

Sustainable Use of Biodiversity

Review of the SUB Program Initiative of IDRC

1997-2000

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Summary and overall comment

The review team is highly impressed with the work of the SUB Program Initiative, if not in awe of what has been achieved by a small and dedicated team. We recognise that the SUB PI has the advantage of a longer track record than just the three years of the prospectus period (1997-2000) and that some of the impacts referred to in this review stem from projects that were launched earlier than the date of the prospectus. Nonetheless, the review teams wants to record first and foremost our enthusiasm for what has been achieved by SUB and our conviction that SUB is right on target as it addresses some (but appropriately not all) of the key issues in stemming the loss of biodiversity. It is also important to note that SUB is the only PI with an explicit focus on the needs of indigenous peoples. The achievements of SUB are detailed in the body of this report. Here the reviewers want to take the opportunity to look ahead and point to the challenges and choices that they see for SUB as it develops its next three year program and strategic plan.

Even though SUB has set out two areas for its work: *Options for Food Security* and *Options for Sustainable Livelihoods*, these still cover a broad range of issues and activities. They do not really provide much focus. This leads to several challenges for SUB: it is difficult *a priori* to set boundaries to the program; it is not evident how priorities are allocated; and it is difficult to defend a coherent conceptual framework, either a scientific one or a development one. One has great sympathy with SUB's goals and programs; one feels instinctively that they are on the right track; but the rationale is not as explicit or robust as it might be. A clearer articulation of the perceived causes of the loss of biodiversity would assist here.

The review team sees the need for a clear development rationale strongly anchored in science as becoming more important for SUB to articulate for the next round. SUB is working in some of the most politically charged areas in north-south relations and the heat will only get hotter as biotechnology and bio-prospecting raises the stakes. SUB has not apparently been challenged for its stance and support to indigenous populations, farmers and developing country governments against commercial interests, but it could happen. Another challenge for SUB is how to define its area of research on medicinal plants to ensure that the benefits to human health are made without SUB getting directly involved in medical research on human subjects. The reviewers suggest a more explicit partnership strategy with other donors, but the important point is to address the challenge as part of developing the new strategic plan for SUB.

To conclude, the reviewers are highly impressed with SUB. It deals with issues which are crucial to the sustainable management and use of the genetic material on which the world depends. SUB's objectives and methodological approach is best summed by a statement made by Margarita Oseguera de Ochoa in her external evaluation report (p. 39) on Phase I of the TRAMIL project:

"Information, validation, dissemination with community action has created a new and ingenious approach for the recovery and retrieval of popular culture; starting from the people's traditional knowledge, elevating it to the level of scientific investigation, and returning it, enriched, to the communities.....

That is to say, people are the starting point and the end point."

1 Program goal and objectives

The Sustainable Use of Biodiversity (SUB) Program Initiative Prospectus states that its main purpose is to support research that strengthens the food security, health systems and livelihood options that local and indigenous communities derive from biodiversity. The objectives and performance targets of the SUB PI are:

- 1 to promote use, maintenance and enhancement of the knowledge, innovations and practices of indigenous and local communities that conserve and sustainably use biodiversity;
- 2 to support the creation of models for policy and legislation that recognize the rights of indigenous and local communities to genetic resources and to the equitable sharing of the benefits of the use of those resources in the context of intellectual property regimes;
- 3 to develop incentives, methods and policy options that facilitate community participation in the design and implementation of *in-situ* agricultural and aquatic biodiversity conservation and development strategies; and
- 4 to support the development of options for sustainable livelihoods and incentives for the sustainable use of natural products from biodiversity resources, especially medicinal plants.

1.1 Relevance of SUB to the development issue

The reviewers strongly endorse the value of IDRC having one of its Program Initiatives centred around the loss of biodiversity. It is a major development problem in all regions of the world, and one which is closely related to the beneficiaries with whom IDRC has always been concerned: the poor and marginalised communities. The reviewers also agree with SUB's emphasis on the sustainable use of biodiversity. We further concur with the importance stated in the PI Prospectus and in the actual work of the PI, to the use of traditional and indigenous knowledge in research and policy efforts towards conserving biodiversity; to the employment of economic incentives in promoting conservation, and to the recognition that national sovereignty over biodiversity, while necessary, may not be sufficient for conservation, or for the protection against inappropriate exploitation of indigenous knowledge and traditional resources. The review team believes that there are also strong, non-utilitarian (i.e. intrinsic) values in maintaining biodiversity and cultural diversity as part of our global heritage.

The SUB PI has delineated for itself a particular set of issues within the broader global problem of loss of the world's biodiversity. It is not directly involved in many of the biological, taxonomic, or other natural science aspects of biodiversity loss, nor with the related urgent monitoring and scientific

training needs in developing regions. SUB is aptly named: the sustainable *use* of biodiversity. Its entry point is the relationship between human use and biodiversity sustainability. Further, the statement of the development problem in the SUB Prospectus focusses almost entirely on the relationship between biodiversity and marginalised and indigenous peoples and the threats to both from globalisation, new international policy regimes and the voracious demand from industrialised countries for new sources of genetic material for biotechnological applications in agriculture, pharmaceuticals and industrial products.

At the same time as strongly endorsing SUB's approach to the development problem, the review team feels that the rationale for the selection of IDRC's focus could be better developed and explained in the SUB Prospectus. We would like to see a more comprehensive articulation of the biodiversity problematique, including a discussion of the underlying causative factors, as a context and rationale for IDRC's selection of SUB's particular entry points and focus. We believe that the SUB team selected its priorities very carefully and we are told that space limitations in the Prospectus led to a broader discussion of these issues being edited out. We would urge them to be replaced next time.

There are several reasons for this suggestion. First, it would better help to explain why certain important issues are downplayed or ignored. For example, the prospectus does not refer to different land tenure systems and their relationship to the preservation or destruction of biodiversity - an omission that the review team found surprising, even though we realise that land tenure is a focus of other PIs, in particular, CBNRM and that there are linkages between the PIs. CBNRM does not have the same focus on biodiversity that SUB has. More importantly, it would also bring a certain coherence to the research approach and priority setting within it, by identifying the major causes and then focussing on strategies that are targeted at them. A broader understanding of the biodiversity problematique would help to better relate the four objectives of SUB within a single research framework. In particular, the work under objective 4 on sustainable livelihoods from natural products, seems to be emphasising the *bio*- as today's raw material rather than the *-diversity* as the key to tomorrow's sustainability, which appears somewhat at odds with the philosophical position of the other components of SUB.

There is also some ambiguity in the Prospectus about whether SUB is dealing exclusively with policy issues or is something more. Taken as a whole, it is clearly something more, but there are some statements which might mislead the reader to conclude that the PI is focussed only at the policy level. Certainly many of the projects go beyond policy to direct interventions to improve people's lives. Within the reviewers' plea for a stronger articulation of the overall development problem, there are other embedded questions that could be clarified: for example; what SUB means by "relationships" as in "focuses on relationships between the local management of biodiversity and global policy initiatives", and what range of "incentives" (and *disincentives*?) it is referring to. These questions aside, the reviewers agree with the approach taken by SUB to the biodiversity problematique. They believe that the issues of loss of local knowledge and cultural diversity, the need to strengthen the capacity of developing countries in international fora on trade and exchange of genetic resources, and the need for *in situ* biodiversity conservation, and increasing options for sustainable livelihoods are

all urgent and important areas in which SUB should be working.

1.2 IDRC's niche

The prospectus clearly describes the strengths that IDRC can bring to the particular research approach adopted by SUB. It includes a long track record in related fields such as plant breeding, management of aquatic resources, conservation, indigenous knowledge and community level research, as well as pioneering efforts in production-to-consumption systems and multi-stakeholder processes. Indeed, some of SUB's noted successes were initiated before the PI system was established. IDRC's strengths are not, however, sufficient on their own to justify IDRC's selection of its niche. What is lacking in the rationale is an overview of what are the principal and priority actions needed; what other major players are doing; and how IDRC's strengths complement these and justify its program strategy and role.

The review team would like to see in the SUB Prospectus that IDRC's efforts fit within the overall international strategy and diverse initiatives for sustainable use of biodiversity. The prospectus does provide examples of organisations receiving funds from IDRC. It may also be useful to review what other relevant organisations are doing, although we are aware that the team did take this into account in designing the PI workplan. For example, there is no mention of organisations such as the Centre for Indigenous Knowledge for Agriculture and Rural Development (CIKARD), the Centre for International Research and Advisory Networks (CIRAN/Nuffic) in the Netherlands, Global Legislators for a Balanced Environment (GLOBE) or the Global Biodiversity Forum (WRI/IUCN/UNEP). On the other hand, we note positively that SUB is active in exchanging information and influencing the activities of organisations such as Conservation International and the Global Biodiversity Forums.

IDRC's comparative advantage has also included tackling politically sensitive issues and this is well exploited in SUB's objectives and workplan. The issues of national sovereignty over genetic resources and the need to protect them and the communities which have been the traditional guardians of biodiversity against commercial exploitation from interests both inside and outside the country, are politically charged and urgent issues. IDRC and SUB are to be commended for taking them on. The challenge is to support policies which, while ensuring continued public access to the common heritage, combines this with maximising equitable distribution of the benefits from their use. SUB is to be commended for looking at some innovative concepts such as "centres of diversity" for medicinal plants.

One question in the reviewers' minds is where and on what basis SUB draws the line between research support and advocacy in such politically charged areas. This is not an easy line to draw. Clearly the new intellectual property rights regimes pose threats to the biodiversity and associated cultural diversity inheritance of the world, particularly in developing countries where most of the world's biodiversity is. Equally clearly, SUB appears to have taken the stance that these threats to

the “commoditisation of life” (David Suzuki’s term) need to be counterbalanced by support to alternative mechanisms in the interests of local communities. All of this the reviewers support. Given that it is not a totally neutral position and that SUB works closely with organisations well known for their advocacy role in biodiversity, perhaps some explicit discussion would be useful in the next round of SUB’s (and IDRC’s) position on these issues.

2 SUB Program strategy

The questions discussed here include the program strategy as laid out in the prospectus and the implementation of the strategy as described in the annual reports and project documents.

2.1 Relevance and overall balance

The review team found the detailed Program Strategy presented in the SUB Prospectus to be clearly articulated and appropriate to the stated goal and objectives. It agrees with the identification of the two main sectoral areas (options for food security and options for sustainable livelihoods) and the three cross-cutting issues (gender analysis, local and indigenous knowledge, and informing policies with local perspectives and approaches). The reviewers also support the two elements highlighted in the prospectus in the approach to program delivery (multidisciplinary and interdisciplinary research and Canadian collaboration), especially in the context of the Convention on Biological Diversity and legislative initiatives.

The rationale for the program strategy given in section 3 of the prospectus can also serve as criteria for the overall research approach. The review team would add another criterion explicitly (although it is clearly followed in practice): that SUB, in general, responds to demand for research support from the intended users and/or beneficiaries of the research results. It has been IDRC’s and others’ long experience that if a research effort is addressing need strongly felt and articulated by the end-users, it greatly increases the chances that the results will be used.

Options for Food Security

As part of the strategy for “Options for Food Security”, the review team strongly supports the advocacy of plant breeding practices which incorporate farmer-based plant varieties and which seek to increase food production without loss of on-farm biodiversity. The efforts made to influence major plant breeding institutions to change their approaches and outlooks in this way will help ensure that the impacts extend beyond the marginal. The review team also agrees with the PI’s focus on *in situ* conservation, considering the inputs which others make to *ex situ* conservation.

Options for Sustainable Livelihoods

The value-added processing and marketing of locally available renewable natural resources is undoubtedly important for adding income generating opportunities for marginalised rural populations. In many cases, it is the only option available. It may be worth the SUB PI specifying more explicitly what limitations it places on the term “natural products” and what criteria it uses to select products to focus on, in order to better define what might or might not be included in its purview. For example, does the term include processing of common agricultural or other renewable resource products such as conventional forest products? It is important that SUB ensures that the options for income generation being supported are not of *marginal* economic benefit but make a real difference to people’s lives and some explicit recognition of this would help to focus the program strategy and set priorities.

Medicinal plants appear to be the main focus of activity in this component of SUB and are a special case in that they offer both direct health benefits as well as economic benefits. An important issue concerns the downstream implications of work on medicinal plants. The dilemma we see facing SUB is that to achieve the impacts of economic and health benefits of research on medicinal plants will require further research to determine and document the dose-response patterns in human subjects and this would appear to be beyond the core competencies of the SUB team, and indeed, penetrates into waters that IDRC may not wish to enter. One solution is to identify an explicit strategy to enter into partnerships with organisations that can support more medically oriented research.

There is another issue relating to natural products that we would wish to raise: why is the supporting policy environment that is so central to the work in Options for food security not more central here? There seems to be relatively little reference on the national and international policies that should underpin the work on natural products such as essential oils compared with the central place accorded policy frameworks elsewhere in the program. Some discussion of this difference in emphasis is warranted.

Missing elements in the strategy

At times the links between the two program areas appears somewhat forced. In particular, the case for the connection between the contribution of locally derived natural products and medicinal remedies to local health and welfare and the protection of biodiversity is not clearly made. Indeed, it is unlikely to succeed unless there are supportive national or regional policy environments to ensure large scale habitat preservation; and on this issue, SUB is largely silent. The review team was surprised to find “natural habitat protection” or “ecosystem preservation” largely absent from the PI documents although specific projects such as the *Sustainability of Green Forest Products, Guatemala* take a biosphere reserve as a target area.

Another missing element, is any clear strategy or work in the program for attracting or transferring large resources from international or national sources to programs to stem the loss of biodiversity. Here we are not referring to the SUB revenue generation strategy (which SUB has successfully implemented) but to a major effort with others to mobilise funds for biodiversity action plans. The goal of conservation of biodiversity, which is part of the SUB goal, is unlikely to be attained without the large-scale allocation or redistribution of resources to efforts directed at promoting it. Although

the SUB PI frequently mentions “incentives” in relation to conserving biodiversity, it neither discusses “disincentives” nor addresses major incentives such as carbon sink investments or debt-for-nature swaps which could fund major activities beyond the scope of IDRC.

Conundrums in the strategy

It is not evident from the prospectus how the PI team deals with balancing the needs for institutional capacity building and supporting weak organisations with the goals of ensuring high research quality and research impact. IDRC clearly does not have the resources to undertake large scale training or capacity building programs. Yet SUB is pushing forward methodological boundaries by insisting on multidisciplinary or interdisciplinary research, participatory approaches, and integration of gender and social analysis. The review team applauds this, while cautioning SUB not to make it an objective in itself. However, the bottom line is: if researchers (whether from research institutions, NGOs or CBOs) do not have the appropriate methodological skills and orientation, they will not be able to undertake the research that SUB wishes to support. So SUB will only succeed if the researchers it supports have these innovative methodological skills and training, either from IDRC or from other sources of support.

The 1998 Annual Report mentions this dilemma as an “unanticipated issue”. The review team does not think that SUB should become involved in major support to training or capacity-building itself but should develop and implement a strategy for encouraging others with more resources to invest in capacity building programs that would be supportive and complementary to IDRC’s research support goals. In any scenario, SUB’s strategy is dependent on ensuring an adequate human resource capacity for interdisciplinary and participatory research. This might involve on-the-job training within research projects or providing support to national institutions or networks to do the training.

2.2 Involvement of researchers and stakeholders

The review team is highly impressed with the extent to which SUB uses networks as programming vehicles and as a means to increase reach and impact. The active promotion of linkages between projects which share similar objectives is encouraged by the PI team. Its proactive establishment of several networks, and its active support to already existing networks, are outstanding and exemplary. Links with networking groups, such as the Third World Network and the Indigenous People’s Biodiversity Network (with its Indigenous Knowledge Programme) should continue to be strongly encouraged. Networks such as the Medicinal Plant Regional Networks are a highly effective mechanism for setting priorities, sharing tasks and resources, and for mutual learning and support. The review team was also pleased to note that the “networking of networks”, where feasible, was part of the SUB strategy.

A good example of SUB’s involvement of stakeholders in its implementation strategy is afforded by the project *Using Agricultural Diversity Award Program 96-0005*. In June 1995 IDRC convened a meeting of scientists and activists in New Delhi to address the issue of using diversity.

(Proceedings of the workshop were published by IDRC: *Using Diversity: Enhancing and Maintaining Genetic Resources on-Farm*, Eds: L. Sperling and M. Loevinsohn). Recognition by participants that they had common concerns and mutuality of interests led to subsequent meetings at which mechanisms were sought to support scientists and activist inputs into grassroots research on agricultural biodiversity. The conclusion was to develop a competitive demand-driven small grants program which gave rise to the UD project, with the Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI) as the executing agency.

2.3 Regional strategy

SUB reports that it undertook regional discussions prior to developing its regional activities but the program prospectus is not explicit about the rationale for differential strategies or weighting of effort in different regions, either in relation to the sectoral foci or the cross cutting issues. Notwithstanding, the review team found the overall program implementation to be well balanced regionally. The June 1999 annual report shows that over the three fiscal years of the prospectus, nearly 30% will have been spent in Africa and the Middle East; nearly 20% in Asia and 17% in Latin America and the Caribbean. A quarter of the SUB projects are multi-regional and another 10% are global (including internships). This seems to us to be an appropriate distribution of activities to implement SUB's objectives and program strategy, although we note that it also requires considerable effort to be so widely dispersed for what is still a relatively small budget and program team.

2.4 Cross-cutting issues

Gender

As the prospectus points out, the sustainable use of biodiversity has significant and evident gender dimensions, with women in many parts of the world directly responsible for managing agricultural and aquatic biodiversity but with less access to control of biological resources and their habitats than men. Women have a long tradition as seed selectors and keepers of herbal remedies, but less voice than men in many of today's policy debates surrounding who should have rights to what are often women's intellectual property, passed from mother to daughter.

At the project level (including the Crucible project), SUB has successfully implemented its intended strategy to ensure that both men and women participate in defining research problems and research design and that projects pay attention to gender analysis. They have done this at two levels: within the SUB team and at the program-wide level by supporting an intern to work specifically on gender analysis and developing an important tool: *Guidelines for Integrating Gender Analysis into Biodiversity Research*. There has also been a commendable effort to include gender analysis expertise in the multi-disciplinary teams undertaking research on the ground. The results of these efforts are being seen in the new proposals coming in.

Local and indigenous knowledge

A second cross-cutting issue is that of local and indigenous knowledge. As laid out in the

prospectus, it has four components:

- facilitating direct representation of indigenous and local peoples in international debates and helping to ensure that their views are incorporated in resulting agreements;
- supporting the exchange of ideas and covenants between indigenous peoples and local communities;
- research on guidelines and protocols for indigenous and local peoples to negotiate their relationship with outside groups; and
- supporting indigenous and local peoples to document their knowledge of biodiversity and to better understand their own systems of innovation and knowledge production.

SUB is the only PI to have such an explicit focus on the needs of indigenous peoples and its work is very important in this regard. The evidence from the annual reports for 1998 and 1999 and from the projects examined in more detail by the reviewers demonstrate clearly that these components have been successfully implemented and major achievements reached. The reviewers have nothing but praise for SUB's achievements in this area.

The reviewers would also suggest that a clarification of who is being referred to by the term "local" in its juxtaposition with the term "indigenous" would be useful. While a focus on indigenous communities is indeed appropriate, SUB could make clearer (beyond the Crucible documents where the definitions of *indigenous* and *local* and related issues are discussed) that traditional or vernacular knowledge in its totality, and those who possess such knowledge have an enormous contribution to make in dealing with the problem of loss of biodiversity. It is highly unlikely that a focus only on "indigenous" groups will adequately address the larger problem.

Informing policies with local perspectives and approaches

This cross-cutting issue seems closely linked to the first component of the cross-cutting theme of local and indigenous knowledge and it is not clear why it has been separately defined in the prospectus. It appears to be mainly related to the work supported in intellectual property regimes in international agreements such as the Convention on Biological Diversity and drafting model legislation at national level to protect indigenous and local knowledge of biodiversity. The potential conflicts between the interests of national governments and local communities in the ownership of intellectual property regarding biodiversity and resolving these in national legislation poses a real challenge for an external donor such as IDRC.

3 Results and achievements

In the SUB Performance Framework, the expected outputs, reach and impacts are identified in general terms for each of the four objectives and the reviewers believe that good progress is being made towards achieving the performance targets for the three year period. The performance framework itself, while quite adequate on an initiative-wide basis, does not serve the purpose of elaborating how the research outputs are anticipated to lead to desired developmental outcomes.

Notwithstanding the difficulties in doing it, the reviewers believe that it would therefore be useful for the PI team to articulate a logical or conceptual model (perhaps for each set of linked activities) linking outputs to impacts *a priori* so that the hypotheses can be evaluated *ex poste*. If the links between outputs and impacts of a particular initiative cannot be described in the planning stage, even if in speculative terms, it could be questioned whether the activity should be supported within a research program.

The reviewers' assessment of accomplishments, outputs, reach and impact are based on the PI team's documentation, their responses to questions from the reviewers and our own reading of five projects selected for in-depth review. These are:

Crucible Project: Alternative Legislation on Intellectual Property Phase II (Global) 97-0029
Biodiversity Access Legislation Workshop - Vientiane 97-5007
Biodiversity Access Legislation for Vietnam National Workshop 98-5002
Using Agricultural Diversity Award Program 96-0005
TRAMIL: Central American Network on Medicinal Plants II 96-0012

We benefited from discussions with the whole PI team at the beginning of the review and follow-up meetings with the team leader, Chusa Gines and other team members as the review proceeded. We wish to record our thanks to the SUB team for their helpfulness and candour to the review team.

3.1 Major accomplishments

The SUB PI team see their major accomplishments as:

- raising the profile of indigenous and local peoples' knowledge and interests on the research agenda of research institutions, donors and the CGIAR; and developing innovative participatory methodologies and other approaches for achieving this;
- putting indigenous and local knowledge of biodiversity on the agenda of international fora such as the Conference of the Parties to the Convention on Biological Diversity;
- facilitating multi-stakeholder processes on high profile and critical issues; in particular, the international and national debates surrounding intellectual property rights and legislation.

The review team agrees that these are all three major achievements of the program and that SUB is to be congratulated on first, identifying these issues as important and second, in making major strides towards achieving them within the three year period. SUB has not done this alone, but has worked with a number of partners in developing countries and in the international policy arena, but SUB's influence and leadership appears to have been significant, especially in the light of its relatively modest funding. It has shown that imaginative and bold programming can be effective, and an

“honest broker” role for IDRC is still an important one.

3.2 Outputs

The SUB PI documents well the expected outputs from its activities. The review team was extremely impressed with both the quality, quantity and diversity of outputs produced from the work supported by SUB, which include not only reports, but model legislation, videos, and television programs. The fact that some outputs, such as the videos on medicinal plants from TRAMIL, are produced directly by communities is also commendable. There is an obvious strong emphasis by the team on ensuring that outputs are produced and widely disseminated, although at times the dissemination strategy seems to be after the fact. The direct outputs of the PI staff are likewise significant. Also impressive is the frequency with which outputs of SUB supported research are taken up by other institutions for application in their own work. The specific outputs from the projects reviewed in greater detail are given below.

Crucible Project II (97-0029)

The main outputs of the second phase of the Crucible Project have been drafts of an overview paper: *People, Plants and Patents II* and a working draft of model legislation and policy options for national policy makers to develop their own legislation. This second document covers four important *menus* of legislation: (1) Legal options for *Sui Generis* Intellectual Property Laws to protect indigenous and local knowledge; (2) Legal options to encourage innovative plant breeding by creating *sui generis* IP rights in plant varieties; (3) Draft legislation provisions for an Act to regulate Biological Inventions; and (4) Draft legislation provisions to regulate access to biological/genetic resources. In addition, there has been a report documenting the follow-up to the main output from the first phase: a report called *People, Plants and Patents*.

The importance of the written outputs of Phase II is shown by the demand for their distribution and discussion before they are finalised. Presentations have been made on the project's progress to a meeting of interested parties during the CGIAR Centres Week in Washington, DC (November 1998); to participants in the ACTS/UNEP Conference regarding the relationship of the CBD and WTO/TRIPS in Nairobi (February 1999); and to the Global Biodiversity Forum in Montreal (June 1999). There is also considerable pressure from developing countries to publish the reports in order to utilise them immediately.

Biodiversity access legislation Laos (97-5007) and Vietnam (98-5002)

The main outputs are leading edge draft legislation and workshop reports. It is anticipated that these will be made regionally available in Southeast Asia and will result in stronger and necessary collaboration between Laos and Vietnam and, through the Crucible project, will also receive international attention and recognition.

Using Diversity (96-0005)

The project has awarded eighteen grants in three phases, choosing them from over a hundred submissions. Eleven were to NGOs, three to farmer groups, and four to science-based organizations.

The research projects cover food crops, uncultivated crops, fodder and forage crops. Outputs of the research have included documentation of on-farm biodiversity in diversity rich regions, analysis of women's and men's perceptions of agricultural biodiversity and varietal preferences, improved understanding of farmers' plant breeding practices, and conservation of indigenous grasses. These have led to key insights into the way women value the link between biodiversity and food security. Pioneering research on the importance of uncultivated foods for the poor has led to identification of two important areas of policy having significant implications: policies supporting pesticide use, and weak local or national regulation on common lands leading to their privatization or transformation through infrastructure development.

Six final reports and two newsletters have already been produced and two videos, two radio scripts and a village play are in production. In addition, an important *process* output is the evolving working relationships through electronic links within the Steering Committee (SC) which has enabled them not only to develop a common approach to award selection and monitoring, but to reach a shared philosophy and strategy on using agricultural diversity. Five meetings of the SC have been held, usually in village settings to allow interaction with farmers and awardees. The Steering Committee members have also taken collective and individual actions attempting to influence policy positions.

The *Using Diversity* project proposal did not give a listing of the outputs expected in relation to each of the project objectives. Nevertheless, in the opinion of the reviewers the outputs of this project are fully commensurate with the stated objectives. The various reports of the research projects undertaken were in general found to be of good quality.

TRAMIL (96-0012)

One of the project's major outputs has been the consolidation of the TRAMIL-Central America Network which provides a forum for the exchange and analysis of information and experience among members. National networks on medicinal plants are also being initiated and/or strengthened. TRAMIL has made a significant contribution in developing an appropriate methodology to investigate medicinal plants. Ethnopharmacological surveys have been conducted in participating countries and the conservation status of many of the medicinal plants determined. *The Caribbean Pharmacopoeia* was produced. It contains scientifically validated information on 91 plants. In addition, a variety of reports have been produced such as a manual on agroecological characterisation of medicinal plants, proceedings of a meeting on traditional health systems using medicinal plants, two network bulletins, etc.

Dissemination activities are an integral part of the network's activities (TRAMIL-DIFUSION). A Travelling Kit for dissemination workshops has been produced, as have five videos on different aspects of the program, and a variety of pamphlets and monographs giving detailed information on the status, safe use, and preparation of specific plants have also been produced. TRAMIL has also been involved in helping establish "home gardens" for medicinal plants as well as demonstration gardens such as the Agro-ecological Garden in Limon, Costa Rica.

The documentation produced by the TRAMIL network is extensive and comprehensive as well as of very high quality. It includes material produced to meet reporting requirements of IDRC, network bulletins, a variety of workshop reports, and books, videos and pamphlets on medicinal plants and other subjects. The reviewers have examined a number of the outputs and confirm their high quality.

3.3 Reach

The intended “reach” of SUB’s projects is usually very broad, ranging from “grassroots reach” stemming from their participatory approach involving members of indigenous groups and local communities, to “international reach” whereby SUB seeks to influence the policies of governments, multinational corporations and international agencies and donors. The relative weight of SUB’s reach at local, national and international levels varies with the projects: for the Laos and Vietnam Biodiversity access legislation projects, the intended reach is considerably more limited than for large network projects like TRAMIL or Using Diversity. The reviewers noted two apparent limiting factors on the reach of SUB’s projects: the lack of dissemination plans (for example in *Crucible II*, where an unknown number of countries might have adopted some of the recommendations had they been aware of them) and the generic problem of getting senior government officials to sit at the table long enough to be influenced by policy-relevant results (the problem encountered in the Laos and Vietnam projects).

The clearest evidence of reach is, of course, to the participants in the projects. The emphasis on participatory processes is here seen as very effective. The *Crucible II* and TRAMIL projects exemplify the strengths of involving stakeholders in the process as a means of influencing future actions. Even prior to the publication and wide dissemination of its reports, the so called “*Crucible Process*” has reached in a significant way all of the participants in the group who have been exposed to views, information, arguments and personal appeals from other participants in the process. This exposure has also been extended to additional people in the countries where the meetings have been held. Donor organisations have also actively participated in the process and therefore have been exposed to the views exchanged and to the importance of the issue for developing countries. Likewise, the reach of Using Diversity through direct participation in the project is very broad. It includes the Steering Committee itself, the farming communities in which the research is conducted, the grassroots development and research communities which receive awards, as well as other organizations which are interested in the results of the studies for their own purposes. When representatives of donor agencies participate in project meetings, they also are reached and are more likely to be supportive, as in many of SUB’s projects.

Through all these participating organisations, there are on-going multiplier effects extending the reach to their members and networks. For example, in the Using Diversity project, links with international NGOs are developing and policy making bodies are lobbied by the Steering Committee collectively or individually. The collaboration between Using Diversity and the South Asia Network for Food, Ecology and Culture (SANFEC) in the follow-up activity will undoubtedly further the reach of the project. To extend its reach the project has also held activities such as the Biodiversity

Festival in the Deccan Plateau which was attended by 5000 women farmers and scientists from around the region.

In the TRAMIL project, network members as well as members of national networks are all directly reached by the project. Ministries of Health and community health workers have become important links for integrating medicinal plants in national health care delivery programs. Staff and students in Faculties of Medicine in the region, participants at meetings, recipients of training grants, are all touched by the program's activities and outputs. The reviewers count in the hundreds, if not thousands, the number of participants reported to have attended various community activities, national seminars, and regional workshops. Those listening to radio programs or reading articles in local papers based on the work of the network have also been "reached". Very importantly, links with similar networks in other regions and evolving partnerships with a variety of other organisations, is extending the TRAMIL reach beyond Central America. For example, TRAMIL methodologies are being adopted more broadly in Latin America and links with Asian institutions are being established.

3.4 Impacts

The difficulty of documenting impact from development research is well known. The reasons are manifold. The results of research efforts have to pass through stages of dissemination, acceptance, and utilisation before impact can occur or be seen to have occurred. It is also frequently difficult to assign cause and effect between a research output and a development impact. This is particularly true for activities which are not intended to directly affect people's lives. Many of the activities of SUB are directed to influencing national and international policy and legislation which makes it very difficult to measure the developmental impact on target beneficiaries, such as indigenous people, except over the very long term. Drawing the links between changes in the wording of an international agreement and the daily life of an indigenous woman in a marginalised community is not easy except anecdotally. It is nevertheless important to try to ensure that SUB remains relevant and on target.

The prospectus describes the link between the utilisation of research results, impact and the extent of "reach" when different stakeholders are closely involved in the research process. The reviewers believe that it is appropriate to make this link. At the same time, it underscores a dilemma faced by most research for development activities: if it is true that participation in the research process is critical to the uptake of results by stakeholders, then it severely limits the overall impact of research since the number of participants will always be limited. Large scale impact (and reach) demands innovative approaches to replicating the benefits of project participation for large numbers of stakeholders and communities. One approach is to explore tools such as easy-to-use expert systems which empower end-users (policy makers, researchers, extension agents, community members) to exercise their individual choices from a menu of representative and appropriate possibilities .

The Crucible Project's dossier of draft legislation is a good example of how SUB can achieve a multiplier effect and this experience could usefully be turned into a broader program strategy in the future. Even before they have been formally endorsed, draft versions of the legislative options report have been used in various national efforts to protect their biodiversity. For example, legislative options on plant variety protection and patenting biotechnology have been incorporated into the new Malaysian Plant Variety Protection Law currently under development; national laws to regulate access to biological diversity in Kenya; and in NGO submissions to the ASEAN Framework Agreement on Access to Genetic Resources. Each of these examples is the result of the individuals concerned being a member of the Crucible group. The group dynamics are clearly important, but as more time elapses, and the outputs are more widely disseminated, the impacts will almost certainly extend beyond the group members themselves.

The direct impacts of the Biodiversity access legislation Laos and Vietnam projects have been to develop draft legislation for Laos and Vietnam for access to biodiversity and to make at least a small number of key officials and policy makers in both countries better aware of the main concepts of intellectual property rights, the obligations of the Convention on Biological Diversity and rights of access to biological resources. The Lao legislation is close to being passed and the officials have said that the project has helped them in participating in the Conference of the Parties of the CBD. The project has also helped to build Canadian expertise and to give it more international exposure through the Crucible project.

SUB reports that the results of research conducted through Using Diversity awards are being used by the awardees' organizations to guide their strategies and actions, and that the Steering Committee has also used research results in their own policy positions, so that the direct impact of the project goes beyond the awards themselves. It is the opinion of the review team that the project has attained both its overall goal and its specific objectives. A second level of impact is the creation of a cohesive and self-directed network of scientists and policy activists working in close cooperation on this project. Even more important for potential long term policy impact, the reviewers believe, is the evidence that links have been established *between* different networks interested in agricultural diversity. It would be useful to explore whether the plant breeding and conservation strategies of established national and international institutions are being influenced to any significant extent by the kinds of results emerging from the Using Diversity network and similar networks.

Two anecdotal pieces of information provided by the PO in charge of the project are worth reporting. The first is that one of the awardees was honoured by the Indian Council for Agricultural Research with a prestigious award in recognition of his plant breeding and collecting work which was sponsored by the UD network. This is reported to have raised the profile in India of the farmers' role in plant breeding. The second is that more than 1 500 women attending the Biodiversity Festival took a collective pledge to protect biodiversity on their farms and to ban the use of chemicals. The pledge was also taken by farmers from Bangladesh attending the festival and more than thirty scientists and activists from around the region.

Possibly TRAMIL's most important impact to date has been to raise the profile and level of acceptance of the importance of medicinal plants in the region - be it at the community, professional, or administrative level. This has resulted from the rigorous scientific evaluation of medicinal plants conducted and TRAMIL's dissemination efforts. Several Ministries of Health in the region have officially accepted the role which medicinal plants can play and are incorporating them as part of their primary health care delivery systems. In early 1999, the Minister of Health in Panama organised a meeting in which a statement from officials of Ministries of Health and universities in the region recommended *inter alia* the development of action programs for the study of medicinal plants, and support for health care policies which integrated the proper use of such plants. At the university level, Faculties of Medicine and Natural Sciences which in the past did not take medicinal plants too seriously are now including courses on them in their syllabi. These are important indicators of impact of SUB's work at national and regional policy levels.

At the community level, SUB reports a new consciousness of the importance of medicinal plants is emerging and the level of trust in the information being provided is growing. In particular, there is evidence that an economic impact may also be ensuing from the TRAMIL project. In Costa Rica an NGO participating with TRAMIL is working with women cooperatives on the cultivation and primary processing of medicinal plants for the national market.

Finally, the reviewers have noted that some projects have had an impact on the SUB PI itself. The appraisal of the follow up activity states that the Using Diversity project's results have increased the SUB PI's understanding of the role of women in *in situ* conservation, the importance of uncultivated foods to the rural poor, and the potential for research result utilization using appropriate communication methods.

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Appendix 1: SUB Projects reviewed in detail

1 Crucible Project: Alternative Legislation on Intellectual Property Rights Phase II (Global) 97-0029

Summary

The first phase of the Crucible Project led to the publication of a report *People, Plants and Patents* which had wide exposure and impact among national and international policy makers during the Biodiversity Convention negotiations and other fora. Following its success, donors and NGOs expressed the need for another “round” of the process - Crucible II. - which would address some new legislative issues around biological diversity and would include a more diverse group of people from industry, NGOs, governments, indigenous groups, and academia; as well as a more balanced group with respect to north-south and gender. A number of donors are supporting the project with IDRC: SDC, SIDA-SAREC, CIDA, GTZ, and the Dag Hammarskjold Foundation. The specific objectives of this second round are to critically assess the evolution of genetic resource-related policies since 1993 when the Crucible Group last met; and to create policy-oriented tools and research which can be used by interested parties at national and international levels.

Reviewers’ comments

This project is a high profile one for IDRC which provides it with visibility, great potential for impact and key partnerships with other donors and with members of the Crucible Group. It is an excellent project and fully justifies the addition of a project coordinator in-house with the requisite legal skills. Following the success of the first round, IDRC was seen as the natural coordinator for round 2, reflecting well on IDRC’s perceived credibility and neutrality. The challenge will be to preserve that reputation in a situation which is becoming, if it were possible, even more polarised than before. The technological advances in genetic engineering and the rapid escalation of bio-prospecting, may push IDRC from its neutral stance, especially in the light of the work SUB supports in other parts of its program.

2 Biodiversity Access Legislation Workshop - Vientiane 97-5007 Biodiversity Access Legislation for Vietnam National Workshop 98-5002

Summary

These two related projects grew out of an earlier project (*Lao biodiversity legislation 95-1302*) which was to assist the Lao government in preparing draft biodiversity access legislation and to advance wider discussion of biodiversity access issues through the preparation of model legislation adapted first to the Lao context (and later to Vietnam). The idea for the projects came from collaborating researchers at the University of British Columbia Centre for Asian Legal Studies who had done previous work in Laos and Vietnam on their legal institutions. The Vientiane workshop funded in

1997 was a critical component in the success of the projects. Vietnamese experts attended and it led directly to the project in Vietnam and officials from Laos understood the key concepts in the legislation and were linked into regional networks which could support their work in the future.

Reviewers' comments

Considerable care was taken by SUB to ensure that regional expertise (from the Third World Network) was included to balance the northern expertise from UBC and this was an important “value added” contribution from IDRC. These two projects, while more modest than global network projects are important in that they have direct and fairly immediate beneficial impacts at the national level, where much of the drama of biodiversity legislation will ultimately be played out. National legislation to protect biodiversity and the rights and needs of local communities is urgently needed and these projects provide one model for other countries which complements the legislative options being prepared by the Crucible II project. One difficulty noted by SUB is that in both Laos and Vietnam, government officials have been swamped with other demands on their time and this made their active contribution to the project limited. This underscores the importance of having local expertise, even from outside government, involved in these projects.

3 Using Agricultural Diversity Research Award Program (UD) 96-0005

Summary

This project was initiated in 1996 and continued for 36 months. It has led to an expanded follow-up activity titled *Food Security in South Asia: Enhancing Community Capacity to Generate Knowledge and Influence Policy*. The project's general objective is to assist individuals and institutions in India, Nepal and Bangladesh to undertake applied research on the use of agricultural diversity to meet farmer needs. The award is intended to encourage research collaboration, exchanges and dissemination of information on practical means to widen the range of crop varietal choices available to farmers. Specific objectives are to support activities related to (1) Testing and developing participatory approaches and methods for enhancing the on-farm use of agricultural diversity, (2) Collaboration among groups currently engaged in on-farm conservation and enhancement of agricultural diversity, and (3) Informing policy of the role of farmer participation in on-farm conservation and enhancement of agricultural diversity. Three separate Program Areas were planned for: The Research Program, an Exchange Program, and a Documentation and Dissemination Program.

Reviewers' comments

The objectives of the UD project and its follow-up activity noted above are fully congruent with all of the SUB PI goals and objectives and have a near-perfect fit with its program priorities and operating principles. It has a strong component of institutional strengthening and support to networking of research-for-development NGOs *in situ* working in South Asia. Its scope extends from working at the grass roots to influencing policies affecting rural communities. Gender and sustainability considerations are integral to its focus. It responds to the priority assigned by the SUB PI to innovative approaches to plant breeding and community seed banking. The project also links

the South Asia region with several other IDRC activities such as the Community Biodiversity Development and Conservation program.

The review team is fully in agreement with the assertion made in the follow-up project proposal: The premise (of the Using Diversity project) is that interactive and reciprocal relationships between the community and its knowledge on the one hand and the external environment and formal knowledge on the other can enhance the management of biodiversity-based production systems. By supporting collaborative research by farmers, activists and scientists that work with farmers the foundation for equitable and sustainable development and appropriate policy interventions affecting the use of agricultural biodiversity can be established.”

4 TRAMIL: Central American Network on Medicinal Plants II 96-0012

Summary

TRAMIL Centroamerica is a network which undertakes and promotes research, dissemination, and training activities on the ethno-pharmacology of traditional health practices of communities in the Caribbean basin. IDRC support to the network began with two project development activities which led to a first phase from 1994-1996. The first phase involved the identification of traditional plant remedies used in the Afro-Caribbean communities in six countries, an examination of their conservation status, and a rigorous evaluation of their safety and efficacy. It also included the sharing of this information among communities, researchers, and health and environmental agencies.

A second phase began in 1996 and will extend to the end of 1999. It seeks to expand the scope of the project to 20 institutions and to include El Salvador and non Afro-Caribbean communities, and includes as an objective the conservation of medicinal plants by supporting the establishment of botanical and home gardens. Phase II also has a specific policy objective to extend and consolidate collaboration with Ministries of Health to research results in primary health care policies and programs. A capacity building component is also included. The project responds to the problem of lack of financial resources among many countries of the region to import drugs, which has increased reliance on traditional plant remedies as a component of primary health care.

Reviewers' comments

The project reflects several of the objectives and priorities of the SUB PI. It seeks to document and explore indigenous knowledge of medicinal plants and to promote conservation measures. It also aims to influence relevant policy bodies on the basis of research results. While it is not a direct objective of the project to promote “commercialisation of medicinal plants studied by the network, a long-term possible outcome may be the increase of income generating opportunities for communities involved. There is also an excellent fit between the methodologies of the project and the conceptual framework detailed in the SUB prospectus. In the review team’s opinion this activity is fully in line with the SUB PI prospectus. The project has been highly successful in meeting its objectives and forwarding its goal.