

Methodology integration under the Ecor(I)Asia

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1. The Ecoregional Initiative for the Humid and Sub-humid Tropics of Asia - Ecor(I) Asia

The Ecoregional Initiative for the Humid and Sub-humid Tropics of Asia - Ecor(I)Asia - is one of eight ecoregional programs approved by the Consultative Group of International Agricultural Research institutes (CGIAR) to develop and implement ecoregional approaches in land use planning and natural resources management (NRM). Ecoregional research is meant to adopt an integrated, systems approach that takes into consideration technical as well as human dimensions for sustainable improvement of productivity. To ensure that research problems addressed are relevant and research findings are effectively applied, effective partnership linkages need to be established among national and international research agencies as well as with national and local planning, development and administrative agencies, emphasizing on the complementarity of mandates and functions of the partners.

IRRI was given the responsibility to convene the Ecor(I)Asia, and is mandated to launch the initiative at pilot sites identified by the Ecoregional Working Group (EWG), which comprises representatives from international research organizations and the national agricultural research organizations from various Asian countries. From the experience of the first pilot site, the Red River Basin in Vietnam, we developed the following general approach to carry out ecoregional research. The first step is to develop a common vision among stakeholders for NRM in the target site and to identify the key issues and problems to be addressed. This provides the basis to identify gaps in on-going NRM research activities, particularly emphasizing those aspects that will benefit from better coordination through multi-institutional, multi-

disciplinary collaboration. A coherent research agenda is then drawn out in consultation with NARS, IARCs and ARIs concerned with NRM. While the Initiative functions to promote exchange of ideas, experience and expertise; and facilitate capacity building, and to catalyze the development of research and operational methodologies for implementing the ecoregional approach, a strong and committed national institution needs to be identified to provide the leadership in implementing the research agenda, seek channels to reach stakeholders, and facilitate partnerships amongst national and international institutions.

2. Main sets of Ecor(I)Asia activities

Since its inception in 1996, the Ecor(I)Asia has initiated a number of research activities, which may be summarised into the following categories.

1. The development of research and operational methodologies

Research methodologies developed to address specific ecoregional NRM and land use analysis and planning issues include the following:

- Rice supply and demand analysis (RSDA) for studying the implications of rice production to meet national demands on land use and resource requirements at sub-national level
 - Land use planning and analysis system (LUPAS) of the SysNet Project, which is a decision support system for exploring scenarios of land use and resource allocation to meet competing demands and stakeholders' objectives.
 - Participatory natural resources management (P-NRM) of the SAM Project in the uplands of the Red River Basin, to develop methodologies for upscaling research on sound NRM practices from farm to regional level.
- ### 2. The development of operational R&D methodologies to facilitate the transfer of research findings to practical implementation and to increase impact of research in land use planning and NRM. Two major efforts have been made:
- The development of a systems research network (SysNet) among four countries for developing, testing and implementing the LUPAS methodology; and
 - The development of R&D partnership models for integrated natural resources management at the ecoregional pilot sites in Vietnam and Thailand.

3. Supporting activities to build the knowledge base and lay the foundations for specific ecoregional projects under the Initiative, including the following:
 - The establishment of pilot sites at the Red River Basin in Vietnam and the Korat Basin in Northeast Thailand
 - The establishment of databases on ecoregional NRM
 - Organizing thematic workshops on research issues and training courses on new methodologies

3. Methodology integration

Given the complexity of NRM problems, it is recognized that there is no single set of methodology that is all encompassing for research to solve NRM problems at the ecoregional level, and that different methodologies have their respective utility and roles in ecoregional research. While the Initiative started with promoting a “basket” of techniques, the ultimate aim is to accomplish the integration of methodologies in a complementary manner to tackle NRM issues along the various ecoregional dimensions. The complementarity that is being sought is in terms of themes / scales / partnership mechanisms.

The hypothesis we adopt is that in order to achieve greater impact in NRM, we need to go beyond field research to regional level in order to achieve broader impact, i.e. the dimension of regionalizing (R); to bridge more effectively the research to development continuum (the D dimension); and to augment mono-disciplinary research with inter-disciplinary approaches, i.e. the dimension of multi-disciplinarity (M). These three dimensions of “eco-regionality” are depicted in Figure 1.

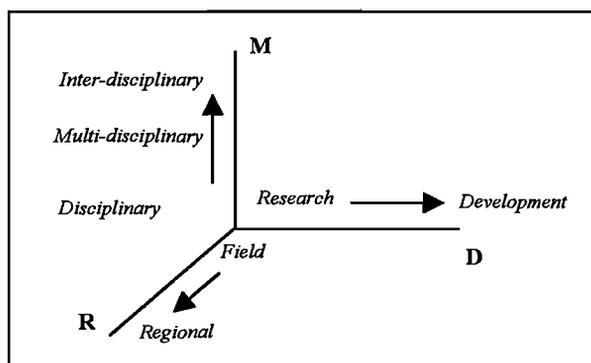


Figure 1. Three dimensions of "eco-regionality"

Under the Ecor(I)Asia, a number of research methodologies have been developed, as listed above. So far the different methodologies have evolved independently from each other. Each methodology addresses particular aspects of ecoregional research, and at different scales of geographical and organizational coverage, as depicted in Figure 2. There is a distinct opportunity to integrate some of these methodologies in a complementary manner that will meet the goals of ecoregional approach to land use planning and NRM.

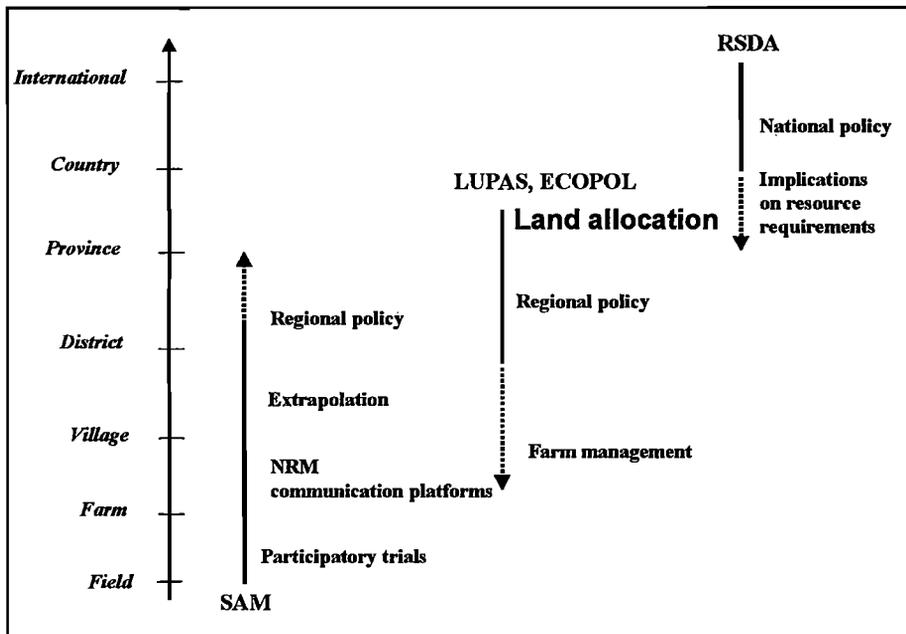


Figure 2. Multi-scale integration in methodology development in Ecor(I)

An example of methodology integration to be implemented at a common site is in the uplands of the Red River Basin of Vietnam. A common methodological framework has been developed under the Ecor(I)Asia, where biophysical dimensions are linked with socioeconomic and policy considerations through the incorporation of complementary tools: the participatory NRM of the SAM project, the policy analysis of the ECOPOL project and LUPAS of the SySNet project. The three methodologies will be brought together to address the issue of sustainable agricultural development in a fragile environment to improve the food security situation and alleviate poverty of the various ethnic communities who have been subjected to changes in policy that affect their livelihood and to increasing market integration.

The Mountain Agricultural Systems (SAM) project, started in 1997, introduces appropriate and environmentally sound agricultural interventions at farm level, as well as studies to upscale the findings of farm-level research to regional level. For sustainable development at the regional level, it is important that the cumulative effects of resource use at the farm level would not deplete nor degrade the environment in the long run. Conversely, it is important to consider overall land use planning options that are realistic and consistent with community interests. The LUPAS methodology is introduced in 2000 as a means to identify possible land and resource allocation options that may be considered by policy makers and regional development and management authorities. By the same token, the ECOPOL (Economic and Policy Analysis for the ecoregional approach in South East Asia): a joint CGPRT¹-CIRAD² research and development project can contribute by identifying agricultural and economic policies and strategies that are compatible with and will facilitate the most desirable scenario of land and resource use. Such a chosen scenario reflects the best compromise that would be reached between regional planners and administrators and the local communities. The regional component of the SAM project, which emphasizes a participatory approach to upscale farm-level research to larger areas, provides the means to move agricultural change along the pathway from the present to a future, desired scenario.

As shown in Figure 3, integration of the three methodologies leads to more complete coverage of the three dimensions of the ecoregional approach, and would increase the impact of ecoregional research in achieving the goals of sustainable agricultural development. Research teams operating in the three projects mobilize tools from the other project and conduct research and development approaches based on their combination. The methodology integration is being tried out in the uplands of the Red River Basin to take advantage of the ground work, partnerships and data collection that have already been initiated by the SAM project. Our further vision is to harness the interactions from ecoregional partnerships to address NRM issues across the toposequence from the uplands to the delta within the Red River Basin.

¹ ESCAP Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific.

² International Cooperation Centre of Agricultural Research for Development.

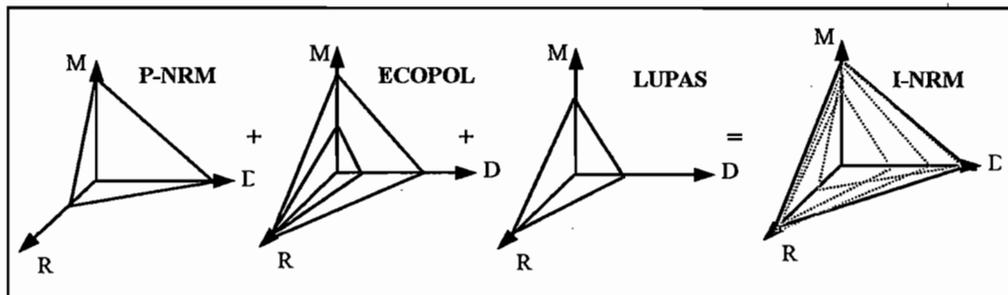


Figure 3. *The relative coverages of three research methodologies along the axes of "eco-regionality"*

The expected outputs of the study include the following:

1. Identification of tools and data needed to integrate community-based NRM, land use planning and policy analysis with the objective of reaching a sustainable increase of rural income.
2. A common multi-scale database for natural resources management and policy analysis for each research site.
3. A comprehensive multi-scale analysis of the main stakeholders as identified in each zone.
4. Methodological synthesis and practical guidelines for integrating economic and institutional policy analysis tools with land use study and participatory NRM tools.

4. Partnership mechanisms

A pre-requisite for such methodology integration, which involves participation and varied expertise, is effective partnership mechanisms. Partnerships are an integral to the ecoregional approach to land use planning and NRM developed under the EcoR(I)Asia. A new approach to partnerships is needed to move from linear technology transfer (one theme, one location, one institution) and consortia (one theme, several locations and institutions), to the ecoregional framework for studying several themes at one location with several institutions, and ultimately bringing the experience to several themes at several locations with several institutions.

Given the complexity of land use and NRM issues, a holistic approach in tackling these problems requires partnerships to be forged at different levels. These partnerships are subservient to the demands of problem solving, and are dynamic in terms of membership and collaborative mechanisms. Partnership development within an ecoregional framework is based on