 'master of ceremony'! Depth and quality of discussion must be ensured, different perspectives must be tackled, etc.
- A new weight will be given to social science research. We will need to approach systems from an organisational and institutional perspective. Social-ecological systems are influenced by the day-to-day management decisions of large numbers of stakeholders - from local to global. Many of the institutions (norms, rules and regulations) aimed at balancing different stakeholder interests are of limited effectiveness.
- Learning and adaptation will be fundamental values. Management must be organised in a way that promotes active and conscious individual and social learning.
- An interest in such research will inevitably lead to rethinking the culture and organisation of science, with new types of incentive systems, new kinds of leaders, different modes of organisation and different relationships between research and development.

management processes (Figure 2). They relate to:
- Partnerships and collaborative arrangements
- R&D teams
- Local organizational capacity
- Enabling governance and policy
- Social learning
- Access to technological, institutional and policy options
- Implementation processes
- Shared problem and opportunity focus
- Facilitation processes
- Scaling-up: Going beyond small local successes
- Balancing short and long-term needs

The conceptual framework emerged from the analysis of successful practice. Each cornerstone is important and they all interact. If the weakest cornerstone is not dealt with, the entire implementation process could be at risk. Implementation teams can use the framework to reflect on their intervention and analyse the state of art for each cornerstone. This helps them to reach a common perspective on where they are,
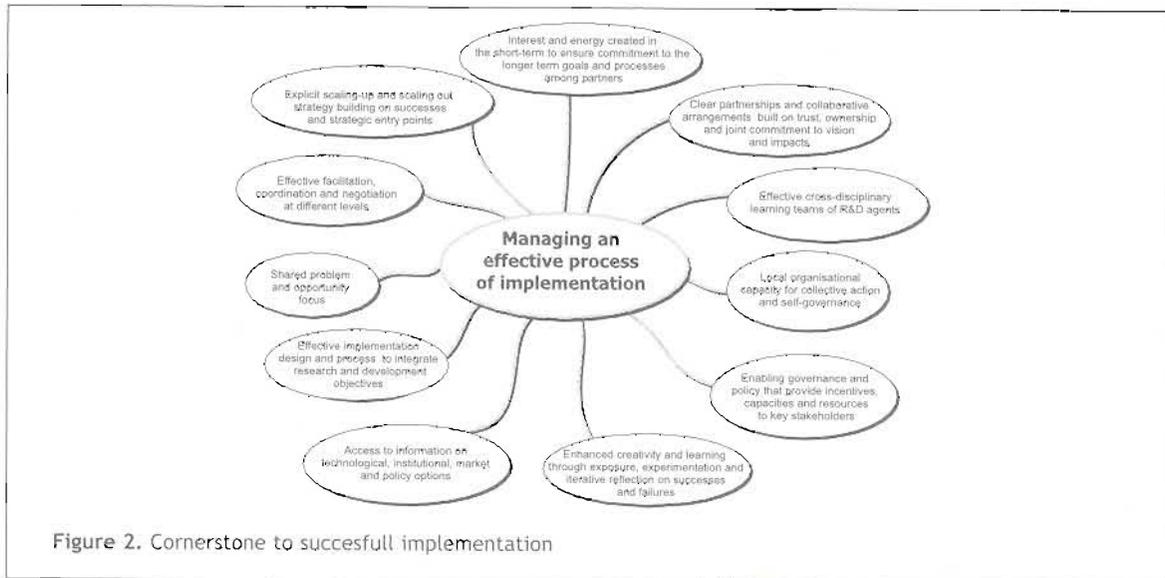
Figure 2. Cornerstone to succesfull implementation

what they consider success and what the knowledge and design gaps are in their existing intervention. An iterative self-reflection (e.g. every half year or annually) with the whole team and some stakeholders can be a powerful way of steering an intervention and learning systematically together.

Some of these cornerstones are now well established in the development lexicon, but there is a tendency to roll out the terms without paying attention to what is behind the terms. For example, 'partnerships' is now high on the agenda, but while many individuals and organizations embrace the importance of 'partnership', little has actually changed in the way partners are treated and selected. In the recent booklet "Navigating amidst complexity: Guide to operationalise effective research and development to improve livelihoods and environment", the authors go into some depth on each cornerstone. The elements of each cornerstone are outlined, and the strategies to achieve quality implementation of each element are spelt out. So, for example, four elements of the 'partnership' cornerstone are recognised, each with a series of strategies (Box 2).

3.3 We need to manage the implementation process carefully...

The "learning" cornerstone - "Enhanced creativity and learning through exposure, experimentation and iterative reflection on successes and failures" · centers on a crucial part of the implementation process, the need to use a learning cycle approach (Figure 3). Application of the learning cycle calls for designing a well thought through knowledge management system to ensure efficient data collection, analysis and interpretation, so that those directly involved, as well as others outside the 'project', can capitalize on the knowledge generated. Process monitoring and documentation yield rich data, insights and lessons that can be used for upscaling, dissemination and policy advocacy.

Box 2. To achieve quality in the implementation of each cornerstone, the elements of each cornerstone are outlined and strategies to achieve those elements are spelt out.

Example of - The "partnership" cornerstone: "Clear partnerships and collaborative arrangement built on trust, ownership and joint commitment to vision and impacts". The partnership cornerstone has four elements:
1. Assess need for partnership, then identify and assess potential partners.
2. Maximize synergies and complementarities with clear roles and balanced competencies.
3. Establish shared ownership and identify common values and principles.
4. Establish and maintain conditions and processes for decision-making and reaching agreements that are fair and equitable, and for monitoring the partnership.

Each element has a number of strategies. Example of the strategies for the 4th element "Establish and maintain conditions and processes for decision-making and reaching agreements that are fair and equitable, and for monitoring the partnership":
- Establish processes and mechanisms to ensure clear operational modalities with checks and balances to ensure accountability.
- Establish communication and feedback mechanisms; review these periodically. Ensure strong leadership that is inclusive, fair and accountable.
- Establish ways to deal with unequal partners and power relationships as well as ways to negotiate and/or deal with differences. Have mechanisms to uncover differences so they do not fester.
- Ensure that there is collaboration and not co-option; establish trust.
- Promote transparent information sharing and allow for divergence and convergence of opinions.
- Periodically conduct partnership appraisals that serve to highlight the strengths and weaknesses and to highlight what needs work in the partnership.
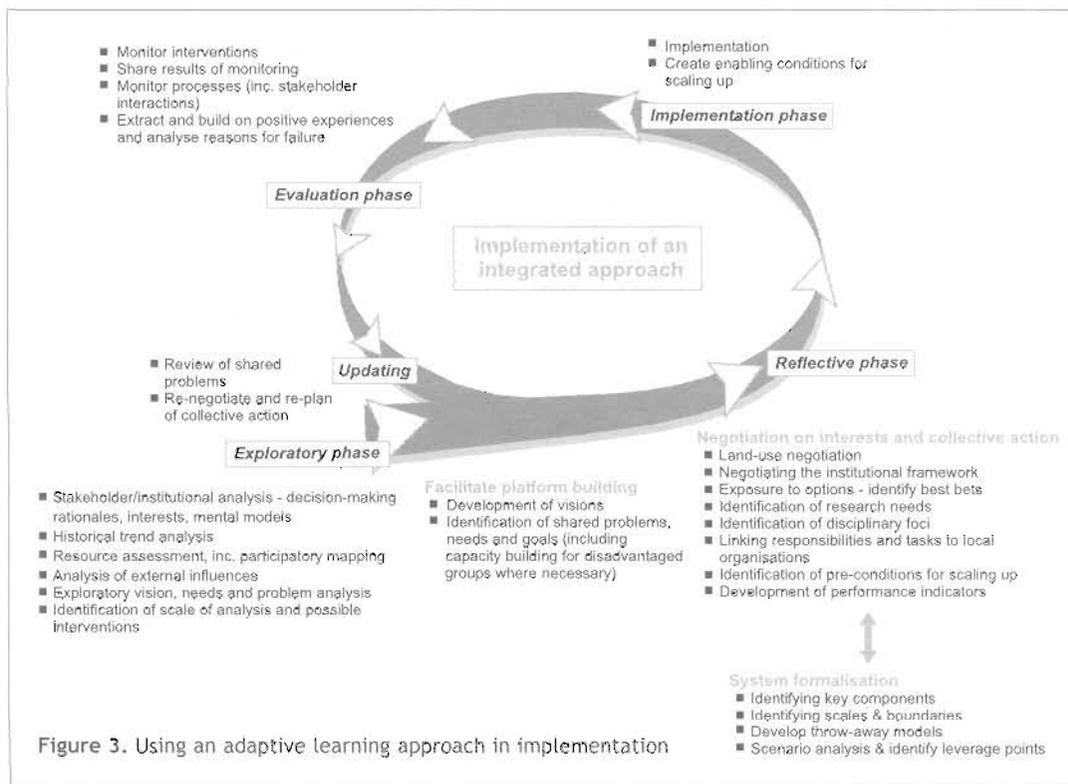
4. Concluding remarks - the way forward...

A new generation of integrated conservation and development projects, using approaches referred to as the 'landscape approach', 'ecosystem approach' etc. are being implemented. Much thought needs to go into how to keep them from failing as their predecessors did. We suggest that there is a new role for a re-invented research. Existing evidence suggests that the new projects should: a) operate at multiple scales, b) address the problem of trade-offs by measuring them, providing platforms for multi-stakeholder negotiations and using instruments such as payment for environmental services, c) pay greater attention to organisational and institutional aspects during implementation, d) give greater weight to extra-sectoral and non-local drivers of change, e) take an adaptive management approach, and f) mainstream participatory action approaches. The combination, sequence, form and quality of interventions at the various scales will be important in influencing outcomes.

5. Further reading from the CGIAR

Campbell, B.M., Hagmann, J., Stroud, A., Thomas, R., Wollenberg, E. 2004. Navigating amidst complexity: Guide to operationalise effective research and development to improve livelihoods and environment (in press).

Frost, P.G.H., Hanson, L.W., and Campbell, B.M. 2003. Review of the 'Ecosystem Approach' of the convention on biological diversity. Unpublished CIFOR report.

Harwood, R.R. and Kassam, A.H. 2003. Examples of research problems, approaches and partnerships in action in the CGIAR: Research towards Integrated Natural Resources Management. Interim Science Council, Centre Directors Committee on Integrated Natural Resources Management, FAO, Rome.

Sayer, J.A. and Campbell, B.M. 2003. The Science of sustainable development: Local livelihoods and the global environment. Cambridge University Press, Cambridge.

' Of the CGIAR - Consultative Group of International Agricultural Research (which includes NRM centers such as the Center for International Forestry Research - CIFOR).

- Monitor interventions
- Share results of monitoring
- Monitor processes (inc. stakeholder interactions)
- Extract and build on positive experiences and analyse reasons for failure

Evaluation phase

- Implementation
- Create enabling conditions for scaling up

Implementation phase

Implementation of an integrated approach

- Review of shared problems
- Re-negotiate and re-plan of collective action

Updating

Reflective phase

Exploratory phase

Facilitate platform building
- Development of visions
- Identification of shared problems, needs and goals (including capacity building for disadvantaged groups where necessary)

Negotiation on interests and collective action
- Land-use negotiation
- Negotiating the institutional framework
- Exposure to options - identify best bets
- Identification of research needs
- Identification of disciplinary foci
- Linking responsibilities and tasks to local organisations
- Identification of pre-conditions for scaling up
- Development of performance indicators

- Stakeholder/institutional analysis - decision-making rationales, interests, mental models
- Historical trend analysis
- Resource assessment, inc. participatory mapping
- Analysis of external influences
- Exploratory vision, needs and problem analysis
- Identification of scale of analysis and possible interventions

System formalisation
- Identifying key components
- Identifying scales & boundaries
- Develop throw-away models
- Scenario analysis & identify leverage points

Figure 3. Using an adaptive learning approach in implementation