MANAGING NATURAL RESOURCES (ASIA)

Community-Based Natural Resource Management

Phase II Prospectus 2000 - 2003

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IDRC/CRDI
May 2000
## List of Acronyms

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<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CBNRM:</td>
<td>Community-based Natural Resource Management</td>
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<tr>
<td>IMFN</td>
<td>International Model Forest Network</td>
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<td>INBAR</td>
<td>International Network for Bamboo and Rattan</td>
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<tr>
<td>MINGA</td>
<td>IDRC Program Initiative: Alternative Approaches to Natural Resource Management in Latin America and the Caribbean</td>
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<td>PI</td>
<td>Program Initiative</td>
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<td>PLAW</td>
<td>IDRC Program Initiative: People, Land and Water (Africa)</td>
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<td>PO</td>
<td>Program Officer</td>
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<td>SIFR</td>
<td>Strategy for International Fisheries Research</td>
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<td>SUB</td>
<td>IDRC Program Initiative: Sustainable Use of Biodiversity</td>
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Executive Summary

This program initiative will support interdisciplinary innovations for local management of productive natural resources in order to sustain food production and livelihoods in threatened agroecosystems. The PI is regional in scope and based in Asia. Within this large and heterogeneous region, the geographical focus of the program will be on marginalised regions and poor countries. The research will concentrate on upland or coastal agroecological zones, which are at serious risk of irreversible degradation due to a variety of locally, nationally and globally-driven causes.

Research under this PI will be carefully grounded in local perspectives and priorities. It will examine substantive issues of production technology choice and adaptation, policy change, institutional development and governance, monitoring and information exchange in relation to local management of productive resources. The research work will be interdisciplinary, seeking to integrate perspectives of natural and social scientists, of production systems, social and institutional analysis. Methods will of necessity be highly participatory and flexible in response to local needs. Equity is a pervasive issue in local resource management, so analysis of social and gender inequities in resource control and use will be an essential element of the work. This kind of research is difficult and time-consuming, and requires a high level of research, coordination and communications skills. It is also vital to natural resource management and rural development in the region, as millions of the rural poor depend on increasingly threatened resources and governments and donors commit increasing resources to community-based approaches with little appreciation for the complexities involved.

The Centre's niche in this field is its commitment to grassroots innovation and local capacity-building. Other research agencies tend to focus on reductionist approaches to technological improvements. Non-governmental organization (NGO)s and development agencies try to implement integrated rural development approaches using the rhetoric of community management, but lack an appropriate understanding of crucial constraints, analytical issues, and alternative approaches. This Program Initiative (PI) is intellectually and programmatically linked to several others within the Centre, particularly the other regional MNR programs: Alternative Approaches to Natural Resource Management in Latin America (MINGA), and People, Land and Water - Africa (PLAW), but also Sustainable Use of Biodiversity (SUB), as well as Vietnam Economic and Environmental Management (VEEM), and the International Model Forest Network (IMFN).

Research projects may focus on methodological or institutional innovations, but the core of the program will be a series of linked, long-term, site-based studies. Due to the difficulty of the methods, the need to develop capacity at the outset, and the importance of establishing and maintaining good working relationships with local communities, IDRC commitments should expect to be long-term, if local partners prove capable and productive. Projects will be linked
through networks which share research ideas, experience, and support team training and field exchanges. Canadian expertise has been important in establishing and guiding the PI's work, and there may be potential for involving new partners who are working on similar kinds of issues (developing institutions for local natural resource management) in Canada, where both they and our developing country partners would benefit from mutual exchanges.

The PI workplan emphasizes the continuation of successful long-term, site-based interdisciplinary projects. It also places increased emphasis on evaluation of experience gained to date, the critical assessment of best practices and the extension of lessons and case materials into the development of capacity-building programs. Some elements of the workplan will be specifically undertaken in collaboration with other PI's. The nature of the workplan implies a shift in staff time away from project development towards "knowledge-intensive" activities which build on project experiences and extend the reach and impact of our work.
1. Background

Despite rapid industrialization and a well-established historical network of large cities, most people in Asia remain directly dependent on a productive natural resource base for their livelihoods. Unfortunately, pressures on this resource base are increasing. Urban-biased industrial development and non-locally managed international investments in export-oriented resource development are leading to resource degradation. Resettlement due to displacement, voluntary migration and historical conflicts exacerbate these resource pressures.

Rural populations have increased rapidly with the improvement of basic health and living conditions. This leads to an expansion of cultivated land, even into areas which are ecologically fragile or inappropriate for permanent cultivation. Within communities, power and gender relations often marginalize specific social groups. Systems of resource tenure and access are complex, with traditional, culturally-specific systems modified by colonial and state regulations which may be changing rapidly with national economic policy reforms.

1.1 The Challenge

Problems related to the sustainable management of natural resources are most critical in the uplands and coastal areas, where natural resource degradation can lead to often irreversible loss of food productivity and the breakdown of ecosystems with loss of habitat. A widespread process in Asia is the privatization of natural resources such as forests and coastal areas which were previously collectively managed. Privatization may lead to productivity increases in the short term, but frequently it also increases poverty because poor people who previously had access to these resources are now excluded.

'Traditional' policies and research have often discounted the role of local people in designing and implementing solutions for these problems. Proposing an alternative approach, the CBNRM program works with the local men and women most directly involved with natural resource management. Often they are the poorest of the rural poor or belong to ethnic minorities which are politically and economically isolated. The CBNRM program recognizes that these men and women may have intimate knowledge of the local resource base and that they are motivated to improve productivity if they can be assured of benefitting.

1.2 An innovative response

The CBNRM program deals with resource degradation and rural poverty in mountainous and coastal areas of South and South-East Asia by promoting research for development innovations to improve the productivity and sustainability of local resource use. These innovations can be technical, such as intensifying shifting cultivation or improving aquaculture. They can also be institutional or policy-focused.
However, neither technology nor institutional changes nor policy reform alone is sufficient to address poverty because in many cases resulting benefits are captured by those who are already better-off, such as landowners or farmers with good market access. Therefore, CBNRM addresses the interactions among the factors that influence natural resource access, use and management patterns.

The participation and leadership of local people are essential in CBNRM's approach as innovations must be built on voluntary improvements to local knowledge and practice, rather than imposed from outside. It also requires recognition of the heterogeneity and multiple interests of different community members and outside resource users.

1.3 Corporate Strategy and Program Framework and Other Program Initiatives

The overall objectives and approach articulated above are directly supportive of the Centre’s mission of empowerment through knowledge and its goal of building Southern capacity to generate and use knowledge in ways that alleviate poverty and improve peoples' lives. The work of the PI will contribute directly to the “Managing Natural Resources” Program Area, but many of our programming objectives are also consistent with those of the "Social and Economic Equity" Program Area.

This approach to local natural resource management shares methodological tools and experience with other regionally-based Pis in the MNR PA, such as MINGA in Latin America, and PLAW in Africa/Middle East, as well as the global SUB. It also is reflected in the work of several Secretariats, particularly IMFN, and the co-funded VEEM program in Vietnam. The common intellectual threads of this work are represented in some of the principles above: interdisciplinary research teams working in participatory fashion with local communities to develop technical and policy innovations which increase equity, sustainability and strengthen local livelihoods. The substantive focus of the research and the geographic, political and cultural context varies widely between these different programs. These variations will limit the applicability between regions of sensitive participatory methods, or of specific policy or technical interventions. However, there is much which CBNRM already shares with other program delivery groups. We have already co-funded projects together with other PIs and have shared resource materials and research outputs. Our workplans for the coming period have specified common activities with other PI’s (see details below in section 3.7).

1.4 Geographic Focus

Asia is a very large and heterogeneous region. The PI will continue to focus our resources on the poorest countries in the region, and in some of the marginalised regions of larger countries. These target areas are the least able to link their development needs to local research capacities, and are the most constrained by available resources. Most of these countries have weak research institutions. In the transition economies of Vietnam, China, Laos and Cambodia,
institutional capabilities and academic skills in social sciences are particularly limited. As a result, **capacity-building** will be a continuing priority of the program, and research effort should be seen in this light.

### 1.5 Timeliness and Opportunity

The CBNRM approach is highly relevant to the current development context in Asia. While circumstances differ in different countries, there is a striking convergence of interest in questions of local resource management. Structural adjustment in some countries is leading to reductions in the technical and enforcement capability of the State. In others, major policy transitions are affecting all aspects of government intervention in the economy. Local governments and grassroots organizations are at the same time becoming more assertive and articulate in their identification of resource conflicts and degradation. External pressures due to expanding trade and investment, and large-scale development projects in parts of the region previously isolated from international markets, are also having a dramatic effect on local resources. The expertise required to build interdisciplinary approaches to these complex issues is not widely available in the region. External reviews of this program suggest that IDRC has been at the leading edge of identifying and responding to these concerns over the past few years. With our own modest investments we are now in a position to gain increased recognition, leverage and impact for this work.
Development of Local Planning Process in Bolinao
A community-based coastal resource management project established innovative local resource assessment and planning processes which led to the formation of resource user groups and to heightened local environmental awareness. When senior governments and large corporations proposed to build an unanticipated cement plant in this coastal municipality, the local resource groups set up an environmental review. They concluded that damage to the productive resource base outweighed the plants employment advantages, and organized public opposition on environmental grounds to force the cancellation of the project. Now, neighbouring municipalities want to institute their own participatory procedures for resource assessment and planning, and community-based resource management organizations are being recognized and institutionalized by senior governments to reduce future conflicts. The resource groups and local planning processes developed by the research project have led to a new view of community-based planning by official government agencies.
Project: Community-Based Coastal Resource Management - Philippines
Implementing agencies: Consortium of Marine Sciences Institute, University of the Philippines (UP), Diliman; College of Social Work and Community Development, UP Diliman; and Haribon Foundation.

Guizhou: Innovative Extension Methods and Production Systems in Degraded Uplands
Minority people of the mountainous Province of Guizhou are among the poorest in China. With a small land base and difficult production environment, many families face seasonal food deficits and calorie and protein intakes are insufficient. Working in two villages, research teams introduced improvements in agricultural and forestry systems and in village health and food security. Innovations have included the adoption of more participatory methods which respect local knowledge and experience. Local governments have actively supported the work and recognized the implications for re-organizing public services and resource management systems.
Project: CBNRM in the Mountainous Area of Guizhou Province, China
Implementing Agencies: Guizhou Academy of Agricultural Services, GAAS Hospital Staff, Guizhou Nationality College Guizhou Rural Policy Institute and The Peoples Government of Changshun County

Capacity-Building in Hue Province, Vietnam
Central Vietnam is the poorest part of the country. The sandy, saline soils around the Tam Giang lagoon system support only limited agriculture and fishery yields appear to be declining. Local researchers had studied fish biology and rural sociology and ethnology, but had never attempted to systematically study traditional lagoon fishery management practices, or to develop alternative livelihoods tailored to the resource base and productivity problems of the lagoon communities. Over several years of field research in interdisciplinary, multi-institutional teams, researchers have developed a more sophisticated view of the dynamic resource use at two different sites in the lagoon. In one site, a boom in aquaculture has led to a proliferation of fishnet enclosures on the lagoon, essentially "privatizing" a resource which was previously common property. In another site, a community reliant on fishing to supplement agricultural income has been able to introduce technical innovations to both agricultural and aquaculture systems, benefiting some of the poorest households. The tools and skills learned by the Vietnamese institutions have enabled team members to contribute to new perspectives on provincial policies and other development projects.
Project: Community Based Resource Management in Tam Giang Lagoon
Implementing agencies: Consortium of Hue University of Agriculture and Forestry, Hue Science University, Fisheries Service of Thua Thien Hue province.
2. Goals and Objectives

2.1 Goal

To develop and transfer technical, methodological, analytical, social/institutional and policy innovations for more productive, equitable and sustainable natural resource use by communities in ecosystems facing environmental stress and degradation in Asia.

2.2 Specific Objectives

All of the PIs specific program and research objectives will be implemented in collaboration with village-based resource users, collectively and separately by social group, paying particular attention to gender, ethnicity, age, socio-economic class. The PI, through support to its research partners, will more specifically:

1) Identify and analyse the local resources and livelihoods under greatest threat and disaggregate the micro- and macro-causal factors leading to degradation, as well as the differential impacts such degradation is likely to have on women and men.

2) Develop new technologies or adaptations of indigenous systems which make more productive and sustainable use of privately- and collectively-managed resources at the community level.

3) Improve or promote institutions for the assessment, management and monitoring of natural resource use at the local level.

4) Develop new mechanisms and processes for resource planning, access to information, co-management and policy interaction between local communities and various levels of government.

5) Compare and exchange lessons and experience in CBNRM between communities, research institutions, and government agencies within the region and in Canada.

1Examples could include: swidden intensification systems, land reclamation systems, intensified agroforestry or farming systems, enhanced marine resource production, protection and improvements to breeding and nursery habitat for fisheries.
3. Program Implementation

3.1 Research Focus and Methods

While disciplinary and technical expertise is an important contributing factor to successful CBNRM research, there has been a historical tendency for such research to become overly reductionist in pursuit of technical productivity gains and academic recognition. Sustainability of production requires that linked natural systems be kept in balance, not that they be managed to maximize output in one or two narrowly-defined dimensions.

Resource management requires collective action as well as individual incentives. It cannot be addressed by individual farmers or households alone. This means innovations require an appreciation of different kinds of organization and decision-making, ways of organizing incentives, rights of individuals and groups, social obligations and penalties. Without a clear understanding of these factors, technical improvements are likely to go astray.

In examining the issues linked to biophysical constraints, productivity enhancement and improved local capacity to manage resources sustainably, we expect research efforts to consider such issues as:

- indigenous or traditional environmental knowledge: how to evaluate and integrate such knowledge and enhance its positive aspects
- conflict management: processes for better information exchange, stakeholder identification, participatory planning, negotiation and monitoring of resource use by local organizations
- government roles: legitimate and supportive roles for governments in terms of technical and information support, enforcement and sanctions
- cultural perceptions and institutional arrangements: particularly those that make it difficult for certain social groups (e.g. women) to express and interpret their resource needs and options, and how to support such disadvantaged social groups towards greater participation
- tools and methods: improvements to tools for awareness-building, mobilization, diagnosis, organization, analysis, monitoring and evaluation.

The integration of these quite different elements of the research agenda is one of the most challenging aspects of the program. A central feature of the research approach adopted in this program is that it focuses on the systematic integration of high-level expertise in natural sciences (production technologies, biophysical resource assessment) with equally sophisticated social science perspectives on the analysis of community decision-making processes and external institutional environments, along with local knowledge, to increase competence and sustainability in managing local resources.
One of the challenges in adopting this approach is to ensure that IDRCs research investment will lead to generalizable or extrapolable conclusions. The research work must by nature typically be focussed on a specific site(s). Typically, the interventions adopted by any individual community will have unique elements tailored specifically to their social and biophysical context. But the methods, tools and processes by which local options are defined, and the policy and productivity boundaries which constrain them, are important and transferable lessons from the research effort.

3.1.1 Multidisciplinary and Interdisciplinary Research

Multidisciplinarity involves parallel inputs from different disciplines without requiring consultation between them. Interdisciplinarity implies interaction between different disciplines in relation to the research problem and throughout the research process, beginning ideally with the definition of the problem.2

Interdisciplinary research requires the participation of disciplinary experts, but seeks to synthesize new methods and innovations which do not derive from any single disciplinary heritage. Multidisciplinarity is a minimum requirement for research in this field, and one of the objectives of the PI is to encourage the development of interdisciplinary skills. The process of working in interdisciplinary research teams is new to many of our recipients, but it is one which we believe is essential to this kind of problem-oriented work. Collaboration between social and natural scientists is particularly difficult given their different disciplinary approaches to knowledge and validity in research methods and outcomes. The PI will foster interdisciplinary work wherever possible as an essential element of its capacity-building efforts.

The challenging nature of multidisciplinary and interdisciplinary research necessarily imposes both higher costs (more time) and greater risks (unfamiliarity, inadequate team management or communications) on the research process. It also means that productive outcomes may take more time. In spite of these drawbacks (indeed, one could argue because of these drawbacks) there is an important role for IDRC to play in supporting such research, and potentially large development benefits to be gained from the learning which accompanies such research. The PI will seek opportunities to evaluate and demonstrate the benefits of multidisciplinary and interdisciplinary research in this field.

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3.1.2 Participatory Research

CBNRM approaches empower communities by giving them greater direct influence over the use of natural resources essential to their well-being and that of future generations. Successful innovation will rely on the adoption of participatory approaches to the research activities. Participatory rural appraisal methods represent a growing family of methods that emphasize local knowledge and enable local people to take the lead in identifying their development needs and constraints. Participatory methods recognize that within any community there can be many different social groups who cannot be assumed to share common objectives, or to be equally empowered to articulate and promote them. The approach also recognizes that there is an important role to be played by knowledgeable external agents who bring their experience to a local situation and, through adaptive methods, add value to local knowledge and management systems.

3.1.3 Gender and Social Analyses

Gender and social analyses add depth to understanding of community power relations and resource use, and are an important complement to participatory methods. Social analysis is a way to systematically investigate social processes and under this framework it is important to identify key stakeholders and participating decision making groups and individuals. Gender analysis will be used to understand and document differences in how gender roles, activities, needs and opportunities are being defined, negotiated or transformed in a given context. This enables researchers to highlight the different roles and relationships of men and women based on the interplay of culture, class, ethnicity, income, education and time.

3.1.4 Co-management or joint management

Co-management is sometimes defined as the sharing of management responsibility and authority between the state and local levels of administration. For the purposes of this document, we will treat the term as involving the identification and allocation of policy and management responsibilities between the central State and the local government. Durable forms of Community-based Natural Resource Management are likely to involve some kind of co-management arrangement for several reasons:

- the forces impacting local natural resource use are beyond the control of local levels of government.
- the State typically holds authority for resource management now and must designate specific responsibilities to be legally devolved in a CBNRM situation.
the impacts of resource use by one community will affect the resource potential of its neighbours. This may require a coordinating, planning and dispute resolution process instituted by a senior level of government.  

• in order to enforce resource use controls, community-based management strategies will usually have to rely on the powerful sanctions which only the State can bring to bear.

Co-management issues are certainly within the purview of the PI. However, these issues are largely aimed at legal and policy arrangements between senior and junior levels of government. These linkages (policy, administrative, extension) which relate local resource users to official agencies at the local and State level will be valid elements of the research program, but the emphasis in the PI will be normatively focussed on strengthening the local end of such management institutions.

3.1.5 Institutional Analysis and Policy

Institutional analysis recognizes that organizations or groups of individuals exist to achieve a particular purpose and are bound by common interests. Organizations evolve within the institutional framework but also influence that framework. Institutional and behavioural analysis is important if we are to understand how policies, rules and regulations affect the behaviour of individuals and groups and the outcomes of this behaviour on natural resources. Institutional analysis focuses on the set of rights and rules by which community groups organize resource governance in collective situations. The purpose of this analysis is to separate underlying rules (institutions) from the strategy of the players (organizations). It is important to recognize both formal (policy / regulatory) and informal (local, traditional, socialized) institutions governing resource use practices.

Innovations to institutional structure are normally enacted or enabled through policy changes. CBNRM efforts have a low chance of success when local or national policies contradict action plans that communities attempt to implement. Not only is it important to ensure that broader policies be evaluated but it is also necessary to bring policy makers into the research and CBNRM process to encourage a bottom-up approach to policy assessment and implementation. An important element of such a policy approach will be to generate policy innovations which result in more equitable gender and social opportunities for natural resource management at the local level.

The key aspect of this element of the research program is to understand the linkages between local resource and equity outcomes and local and national policies in order that local and national decision-makers can improve policies. These linkages may be indirect, but in all cases, better assessment of policy in relation to local resource management productivity and social equity issues is essential. Such assessments require an understanding of local political and developmental realities, and must be sensitive to the existence (or not) of adequate political space for policy reform.
3.2 Time Frame and Duration of Research Efforts

The kinds of social and institutional processes involved in this research are sensitive. They invariably involve delicate issues of local politics, and frequently the allocation of rights to scarce productive resources. The researcher is usually not an objective external observer, but an active participant in local processes. This arrangement offers high learning potential, but it is a delicate and risky situation. A great deal of time is needed to build the close working relationships and trust which are essential to success.

On the biophysical side, the processes of degradation are complex and can be difficult to measure. Marine resources are difficult to monitor. Changes in micro-climatic factors and ecosystem dynamics are difficult to identify as they are occurring. Usually this requires a lot of data, often over long periods of time, and even then changes can sometimes only be demonstrated after they have crossed reversibility thresholds. At the same time, the effect of production system interventions usually requires several seasons to verify.

Research results are likely to remain only at the indicative level for a period of years, possibly through several phases of funding support. Indicative results can be useful, but benefits in terms of measurable outcomes and cumulative learning are likely to expand exponentially in relation to the duration of research support. This is particularly true for community- and site-specific studies, rather than projects oriented to the development of policies, tools or methods. Therefore, due both to considerations of local relationships and for cumulative data collection, these site-specific studies are likely to be of long duration, and should be approached from the outset with the expectation that, if productive, initial support could be maintained and adapted (on satisfactory evaluation of progress) through several phases over a period of 5-10 years. In such cases, efforts must be made to generalize and transfer lessons widely, as replication of such intensive and long-term funding will be limited.

In response to these constraints, the PI will select site-specific projects carefully and devote more effort to critical evaluation of progress (looking for evidence of short-term benefits to the subject communities as well as transferability). We will attempt to maximize impacts of research in progress through exchange visits between teams and projects, and through project structures which emphasize on-going lessons and transferring information.

3.3 Training and Capacity-Building

PI-supported researchers have identified a number of areas in which further training is needed. They have also identified the need for training of trainers at the grassroots level and for leadership training in the communities in order for CBNRM innovations to be sustained locally. The PI will organize various approaches to training in the following areas:
• the initial planning of research as well as participatory monitoring and evaluation throughout the process;
• qualitative and quantitative research methodologies for CBNRM (moving beyond participatory rural appraisal, recognizing its limits). Especially important is the integration of biophysical and social research techniques (analysis, concepts, statistics, field instrumentation);
• gender, social and institutional analysis;
• conflict management principles and approaches;
• technical skills and data integration: computer and Internet literacy; English language; spatial analysis and mapping (geographic information systems (GIS), surveys, etc.).

In order to implement this training, the PI team will explore a number of the mechanisms suggested by our researcher teams. These include:

• training scholarships for both short course and degree programs (IDRC as scholarship awardee or IDRC as facilitator);
• interactive hyper-media courses (Internet);
• short term training courses with small research grant opportunities;
• small research/training grants targeted at individual researchers;
• echo-training (the trainee, in turn, must provide training in home country/institution). This requires follow-up support including translation of training materials and should be linked to an institution which can continue the training function.

Training and capacity-building is often a high priority of other donors, and this is an area which will be actively explored for co-funding potential. Possibilities might be a scholarship program for degree training at key international centres in related disciplines, or the development of a short-course curriculum including several key elements of community-based resource management and methods. A small grants program could also be a useful device for capacity-building. Training will be implemented through research projects, through specific training courses or workshops delivered by experts, through formal registration in university courses, and through interaction between projects and resource persons in the form of various network activities.

3.4 Networking

Networking provides opportunities to enhance learning through substantive interaction between projects and researchers and fosters introduction of new methods and concepts. Our experience suggests the most effective way to do this is to involve people in face-to-face opportunities to exchange information, opinions, and to show each other field cases. This builds relationships, confidence and trust, and serves as a basis for electronic interaction.
Networking is already a feature of PI operation, and will continue to be important. Current active networks include:

**People and Resource Dynamics Project in Mountain Watersheds (PARDYP):** The network is parallel funded by Swiss Development Cooperation (SDC) and includes half a dozen active institutions in four countries in the Hindu Kush Himalaya region. There is a single project leader, and training, methods, concepts and results are shared at regular meetings. Electronic interaction is growing as participants build interactive CD-Rom project documentation.

**Coastal Resources Research Network:** This network involves researchers in Cambodia, Vietnam and the Philippines, with linkages to Canada and Indonesia. The network shares information, organizes training sessions and provides project feedback. There is a single coordinator and a quarterly newsletter. Email interaction is quite active.

**Degraded Lands - China:** This network is coordinated by the Chinese Academy of Forestry (CAF), involving projects in 4 provinces of China, including parallel funding from CAF and the Center for International Forestry Research (CIFOR). There are regular meetings, shared training, information and progress reporting.

**Vietnam Economic and Environmental Management:** this program, cofunded by CIDA, has established a network of coastal research institutions and small grants projects in Vietnam. Network members share methods training, research results and publications.

In addition, other activities support research interaction with the CGIAR system (Consultative Group on International Agricultural Research) and the Australian Centre for International Agricultural Research (ACIAR) through project involvements in Bhutan and Laos.

Recipients have indicated such networking support is helpful to increase not only the rate of learning (from colleagues and case studies) but also to strengthen the impact of the research work. It encourages the spread of useful new concepts and helps researchers to demonstrate the value of their work. Networking is very important in the countries in which we work, to help legitimize innovative topics and issues, particularly in sensitive fields related to governance.

Wherever possible, networking will be strengthened by encouraging and supporting electronic communications to:
• discuss new project ideas;
• develop project proposals;
• maintain contact databases (addresses of all participants in CBNRM research);
• access information relevant to projects;
• present information and research results produced by projects;
• initiate local and global discussions on subjects relevant to CBNRM; and
• exchange information about project progress and financial status.

Special consideration will be given to improving communications links both among PI team members located in Ottawa, Victoria and Singapore, as well as between these members and our grant recipients and partners. However, in the end, it is recognized that the benefits to participants of engaging in various electronic networking activities must exceed the costs of their participation in order for the networks to be sustainable.
Interdisciplinary Research Networking in the Hindu-Kush-Himalayas (HKH)

The Hindu-Kush-Himalaya region includes Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan. The HKH people are under severe stress due to the degradation of mountain resources impacted by unsustainable land-use systems and a rapidly-growing population. Few livelihood alternatives exist outside of the natural resource sector.

The International Centre for Integrated Mountain Development (ICIMOD) in collaboration with a number of national agencies in Nepal, China, India and Pakistan, and with institutions from Canada and Switzerland, is coordinating and leading an interdisciplinary research effort that will analyse the dynamics of land and resource degradation processes in selected watershed areas in these four countries to find ways to promote sustainable use and management systems for mountain agriculture. The project has selected small watersheds and their communities as study units.

Experience from one of the five project sites, the Jhikku Khola Watershed in the Nepalese Himalayas, has highlighted the effectiveness of combining rigorous scientific and participatory research methods. In this watershed the methods used include detailed soil and land surveys and inventories, intensive hydrological instrumentation and monitoring, climate and soil fertility, GIS analysis, social analysis and participatory surveys, and hyper-media methods for the communication of results. Key management issues and methods to address environmental degradation have been identified, including water management in the dry season, soil fertility maintenance, soil erosion control, and other improvements. Local forestry and other User Groups need better tools and more power to take management measures. Project results will contribute to innovations to be disseminated by each of the four participating country institutions. The interaction of the different institutions encourages shared training, results and lessons. Project results are also being used to assemble hypermedia (CD-ROM) training materials for use in both popular and graduate education in Canada and Asia. A Canadian graduate student attached to this project has recently won an IDRC post-doctoral fellowship.

The Swiss Agency for Development and Cooperation has joined IDRC as a granting agency and partner in this project.

3.5 Enhancing Project Impacts

The PI team has identified the following priority target groups for dissemination and communication activities over the next three years: project beneficiaries, researchers, funders, policy/decision makers and non-governmental organizations. Through direct contacts and
exchange, these groups can more easily identify common concerns and shared lessons. Different project-based and program-based information materials will be produced to reach different audiences.

The PI team members will integrate dissemination activities into their work in three ways:

- a closer examination, during the project development stage, of the opportunities and potential for networking and dissemination activities to be built into a project from the start.
- support for specific activities/events, such as the repackaging and dissemination of research results by extension agents; workshops for policy makers; or seminars for researchers.
- development of specific PI communications tools, such as published reports; a social sciences resource kit; a well-developed website through which researchers can access each others results.

3.6 Canadian Collaboration

Unlike research projects which developed from traditional disciplinary bases, and were derived from disciplinary expertise which originated in Northern universities, CBNRM is based on problem-oriented diagnoses originating in developing countries themselves. Since it is new and inherently interdisciplinary in nature, requiring different sources of expertise, Canadian expertise has not usually been found in traditional disciplinary sources. The PI has established collaborative linkages to Dalhousie University (Prof. Gary Newkirk, Coastal Resources Research Network), to University of British Columbia (Prof. Hans Schreier and associates) and to Laval University (Prof. Rodolphe de Koninck and associates), as well as to York University (Dr Peter Vandergeest). Canadian collaboration provides an important mechanism for quality control and mutual learning in our research projects.

Among these are interesting prospects for collaboration with problem-oriented teams in Canada who may be seeking to address similar local issues in natural resource management. While the socio-economic and political contexts are quite different, the resource management problematique in the face of degradation and deteriorating local livelihoods is analogous in many Canadian communities. These parallels could lead to prospective future research collaboration with non-traditional research partners such as community organizations and non-governmental organizations (NGOs) as well as universities.
3.7 Linkages to other PIs

The intellectual linkages between CBNRM and other PIs have been mentioned in section 1.4 above. We expect linkages to those PIs which have common programming interests to strengthen. Current linkages take a number of forms including: integration of research results from one PI to help shape CBNRM projects (e.g. the Environmental Economics Program for South East Asia - EEPSEA); sharing project costs and monitoring (e.g. SUB, VEEM); sharing resource materials such as methodological manuals, guidebooks and references for recipients (SUB, PLAW); and shared training opportunities (MINGA, SUB). In many cases, the shared emphasis on participatory and locally-based development research issues provides fruitful ground for methodological and conceptual synergies. We have had discussions with the IDRC PI MIMAP (Micro Impacts of Macro Adjustment Policies) on shared interests in the realm of natural resource indicators at the local level. Specific joint activities are outlined in our workplan.

3.8 Connections to Other Research Organizations

The scope of the CBNRM research agenda, and its evident importance in the region, has meant that other organizations are also working in closely related fields. The PI has identified some of these organizations, but continues to discover others. In the field of research, the Consultative Group on Agricultural Research (CGIAR) continues to play an important role in fleshing out the research agenda and publishing new academic material. The PI collaborates at the project and program levels with the International Rice Research Institute (IRRI), the International Center for Research in Agroforestry (ICRAF), the Center for International Forestry Research (CIFOR) and monitors system-wide programs such as those on Collective Action and Property Rights (CAPRI) and the on-going Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation (PRGA). In many cases, the CGIAR institutions provide parallel funding in directly-coordinated and unified projects with IDRC. While recognizing the importance of the CGIAR work, the PI also recognizes that much of the international literature is inaccessible to our partner institutions in poor countries with limited English-language capability. Our interests are therefore more oriented to implementation and impact at the national level, rather than academic innovation and international publication.

The PI works with other research organizations and donors in the region to identify common interests and complementarities, so that we can direct our own resources to areas in which they are likely to have the greatest impact. We have ongoing cooperation with agencies such as Ford Foundation, Rockefeller Brothers Fund, bilateral funders like the Australian Centre for International Agricultural Research (ACIAR) and the Swedish International Development Agency (SIDA) and several non-governmental organizations such as World Neighbors and the Canadian University Service Overseas (CUSO). In some cases we can arrange parallel or cofunding for specific activities from these partners. In general, we find many donors continue
to emphasize technical aspects of production systems in their research, while others emphasize only a single dimension of social science issues (e.g. land tenure). We will continue to share information about counterparts and program plans, and look for strategic cofunding or parallel funding opportunities with these other agencies, but we find that few funding organizations take the kind of approach proposed in this prospectus. We feel that interdisciplinarity and integration in this complex field is our strength.

4. Expected Results

The expected results of the PIs efforts are presented here in terms of reach (who will be targeted and affected), outputs (specific examples of products and processes), and outcomes (broader changes that will take place).

4.1 Reach

The PI will attempt to reach the following groups of people who are active in development decision-making:

(i) Rural communities, men and women whose livelihoods are linked to a degrading natural resource base.
(ii) Local and central governments who are often seeking methods for improving the effectiveness of administration through decentralization, but are unsure of approaches to follow.
(iii) Stakeholders including local community groups (formal and informal), non-governmental organizations (NGOs), peoples organizations and others who need to be involved in the strengthening of civil society and natural resources.
(iv) Formal research institutions, researchers themselves and others linked to the research environment who may lack a basic understanding of the CBNRM concept and related processes.
(v) Donors and other international organizations attempting to implement bottom-up participatory research and management programs.

4.2 Expected Outputs

Specific outputs will vary depending on different project contexts. These outputs will come in the form of inclusive processes and strengthened relationships as well as more immediately tangible products such as research and evaluation reports, publications and manuals and events such as dissemination and training workshops, seminars and meetings, and field exchanges.
Examples of some expected outputs are as follows:

- identification of resource uses, access rights, and exclusion mechanisms differentiated by gender, social and ethnic group
- analyses of formal and informal resource tenure issues
- production systems to better meet farmer constraints and requirements in terms of: output, labour, resilience, nutrition and sustainability
- innovative methods, processes, tools, technologies and policies in support of local management of natural resources
- manuals/training sessions explaining new production systems to farmers, NGOs and extension agents
- stronger networks to address CBNRM research methods and approaches
- researchers and community representatives trained in participatory research and planning methods, resource monitoring, conflict management
- recommended policies and programs which recognize role of women and other disadvantaged groups in resource management

4.3 Expected Outcomes

Expected program outcomes are:

- strengthened research, management and local human resource capacities to undertake integrated, multidisciplinary and comprehensive resource management at the local level.
- enhancement of livelihood and food security and improvements in the well-being of communities who are the direct beneficiaries of projects.
- identification of local and national policy options that promote and enhance CBNRM.
- examples of resource users and community organizations meaningfully involved in natural resource management and decision-making processes
- dialogue and communication established and sustained among resource users, communities, researchers, government officials and other stakeholders concerned with resource management issues
- adoption of supportive resource management policies and programs at local and national levels.
- information sharing and exchange between IDRC recipients, other practitioners in the field, researchers, policy makers, community groups and advocacy organizations.

During the second phase of the PI, additional outcomes can be anticipated:

- greater awareness and use of CBNRM methods as a tool for effective governance.
• community organizations accepted by government counterparts as partners in collaborative efforts
• adoption and refinement of innovations developed under IDRC support by other donors, governments, non-governmental organizations (NGOs) and communities themselves
• promotion of policies and programs to enable women and other disadvantaged groups to participate in, and contribute more effectively to the effective management of the productive resource base for sustainable development
• reversal of policies and practices that lead to a degradation of the natural resource base.

Communities and their research partners will need three years or more to develop, analyse and test innovations in the field. Support for evaluation, dissemination and replication will be needed to achieve substantial impact.

5. Plan of Action

This prospectus covers the CSPF period beginning with fiscal year 2000-01. The time frame required for this kind of research means that the general strategy for research activity will be to build on and extend successful experience of existing projects, rather than start very many large new projects. We expect the pattern of project support in this PI over the three-year planning horizon to focus on a relatively small number of large, integrated, multidisciplinary projects. Program funds and external resources will be used to extend or focus the impact of these projects through second phases, training programs, formal and informal networking activities.

In the coming year, the PI will continue to support several long-term, site-based, integrative research and capacity-building projects. Projects like these are the core of our program. Project teams take a long time to gain the experience and skills to do participatory, field-based interdisciplinary work, and the research work typically proceeds through an extended and iterative period of diagnosis, intervention and evaluation over 5-6 years. Lessons in terms of methods, tools, production system enhancement, and policy revisions, emerge gradually with experience along the way, not all in one final analytical burst.

Planned activities for this fiscal year exceed available funds to allow for inevitable project development delays or recipient problems, as well as to provide contingencies for negotiation of detailed resource expansion (RX) agreements for several potential cofunded activities in India, Cambodia and other parts of the region. Depending on how these details work out, some specific activities can be postponed to the following FY.

The pipeline includes a mix of large, multi-year, multi-institution, site-based projects, together with small focused studies of key tools or concepts, capacity-building, evaluation, in-country
networking activities (for China and Vietnam), and “closing-the-loop” dissemination / promotional efforts.

In the coming year, a major knowledge-intensive team activity will be planning and helping our partners prepare for our second Regional CBNRM Forum, to be held in Guiyang, China for one week in mid-October (the first was held in 1997 in Hue, Vietnam). This will be the first opportunity in 3 years for all our partners to meet each other, share project results and lessons, share feedback to us on the direction of the program, and focus their collective and critical attention on specific elements of the program (gender mainstreaming, evaluation, methods effectiveness, training needs, etc). The program will be designed specifically to help the PI team to identify leading research groups and prospective case studies for comparative analysis and dissemination. It will feature collaborative exercises which oblige participants to both seek and provide useful tools and results from / to others. All PI team members, including the Partnerships and Business Development Office (PBDO), and all of our regional research partners will participate in this event, together with a small number of like-minded donors. Outputs from this event will feed directly into other program activities, particularly in terms of prospective RX, evaluation efforts, our assessment of participatory research tools and methods, and the development of multimedia presentation and training modules based on “best practices” from our project portfolio.

Another element in our pipeline for the coming year is the expansion of our programming into Mongolia (on a modest scale). Mongolia shares many features of the other Asian “transition” economies in which our program is active (Laos, Cambodia, Vietnam). It is highly dependent for livelihoods and export earnings on its natural resource base, which has become seriously degraded. Its economic and resource tenure policies are in the midst of being overhauled, and decision-makers are open to innovative new directions. We have initiated an exploratory research activity with the Ministry of Nature and Environment in Mongolia and see prospects for high-impact and rapid capacity-building based on a highly-motivated team with direct engagement in policy-making. We will seek co-funding for future research activities.

The team is also exploring new concepts in a project which will better integrate specific ecosystem analytical tools into a CBNRM research framework, and target sustainability enhancements using broader indicators of community well-being.

A significant amount of staff time, together with PBDO, will be needed to develop and negotiate a second phase of the Nagaland Environmental Protection and Economic Development (NEPED) project in the coming year. We are hoping for major co-funding on this long-term project from the India / Canada Environment Fund (ICEF / CIDA). We will also work together with PBDO to explore cofunding prospects for the continuation of a successful initial phase of a project in Cambodia, and for some of our planned dissemination and capacity-building activities (involving agencies such as the UK-Dept for International Development, the International Fund for Agricultural Development - IFAD, CIDA or various Scandinavian donors).
Other knowledge-intensive work, which does not feature prominently in our pipeline but to which program staff will be committed in the coming year, includes:

- elaborating concepts, specific linkages and research agendas which connect CBNRM to the ideas of “sustainable livelihoods”/ "poverty alleviation" (which have always been intrinsic to our methods, but not well-articulated)
- participating in a multi-donor, international effort to critically evaluate approaches to "capacity-building" in national research institutions.
- synthesizing on-going outcome / impact reporting from projects for program evaluation
- assessing the effectiveness of participatory tools and methods in CBNRM research
- better explaining and promoting our program to internal and external audiences through an improved website / brochure / presentation materials
- conceptual framework for linking project outputs and partner experience to development of website materials, training materials, promotional materials for program
- assessing multimedia CD-Rom tools for comparative analysis, reporting, dissemination and training purposes
- collaboration with the IFAD-supported Electronic Networking for Rural Asia-Pacific Projects (ENRAP) on CBNRM content development for IFAD project website linkages. This may lead to future IFAD co-funding of CBNRM content development and delivery (training modules, on-line toolkits, information exchange).

Many of these proposed activities represent collaborative ventures with other PI’s in the Natural Resource Management program area (see below).

Depending on project development timing and success of cofunding, some of the activities listed above will have to be postponed until FY 2001-2. For that year, we expect our other major program commitments to be:

- a comparative assessment of the social and gender effects of different institutional approaches to devolution of irrigation system management (S. Asia, national research institutions and the CG-International Water Management Institute - potential involvement of PLaW)
- new approaches to coastal project networking in SE Asia
- comparative analysis of watershed management issues in Himalayas and Andes (with MINGA)
- development of specific training modules integrating multimedia / internet tools (priority: Participatory Monitoring & Evaluation, Social Analysis / Gender Analysis)
- continuing support for a few, key large site-based "proof-of-concept" projects

Knowledge-intensive activities of program staff will include:

- extra time for management / research support to co-funded projects (if we get them!)
- identification and supervision of case study / best practices papers from selected leading projects
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- use of new presentation / website / multimedia materials for donor liaison, programming presentations to key partners.
- working with leading research partners to sketch out "next-generation" CENRMP project concepts and methods for piloting in current CSPF

In the third year of the current CSPF, the program would devote substantial staff time (knowledge-intensive activity) to synthesizing evaluation lessons from ongoing project outcome / impact reporting, and applying the results of earlier studies on the assessment of participatory methods and capacity-building practice to the approaches used by the team in project development. Our target for long-term projects will be to eventually hand off ongoing research and implementation support to our donor partners, and direct our limited research grant resources towards testing the limits of CENRMP approaches or developing novel methods and applications. By the end of the third year, we would expect to have a substantial "library" of materials for dissemination / training / publication / presentation, built systematically with our partners on the basis of their learning, to be used for exchange and capacity-building within our project networks and to scale up results and lessons by transferring to other jurisdictions and development organizations. We will seek innovative ways to use these materials (e.g. regionally-based distance-learning courses or internet-based professional training).

Collaboration with other NRM PI's
Previous collaboration has included: provision of toolkits, linking research partners in similar fields (watershed management, conflict management), joint development of case study materials and publications.

In the coming year, we expect to collaborate with SUB in the development and joint funding of a large field-based project assessing marine protected areas as tools for effective community-based coastal resource management. We will work with the IFAD-supported ENRAP project in SE Asia to develop CENRMP content for ENRAP's web-based networking activities. EcoHealth will provide us with intellectual support as we explore applications of ecosystem analysis to CENRMP research frameworks.

In both short and longer term we see considerable potential to increase collaboration with the other two regional NRM PI's. The main generic areas for collaboration are:
- comparison of project results, especially for ecoregional / landscape scale studies (e.g. watershed management - joint activities with MINGA this FY and next).
- assessment of tools and methods used in our research programs, to improve research approaches and methodological rigour (evaluation study with MINGA, PLaW, SUB, and EcoHealth).
- to document "best practices" from existing experience and cases, in specific thematic areas of mutual importance, such as: application of social analysis / gender analysis to sustainable livelihood issues and monitoring; "scaling-up" of site-based lessons to policy-

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makers or replication of methodologies and interventions at new sites (concept paper underway, to be shared with MINGA and PLaW as plans developed for activity in FY2001).
- development and applications of ecosystem analysis to CBNRM research (experience to be shared with EcoHealth and PLaW)
- development of capacity-building or awareness-building tools based on research results (e.g. hypermedia tools - joint effort underway with MINGA)

All of these activities are identified in our 3-year workplan (above), with resources tentatively allocated for Year 1.

6. Anticipated Risks

CBNRM research is particularly difficult because it is explicitly participatory, interdisciplinary and adaptive. In many of the countries in which the PI works, the fundamental concepts of this research (participatory methods, land tenure issues, integrated systems analysis) are very new, and even basic disciplinary methods are weak. Therefore the research program we set out here faces a number of inherent risks:

- risk of conceptual misunderstandings - research teams and projects devote too much attention to the wrong issues, due to conceptual confusion. There is particularly a risk that issues such as tenure, management institutions, and social analysis will be poorly handled by research teams with little experience in these fields, or that they could be handled in a simplistic and romanticized fashion by ideologically committed non-governmental (NGO) partners. There is also a risk that crucial systemically related parameters, methods and analyses such as gender analysis or ecological variability assessment, which are poorly understood, will be mishandled (see further discussion in Appendix 1). These are the traditional risks of undertaking challenging research in a new field.
- risk of miscommunication - multidisciplinary research teams fail to communicate with each other, or with IDRC, what their different research methods will involve. This is a risk associated particularly with large multidisciplinary teams.
- risk of management failure - heterogeneous teams can break down due to very different disciplinary perspectives on the research objectives and process; or multi-institutional research groups can fragment due to institutional rivalries.

There is another set of risks inherent in undertaking this work. CBNRM research must be undertaken in the field. This requires working with real communities. When researchers undertake interventions in the community, especially if the approach is participatory and involves the commitment of local effort, community expectations are inevitably raised. CBNRM research generates expectations among the communities who are the intended beneficiaries of the work. The strategy of selecting poor communities in ecologically sensitive areas also means that local priorities are naturally focussed on day-to-day food security issues. When external
researchers with apparently large resources arrive to help improve conditions for the local community, it is a difficult task to balance the community's legitimate needs for short-term benefits with the longer term interests of the research program. This tension can be a positive one, and reflects the realities in which any innovations must be implemented, but it can also lead to conflicts and resentment between the community and the researchers.

7. Monitoring, Evaluation and Accountability

PI evaluation and accountability starts with project review and approval. The PI's review procedures are designed to ensure that project ideas and preliminary proposals are critically reviewed at an early stage by several team members, within the context of a set of priorities discussed by the entire team. All proposals are to be reviewed in terms of scientific quality, development relevance, viability, risk and impact, gender considerations, networking potential, Canadian collaboration, and the resource enhancement potential. All project proposals are expected to contribute in specific ways to the achievement of the PI goal and objectives outlined in section 2 above.

The program has prepared a monitoring and evaluation plan, and updated this regularly. Results of the external program review undertaken last year were largely positive, and progress relative to the initial Prospectus through the first phase of the PI has been judged by Centre management to be satisfactory.
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CBNRM: Key Problems for Research Teams

Our experiences to date with research teams from about ten different countries in South and South East Asia have indicated that CBNRM concepts and methods are not easily understood. Research teams have been formed and they have begun to execute a research agenda, but it has been difficult for natural and social scientists to fully understand what the work involves. There is a tendency to divide the work along disciplinary lines and there is confusion about the roles that each should be playing as a team.

In the agricultural or natural sciences, the work is often multidisciplinary from a natural science-based perspective, but the social sciences are neglected. These teams use farming systems research methods, which are generally well-executed, but their work often tends to concentrate upon individually-owned and managed resources and they ignore institutional analysis methods as these relate to community-controlled resources. Social scientists have written extensively on "the commons" and common property issues but this work often lacks an understanding of the blending of private property and common property issues and direct research interventions that will benefit communities. Too much of the literature is descriptive and for the benefit of academic debates. Most teams, to date, have not been successful in blending an institutional analysis framework with that of finding systems improvements for individual families and communities through both technical on-farm interventions and social or structural changes. The PI requires this understanding if our work is to be successful.

It has been pointed out that CBNRM approaches often do not give sufficient attention to the dynamics of social and ecological systems. That is, many proponents argue that degradation is due to changes or disruptions in traditional systems of management or practice and that restoring such systems will stabilize the resource base. However, this simplistic view overlooks the extent to which natural resources are highly variable in space and time as shown by ecological theory. Secondly, it is noted that local communities are increasingly acknowledged to be internally differentiated and highly dynamic. This implies that it is important to recognise diverse institutions at all levels of government where institutions are defined or understood to be "regularised patterns of behaviour between individuals and groups in that society" or "complexes of norms, rules and behaviour that serve a collective purpose". With institutional analysis, it is important to know, for example, which people and groups of people have access to and control of what resources, how they manage and control these resources and what are the consequences of these management regimes for their own and others livelihoods. Under a dynamic situation, institutions will change as the environment changes. Finally, one also needs to recognize that local-level natural resource management and institutional arrangements are shaped over time by interaction with wider local, national, regional and global, political, economic and environmental processes. These institutional dimensions are poorly understood in attempts to devise practical strategies for community-based sustainable development. Most
researchers in our current network may partly understand some of these concepts, but in their work they have not really begun to research institutional issues in a systematic way. There remains a danger that their work will ignore or fail to understand this very important component of a CBNRM research agenda.

Another concern relates to gender and development activities within the PI. It seems to be clear that in many western countries gender has been assimilated into development thinking in what appears to be a comprehensive way. Most agencies have gender policies, priorities and strategies; there are gender units, gender specialists and gender reporting criteria and monitoring; and gender issues appear to be well understood. As a result, under the new poverty agenda of some of the larger bilateral and multilateral development agencies and governments there is a move to incorporate gender within a new and broader concept of poverty alleviation programs. When this is done, gender aspects are measured, evaluated and addressed along with general poverty alleviation policies and programs which promote labour-intensive growth, targeted social services and safety nets. The emphasis is on "secure and sustainable livelihoods" but it is argued by many that women will continue to be disadvantaged under this new approach. There continues to be a real risk that researchers and policy makers in the South will not give gender issues the importance it deserves and we need to continue to explicitly highlight gender dimensions of the PI program. Research teams have also stressed to us the need for further training and guidance that will assist them in their work and they note that often less than 10% of their professional and university staff are women.
Appendix 2

Portfolio of Current & Completed Projects

Completed Projects that represent building blocks for the PI

90-0133  Farming Systems (Vietnam)
90-0140  Indigenous Fisheries Development (Laos)
91-0231  Participatory Extension (Thailand)
92-8013  Upland Farming Systems (IRRI/Burma)
92-8305  Social & Natural Resources Use in West Bengal (Bangladesh)
92-8004  Upland Farming Systems (Laos)
92-8021  Food Security in Arid Uplands (Indonesia)
93-8019  Asian Fisheries Social Science Research Network (Phase IV)
94-8010  Policy Reform and Advocacy (Philippines)
92-0011-44 Management of Biological Resources in Tam Giang (Vietnam)
93-8018  Resource Management in Ngam Ngum Watershed (Lao)
93-8310  Watershed Management (Sri Lanka)
93-8008  Community-Based Upland Resource Management (Vietnam)
94-0021  Community-Based Coastal Resources Management (Philippines)
94-8007  Tarim Basin Desertification and Water Management (China)
94-8012  Community-Based Natural Resource Management in The Mountainous Area of Guizhou Province (China)
94-8014  Comparative Analysis on Shifting Cultivation (S E Asia)
94-8006  Integrated Pest Management (Cambodia)
94-8308  Sustainable Land Use Options for Shifting Cultivation (Nagaland)
95-8016  Resource Management Policy in Ratanakiri (Cambodia)
95-8013  Natural Resources Management Network (Vietnam)
96-4025  Coastal Communities and Mangrove Resources (Cambodia)
96-1300  People & Resource Dynamics in Mountain Watersheds (HKH)
96-8001  Community Based Natural Resource Management (IRRI / Burma)
96-8005-01 Indigenous Fisheries Development & Management (Lao PDR) Ph II
97-8001  An Institutional Analysis of ‘Sasi Laut’ System in Maluku Province (Indonesia)
96-0201  Local Strategies for Water Supply and Conservation Management (India & Nepal)
96-0007-01 Environmental Research (Cambodia)
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100077  Farmers' Management of Rice Diversity On-Farm in Coastal Agroecology of Hue

Ongoing Projects

95-8004  CBRM-Reclaiming Degrading Land (China)
95-8005  CBRM-Wetland Production Systems (Bhutan)
96-8007  Ancestral Domain & Natural Resource Management (Philippines)
96-8009-01 Innovative Institutions for Community Resource Stewardship: Building Canada-Asia Partnerships
040396  Coastal Resources Research Network Ph II
01772   Nagaland Environment Protection and Economic Development Project (NEPED)
003417  Indigenous Strategies for Intensifying Shifting Cultivation in SE Asia
004074  Marine Protected Areas
040384  Le Defi Forestier au Vietnam II
004305  Community-Based Coastal Resource Management (Philippines) Phase II
040392  Resource Management Policies in Ratanakiri Phase II
040401  Community-Based Mangrove Management (Cambodia)
040405  Community-Based Upland Resource Management (HCM) Phase II
040406  Community-Based Natural Resource Management in the Mountainous Area of Guizhou Province (China) Phase II
040410  Tarim Basin Desertification and Water Management (China) Phase II
050277  Synthesis of Experience with Collaborative Decision-Making in Central America
004305  Community-Based Coastal Resources Management (Philippines) Phase II
004562  Enhancing Capacity to Engender Research for Sustainable Development (Vietnam)
040407  Natural Resource Management: Hong Ha Commune, Vietnam Phase II
040436  Resource Tenure in Community Based Natural Resource Management: Building
040441  Accelerating Technology Evaluation and Adaptation
040450  Small-Scale Wetland Indigenous Fisheries Management (Laos)
100111  Evaluation of Successes in Community-Based Land and Resource Management (Gitxsan)
100112  Community Forestry, Cambodia
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<td>100119</td>
<td>People &amp; Resource Dynamics in Mountain Watersheds of the Hindu Kush Himalayas (Nepal)</td>
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<td>100361</td>
<td>Catalyzing Change: Local Supply and Conservation Responses to Water Management</td>
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<td>100392</td>
<td>Enhancing Productivity Through Integrated Natural Resource Management (Bhutan)</td>
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<td>100410</td>
<td>Sustainable Management of Common Natural Resources in Mongolia</td>
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CBNRM Staff at IDRC

Guy Bessette

Guy Bessette is a Senior Programme Evaluator, IDRC-HO, Ottawa, Canada and holds a PhD in Educational Technology. His research activities and work at IDRC have been mainly in action-research and in capacity building in the field of development communication in the Sub-Saharan Region. Much of his work has been in the areas of Information Communication Technologies (ICTs) applied to rural planning and development and Networking for NGOs and Community Based Organisations (CBOs) for discussion and joint action in natural resource management.

Brian Davy

Brian Davy received his PhD in Biology from Texas A&M, focusing on fisheries biology and natural resource management. He has worked with IDRC for 23 years, in Canada as well as in Singapore. Since 1994, he has been the Executive Secretary for the Strategy for International Fisheries Research (a multidonor coordination body for enhanced fisheries research and development in the Third World). His interests lie in natural resource management with a focus on aquatic resources, especially integrated coastal zone management and inland watershed management in relation to livelihood options for coastal communities; he has a specific interest in aquaculture within these management systems.

Elizabeth Fajber

Liz Fajber is a Regional Program Officer at the IDRC South Asia Regional Office in New Delhi. Liz is active in project development primarily relating to sustainable management of biodiversity and natural resource management. In particular, she is interested in local/indigenous knowledge and technologies, social/gender analysis, multistakeholder approaches and in enhancing community participation in, and benefits from, applied research activities. She has an M.A. in anthropology from McGill University. Before joining SARO, Liz worked with the Sustainable Use of Biodiversity team in Ottawa, primarily on the medicinal plants program.
John Graham

John Graham is an agricultural economist by training. He obtained his B.Sc and M.Sc degrees from the University of Natal in South Africa where he lectured for six years. He completed his Ph.D at Purdue University in the US and then joined the University of British Columbia as a faculty member of the Department of Agricultural Economics where he taught for nearly twenty years. While at UBC, he also spent time at the International Institute for Applied Systems Analysis in Austria working on the IIASA world food and agricultural model. He has now been with IDRC for 8 years posted in the Singapore regional office. Within IDRC he has worked closely with research groups in South and South East Asian countries in supporting farming systems research methods, an approach which has now evolved further into our current CBNRM program initiative.

Don Peden

Don Peden received his B.Sc. from the University of Victoria in British Columbia, his M.Sc. from Aberdeen University in Scotland, and his Ph.D. in Range Management from Colorado State University. His doctoral studies encompassed the emerging field of systems ecology and his research focussed on wildlife and livestock and nutrition. After graduating, he joined the Canadian Wildlife Service (CWS) in Saskatoon, Canada. From CWS, Peden was seconded to a Canadian-Kenyan team to establish and develop a national livestock, wildlife, and land-use inventory program in Kenya. During the severe droughts of 1984, the team adapted relevant remote-sensing technologies to provide up-to-date, timely and routine forecasts of on-farm maize production. All of these natural resource inventories were integrated into a state-of-the art geographic information system. From 1989 to 1996, Peden served with the International Centre for Research on Agroforestry (ICRAF) co-ordinating ICRAF's agroforestry research in Uganda. During these years, Peden worked closely with farmers' and women's groups to increase understanding of the constraints and opportunities for using agroforestry and related technologies to conserve the land base and improve the livelihoods of rural people in the East African Highlands. Peden joined IDRC in 1996 where he currently serves as a Senior Program Specialist in Ottawa, Canada. He is also an active member of IDRC's Program Initiative "Ecosystem Approaches to Human Health".
Claire Thompson

Claire Thompson has an MA in International Development from the Norman Paterson School of International Affairs at Carleton University, Ottawa, Canada. She has been a Research Officer with IDRC since 1992, working primarily in areas related to environment and natural resources, and joined this PI in 1996. She has a particular interest in issues related to common property resource management and to gender relations. Part of Claire’s responsibilities with the PI are the development of communications and dissemination tools and methods.

Stephen Tyler (Team Leader)

Stephen Tyler has worked with IDRC’s Asia regional office since 1991, establishing new interdisciplinary programs for the region in urbanization, environmental policy, biodiversity and natural resources management. He holds a B Sc in physical geography and biology from Trent University, and interdisciplinary graduate degrees in City and Regional Planning from the University of Calgary and the University of California, Berkeley. Before joining IDRC, Stephen had more than 10 years of professional experience in the field of energy and environmental policy, as a resource policy analyst and program manager with the Alberta government, an international researcher at the US DoE’s Lawrence Berkeley Laboratory, and as a consultant to the World Bank and Asian Development Bank. He has published on energy policy and urbanization issues as well as natural resource management in Asia. His main research interests are on the institutional and policy factors which influence local resource use.

Ronnie Vernooy

Ronnie Vernooy is a rural sociologist. His research interests include rural development, natural resource management, watershed development, participatory/action research methodology, multi-stakeholder approaches and gender analysis. He focuses on South East Asia and on Central America and has a special affinity with Nicaragua where he coordinated field research in both hillside and coastal environments during the periods 1985-86, 1988-1991 and 1997-98. He received his training at the Agricultural University of Wageningen, the Netherlands and joined IDRC in 1992.
Appendix 4

Selected List of Publications by Participating Researchers


Coastal Zone Management Newsletter, #1 November 1999 and #2 April 2000. Prepared and published by Coastal Co-ordinating Unit, Ministry of Environment, Cambodia.


Guizhou Academy for Agricultural Sciences (GAAS) Study on Participation in Utilization and Management of Community Forest Land in Guizhou Mountainous Areas. Forestry and Society, 2000.3.


**Papers prepared for the Community-based natural resource management workshop, May 12-16th, 1997.** Hue University of Agriculture and Forestry, Hue, Vietnam. (Being prepared for publication)


International Center for living Aquatic Resources Management (ICLARM) and North Sea Center (NSC)(1996) ‘Analysis of fisheries co-management arrangements: a research framework’. Fisheries co-management project, International Center for living Aquatic Resources Management (ICLARM) and North Sea Center ICLARM and NSC.


Van Tuyen, T. (1997) 'Management of biological resources in Tam Giang Lagoon'. Hue University of Science, Hue University of Agriculture and Forestry and Department of Fisheries of Thua Thien-Hue Province, Hue, Vietnam.

Web Sites of Interest to IDRC Program Staff and Researchers

Project web sites:

Indigenous Fisheries (Laos)  http://www.usyd.edu.au/su/geography/mekong/fisheries/

People and Resource Dynamics in Mountain Watersheds (Nepal, India, Pakistan, China)  

Hong-Ha Community Project (Vietnam)  http://www.icimod.org.sg/projects/pardyp.htm

Ling mutey Watershed Project (Bhutan)  http://www.icimod.org.sg/projects/pardyp.htm


The overall goal of this activity is to develop common and comparative interdisciplinary methods to evaluate the state of the biophysical and human resources in 8 mountain watersheds in the Himalayan and Andean region and to illustrate successful conservation and rehabilitation approaches. They plan to produce Hypermedia CD-ROM material for four watersheds in the Himalayas and four watersheds in the Andes. These CDs will be developed in an interactive and collaborative manner with research partners in Peru, Ecuador, Bolivia, China, Bhutan and Nepal. All collaborators are research team members that are engaged in watershed research sponsored by IDRC.

Other sites of interest:

Asian Fisheries Society  [http://www.cgiar.org/iclarm/afs]
The Asian Fisheries Society was organized in 1984 to enable fishery professionals in Asia to communicate, share information and cooperate with each other. The Society's objectives are to promote interactions among scientists; to create awareness of the importance and means for sound utilization and conservation of aquatic resources and to promote the establishment of national fisheries societies. Among the networks created by AFS is the Asian Fisheries Social Science Research Network.

The Australian Mekong Resource Centre is a focal point for information, data, local studies and policy-oriented research, discussion and debate on development and environment issues in the Mekong Region. The Centre is inclusive of a range of interested researchers, policy makers,
members of the public, activists, and others who can contribute to a broader understanding of contemporary change in the Mekong Region. The Centre was established in late 1997 and is based at the Department of Geography, University of Sydney but involves and serves the wider community within Australia and overseas with interests and involvement in the Mekong Region.

Can China Feed Itself? A System for Policy Options. By Gerhard Heilig
[http://www.iiasa.ac.at/Research/LUC/ChinaFood/index_s.htm]
This is a decision-support application (CD-ROM) for planners and policymakers. It should help in the evaluation of options for dealing with China's (future)food problems. The core of this application is an integrated analysis of China's food prospects that takes into account biophysical, climatic, hydrological, demographic, social, economic, and political dimensions (see the Arguments section). In addition, a broad range of related data sets were selected, have been converted into tables, maps, satellite images, and charts, and are here merged into an interactive hypertext document. Note that this is also an interesting example of how to organize research results to reach a non-research-oriented audience.

Center for Indigenous Knowledge for Agriculture and Rural Development (CIKARD)
[http://www.ciesin.org/IC/cikard/CIKARD.htm]
CIKARD, located at Iowa State University, focuses its activities on preserving and using the local knowledge of farmers and other rural people around the globe. At this site you will find a number of online documents, and a searchable database with multiple related topics.

Coastal Resources Research Network (CoRR) [http://www.dal.ca/corr/index.html]
The Coastal Resources Research Network (CoRR) supports researchers in developing countries in their efforts to research and promote Community Based Coastal Resources Management (CBCRM). CoRR works with IDRC-supported projects to provide research advice, assistance in training, information exchange, publications, progress review and evaluation. The site includes a regular newsletter, publications and related web links.

Eco-Research Chair - University of Victoria [http://elp.finearts.uvic.ca]
The Eco-Research Chair seeks to make important contributions to a program of sustainability through understanding and promoting structural change by: 1.developing constitutional and economic theories and models of sustainability; 2.providing directions for the ecological transformation of resource-based industries; 3.developing new processes/policies for sustainable cities; and 4.fostering innovative science policies supportive of an ecological transition.
Electronic Development and Environment Information System (Eldis) [http://www.ids.ac.uk/eldis/eldis.html]
The site serves as a "gateway to information sources on development or the environment". It provides access to: information sources arranged by subject, key electronic information sources on development and the environment, information sources arranged by type of organization; information sources about specific geographical regions / countries; libraries, newspapers and other news sources; maps; calendars of environment / development meetings; funding sources; general reference sources including general bookshops, electronic journals; internet and internet search tools.

Conceived by the University of Ghent, Netherlands, the Encyclopedia of Law and Economics Website is a broad-based collection of resources pertaining to economic and legal issues throughout the world. It is a very useful tool, showcasing a comprehensive index of searchable bibliographic resources, this site also includes abstracts of recent law and economics reviews. The hefty Law and Economics Web Resources section features working papers, bibliographies, and mailing lists. In addition, the site links to law and economics academic programs, associations, and an array of relevant Websites. The citations under no. II, common property, are particularly useful for literature on institutions and natural resource management.

Food and Agriculture Organization - United Nations [http://www.fao.org/]
The FAO aims to raise levels of nutrition and standards of living, to improve agricultural productivity, and to better the condition of rural populations. Also see the subsections for the Sustainable Development Dept., the programme in forestry, and community forestry homepage.

Forests, Trees and People Programme & Network (FTTP) [http://www-trees.slu.se]
FTPP develops participatory methods and tools that enable the involvement of local communities in forest management. The site offers full-text access to The Forests, Trees and People Newsletter, links to the Forest Action Network and RECOFTC in Thailand, the FTPP network centre in Asia and the Pacific.

Gender Studies in Agriculture [http://www.sls.wau.nl/crds/cent_qs.htm]
Outlines a number of research initiatives being undertaken at Wageningen Agricultural University. WAU Library maintains a searchable bibliographical database on gender, agriculture and rural development.

GetWeb Technology [http://unganisha.idre.ca/getweb/]
This page details how to retrieve information (such as web pages) from the Internet using an email account.
Indigenous Knowledge Pages [http://www.nuffic.nl/ik-pages/]
This site provides IK Resources, selected information and documentation presented by topic, geographical region, and source of information, such as projects & programmes, best practices, organisations & networks, calls, conferences, journals, articles, mailinglists, databases and toolkits & audio-visual materials. This is also the site to check the updated calls for research co-operation, papers and forthcoming conferences, workshops, etc.. You can also find the Indigenous Knowledge and Development Monitor online, a journal that promotes the dissemination of local knowledge.

Institute for Development Studies [http://www.ids.ac.uk/ids/index.html]
The British Library for Development Studies is housed at IDS, as is DEVLINE, an electronic publishing forum for development issues.

Institute for Resources and Environment (IRE) - UBC [http://www.ire.ubc.ca/ire.html]
The Institute for Resources and Environment is an interdisciplinary organization at the University of British Columbia. Its role is to initiate and foster holistic approaches to issues related to the human use of natural resources. IDRC supports a number of IRE projects including PARDYP in Nepal which produced the CD-ROM Complex Problems-Complex Options: preservation, degradation & rehabilitation in a Nepalese Watershed.

Institute of Asian Research (IAR) - UBC [http://www.iar.ubc.ca]
The Institute of Asian Research is comprised of five Centres which promote Chinese, Japanese, Korean, South Asia and Southeast Asia Research. The Centre for India and South Asia (CISAR) has recently released the papers from The Co-operative Management of Water Resources in South Asia Workshop which was held December 15-16, 1997.

International Association for the Study of Common Property (IASCP) [http://www.indiana.edu/~iascp]
The International Association for the Study of Common Property (IASCP), founded in 1989, is a nonprofit association devoted to understanding and improving institutions for the management of environmental resources that are (or could be) held or used collectively by communities in developing or developed countries. The site contains all the abstracts of the IASCP conference papers as well as a large searchable database on common pool resources. The Association's newsletter, the "Common Property Resource Digest" is now available on-line. Click here.

International Centre for Integrated Mountain Development (ICIMOD) [http://www.icimod.org.sg]
The International Centre for Integrated Mountain Development (ICIMOD)'s primary objectives are to promote the development of an economically and environmentally sound mountain ecosystem and to improve the living standards of the mountain populations especially in the
HKH Region. In order to further these objectives ICIMOD engages in research, information provision, training and consulting. Check out their publications section, which includes an excellent newsletter series (eg. #35 on mountain commons).

**International Institute for Environmental Development** [http://www.iied.org/]

With a focus on issues of equity and justice, and the rights and needs of poor people, the Institute works in an interdisciplinary way, addressing the connections between economic development, the environment and human needs. The Sustainable Agriculture and Rural Livelihoods Programme promotes sustainable agricultural and land management practices. The Resource Centre for Participatory Learning and Action has a specialist collection of information concerning participatory approaches to development. This collection provides practical and applied information, ranging from theory to practice, and draws from experiences from across the world, particularly Africa, Asia and Latin America. The Centre currently holds over 2000 documents, many of which are unpublished literature, and features materials in more than 10 languages. We also provide an information delivery service that responds to requests from all over the world. A description of all the services and database for the Resource Centre can be found here.

**International Institute for Sustainable Development (IISD)** [http://iisd1.iisd.ca/]

The site provides a wide range of resources pertaining to sustainable development including: weekly journal reviews, access with search engine to the sustainable development database containing over 10,500 titles on sustainable development and related topics. Of specific interest to CBNRM is the sub-site on the Community Adaption and Sustainable Livelihoods (CASL) Program of IISD [http://iisd1.iisd.ca/casl/intro+defs/default.html].

**International Model Forest Secretariat** [http://www.idrc.ca/imfn/index.html]

The "Model Forest" concept is based on the philosophy that forest ecosystems provide invaluable benefits to society and that, in the future, these ecosystems must be managed for all values so as to ensure that the benefits remain available for future generations. Through the International Model Forest Program, governments provide incentives for diverse interest groups, organizations and government agencies to form partnerships and to develop a common vision of the socio-economic benefits that are wanted, as well as the methods of conservation that are needed to obtain them in particular forest ecoregions.

**International Network of Forests and Communities** [http://www.forestsandcommunities.org/]

The International Network of Forests and Communities supports ecologically sustainable community forestry, through information sharing, research and advocacy. The web site provides various resources, including documents, country profiles, links and news items.
International Rice Research Institute (IRRI) Library [http://ricelib.irri.cgiar.org]
The IRRI is a nonprofit agricultural research and training center established to improve the wellbeing of rice farmers and consumers in developing countries. This website contains a searchable rice library, a bibliography on rice with more than 170,000 references in at least 80 languages, as well as links to other libraries and resources on the web.

MekongInfo is an excellent, interactive Web-based system for sharing information and knowledge related to participatory natural resource management in Cambodia, Laos, Thailand and Vietnam. It also provides a web hosting service which enables organisations and projects working in the area of natural resource management in the region to have their own customized web pages on the system - free-of-charge.

NRM-Changelinks [http://nrm.massey.ac.nz/changelinks/]
NRM-Changelinks is an on-line which focuses on improving community participation within natural resource management. The site includes approaches, information and theory in a range of related topics as well as full text manuals on subjects such as participation, collaborative management and monitoring and evaluation. The site also aims to further the role of the Internet by providing information on how organizations can develop their own presence on the web.

Participatory Action Research Network (PARnet) [http://www.parnet.org/]
This is the principal site for information on participatory action research. It offers a searchable database on PAR resources and links to scholarly publications online.

Participatory Initiatives [http://www.oac.uoguelph.ca/~pi/index.html]
PI functions as a network of support for people interested in participatory decision-making and change. PI does this by linking people to people, information and training.

Participatory Research and Gender Analysis Program [http://www.prgaprogram.org/]
The PRGA Program develops and promotes methods and organizational approaches for gender-sensitive participatory research on plant breeding and on the management of crops and natural resources.

Poverty, Gender and Water: A new internet resource from IWMI [http://www.cgiar.org/iwmi/resprog/GPW]
The International Water Management Institute (IWMI) has just launched a new internet resource on poverty, gender and water. This page is your link to useful information such as:
examples of best practice * summaries of research results * conference and workshop proceedings * access to IWMI publications * descriptions of current and up-coming IWMI research projects. This page is also the gateway to the Open Forum on Poverty, Gender and Water. The Forum is hosted by IWMI, but driven by input from the broader Poverty, Gender and Water community. The Forum offers several services: * a listing of over 300 gender/poverty/water titles * links to other useful sites * a partner search function * a bulletin board for details of conferences, funding opportunities, etc.

Research School of Pacific and Asian Studies (RSPAS) - Australian National University [http://coombs.anu.edu.au/CoombsHome.html]
The Research School of Pacific and Asian Studies provides research and postgraduate training on the Asia-Pacific region, with particular emphasis on Southeast Asia, Northeast Asia and the Southwest Pacific. Areas of study include the impact of globalisation on local societies and cultures, urbanisation, economics, politics and international relations, history, anthropology geography, gender and development.

Social Capital for Development [http://www.worldbank.org/poverty/scapital/index.htm] This World Bank website brings together the many diverse resources available on the subject of social capital. It includes full text articles, abstracts and a searchable database along with the tools and methods for measuring social capital.

System-wide Program on Collective Action and Property Rights(CAPRI) [http://www.cgiar.org/capri] The mission of the CGIAR is to contribute, through its research, to promoting sustainable agriculture for food security in the developing countries. The System-wide Program on Collective Action and Property Rights(CAPRI) is one of several Inter-Center Initiatives of (CGIAR), which seek to draw together relevant resources from multiple centers, national research institutes, and centers of excellence, and bring them to bear, in a coordinated manner, on a problem of global or inter-regional importance. The overarching goal of this Programme is to contribute to policies and practices that alleviate rural poverty by analyzing and disseminating knowledge on the ways that Property Rights and Collective Action institutions influence the efficiency, equity and sustainability of natural resource use. CAPRI publishes a number of excellent working papers, which can be accessed online under the publications section of the web site. CAPRI also hosts a listserver which alerts you to new working papers as they are published.

The Resource Centres for Participatory Learning and Action (RCPLA Network) [http://www.rcpla.org/] The Resource Centres for Participatory Learning and Action (RCPLA) Network unites 14 like-minded organisations around the world. The RCPLA Network's aim is to share, exchange and promote good quality information about participatory approaches and in particular, draw
from the long history of participation in the South and share these experiences internationally. The RCPLA members operate both at a regional and national level through their own networks. Through this, and their commitment to sharing and networking around participatory methodologies and approaches, they are able to spread information around participation. The members also share information about activities in their respective countries, such as training programmes, workshops and other events happening within this field. Furthermore these centres provide PLA information focused on the particular research fields within which they operate. Currently there are member organisations in Bolivia, Egypt, India, Kenya, Mexico, Nepal, Nigeria, the Philippines, Senegal, Sri Lanka, Thailand, Uganda and the United Kingdom. The website contains, amongst other things, a list of participation-related training courses and conferences from all over the world and a virtual library of documents which can be downloaded.

The Sustainable Livelihoods Working Paper Series from ODI
[http://www.oneworld.org/odi/publications/susliv.html]
These working papers cover practical applications of Sustainable Livelihood (SL) approaches within natural resources management. The papers provide substantial case study material of varied practical experiences, combined with reflection on the emerging findings concerning uses of SL. Some focus on specific types of application of SL approaches (e.g. project design, impact assessment) and some on their application to specific sectors (e.g. water, tourism).

Water Demand Management Research Network [http://www.idrc.ca/waterdemand/]
The IDRC office for the Middle East and North Africa hosts a web site linking researchers working on issues of water demand management. It includes a number of papers available online.

The World Bank web site provides access to World Bank data, project descriptions, publications and other resources. Of specific interest to CBNRM is the Environmentally and Socially Sustainable Development (ESD) site [http://www-esd.worldbank.org/], particularly the section about the International Workshop on Community-Based Natural Resource Management (CBNRM) that took place in Washington D.C., United States, on 10-14 May 1998 [http://www.worldbank.org/wbi/conatrem/index.htm] Also of interest is the World Bank Participation Sourcebook [http://www.worldbank.org/wbi/sourcebook/sbpdf.htm] which includes appendices on methods and tools for participation as well as summaries of World Bank working papers on participation.

World Resource Institute (WRI) [http://www.wri.org/wri/index.html]
WRI is an independent centre for policy research and technical assistance on global environmental and development issues. The site includes WRI websites on: Biodiversity, Climate Change, Environmental Education, Forest Frontiers Initiative, Forest Resources, Health
and Environment, Management Institute for Environment and Business, PCG for Africa, Sustainable Agriculture, and Trends and Indicators. It offers a broad range of links related to on-line resources; full text access to World Resources, an annual reference volume on global environmental and natural resource conditions and trends; and information on WRI publications.