

**Report of the External Review Panel of the
International Council for Research in Agroforestry**

18 June-22 July, 1989

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ICRAF EXTERNAL PROGRAMME AND MANAGEMENT REVIEW

1. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The External Review Panel carried out the review of ICRAF from June 18, to July 22, 1989, on the basis of terms of reference established by ICRAF's Donor Support Group and agreed upon by the Board of Trustees.

The Panel noted that since 1984, the time of the first External Review, the Board of Trustees and Management have continued to make steady progress towards fulfilling the mandate through programme activities which attempt to address the needs of small farmers and other resource-poor land users. In that connection, the Board of Trustees and Management have taken important steps to follow up on the recommendations of the First External Review Panel.

Since the 1986 strategy statement reformulation, which is an expansion of Dr. Howard Stepler's Working Paper, ICRAF's mandate has been interpreted to include direct responsibility for research activities to generate several agroforestry technology options. Such activities are carried out essentially through the institution-building collaborative research programmes (COLLPRO) in four regional networks in Africa (AFRENA). Those programmes are organized and supervised by the Headquarters-located Collaborative Programme Division, backstopped by the Research Development Division, whose main function is strategic research.

ICRAF strategy uses the systems approach, a diagnostic methodology to analyze the state of the system, to determine the subsystems, identifying restrictions, constraints and potentials. From this flows the capacity to identify existing technology that may be introduced and define the research problem(s) to be solved so as to improve the capacity of the system. ICRAF designs and conducts research to that end. The realization of a workable system out of their initial conceptual framework is ICRAF's greatest achievement. In that connection, ICRAF has pursued with increased vigour its multidisciplinary approach in its technical operations and has assembled a team of experts which has performed commendably in collecting and collating data and developing concepts and methods.

In order to ensure the relevance of its approaches to the needs of the ultimate beneficiaries of its research activities, ICRAF has refined as a tool for COLLPRO, a Diagnosis and Design methodology which permits the identification of physical and policy contracts at the macro and meso (National/Regional) levels as well as socio-economic constraints at the micro (village/farming family) levels.

Information dissemination services have been strengthened. Training facilities have been improved, including an excellent audio visual auditorium at ICRAF House.

ICRAF Management has given important consideration to Human Resource management and now has in place a sound comprehensive set of personnel policies for professional staff whether national or international.

ICRAF has maintained excellent relations with institutions of the Government of Kenya as well as policy makers and institutions in those countries where the Council has ongoing activities.

Resources mobilized to carry out ICRAF's activities have increased threefold over the past five years.

A Donor Support Group has been established with a view to associate more closely donors to the reflection on policy, funding, as well as technical matters of relevance to the pursuit of ICRAF's mandate.

However, there remain important issues and problem areas which must be addressed. To that effect, the Panel offers for consideration of ICRAF's Board of Trustees, management, and donors, the following recommendations.

Management Recommendations

1. (p 23) The Panel recommends to the Board of Trustees and management, negotiation with the IDRC so that:

a) The Board resolution accepting IDRC's termination of its role as Executing Agency be recognized as valid as of August 31, 1981;

b) The endorsement by ICRAF of the Agreement with the Government of the Republic of Kenya be accepted as valid as of November 21, 1978; and

c) The IDRC complete the process of according ICRAF autonomy by expressing in writing to the ICRAF Board of Trustees that the termination letter of P.C. Pfeifer of April 8, 1981 (valid as of August 31, 1981) had the intention of conferring on ICRAF control of its affairs and that it was the intention of IDRC as the Executing Agency of the Group to confer upon ICRAF's Board of Trustees all the powers previously retained by the Group by Article XI, Section 2, on substantive amendments and that all actions taken by the Board of Trustees in exercise of the governance of ICRAF, including amendments of any of the Articles of its charter, are to be considered valid as of August 31, 1981.

2. (p 28) The Panel recommends that the Support Group request the assistance of the World Bank, both in Washington and in its Nairobi-based regional headquarters, to assign a specific officer and/or office with the responsibility to carry out the role of Secretariat, as is the case with the International Centre

for Insect Physiology and Ecology (ICIPE), whose Donor Support Group Secretariat is the office of the Director of Agricultural and Rural Development. (The Director serves as Chairman of the ICIPE Donor Support Group, mobilizing funds and coordinating reviews, etc.) At the same time, and in correspondence with the possible Washington Secretariat, the World Bank regional office in Nairobi might assist the local ICRAF Technical Donor Support Group (TDSG) as Secretariat. Both Secretariats would require a minimum of funding to cover budget analysis and consultancies on management and (in the case of the Nairobi group) consultancies on programme matters, which could be covered by ICRAF.

3. (p 30) The Panel recommends that ICRAF management review all restricted projects with a view to identifying those which have the attributes of a core activity, that is, that are within ICRAF's mandate and for which ICRAF has a comparative advantage, and commence negotiations with the corresponding donors to obtain a commitment on a longer term basis so as to permit reclassification of the projects to restricted core.

4. (p 31) The Panel recommends that ICRAF encourage donors to consider ways in which their internal procedures would permit them to increase the proportion of their funding that is a long-term commitment, or core. If facilitated by use of the category "restricted core", then this is part of the recommendation.

5. (p 35) The Panel recommends that any position for which a PhD degree is required be classified as International Professional Staff and be internationally recruited.

6. (p 36) The Panel recommends that the Professional Staff Policies be supplemented with policies on selection and/or acceptance of seconded scientists (or others) and visiting scientists and that special emphasis be given to the need to establish procedures for appointment that include international advertisement if such scientists (or others) are appointed to ICRAF's Professional Staff (internationally recruited) and also that assure equal opportunity to all staff already employed in the institution. The Panel further recommends that the Professional Staff Policies recognize that the salaries and benefits of Grades 1-3 might not be sufficiently competitive to attract specialized staff such as professional accountants and computer programmers.

7. (p 37) The Panel recommends that both Professional and Support Services Staff Policies be supplemented with detailed policies in regards to selection of candidates for training. Special care should be exercised to build in safeguards for the awarding of training or other opportunities on the basis of merit and not as a system of conciliation.

8. (p 41) In the interest of symbolizing the centrality and importance of the national programmes as well as in facilitating local collaboration, ICRAF should ensure that field staff acquire proficiency in one local language and be instructed in local etiquette.

Finance and Accounting Recommendations

9. (p 43) The Panel recommends the expeditious staffing of three management positions, nationally recruited: budget officer; management accountant, and project auditor.

10. (p 44) The Panel recommends that, as a matter of urgency, the accrual of \$737,000 attributable to provisions for staff benefits be reversed in its entirety and that ICRAF establish a plan for eradicating this deficiency in core funding, which should be discussed with the ICRAF Board and core donors. Provision for recovery of a portion of the accumulated deficit through amortization of the shortfall over a prescribed period might find acceptance.

11.(p 45) The Panel recommends strongly that ICRAF improve its financial accounting systems and procedures to ensure that all charges which benefit restricted projects are so charged through the normal workings of the accounting system.

12. (p 45) The Panel recommends formalising the overdraft authority and exploring other alternatives with donors to avoid the risk of missing payrolls or of similar calamitous situations.

13. (p 46) The Panel recommends strongly that ICRAF review its working capital situation with its Board and Donor Support Group, and negotiate the provision for one month's working capital, about \$600,000, be included as a proper item in the core budget for 1990.

14. (p 47 and 48) The Panel recommends that ICRAF management pursue resolution of the anomalous Headquarters Building deficit with the ICRAF Board and core donors, with a view to eliminating the capital deficiency. The Panel recommends amortization of the deficit over ten years.

15. (p 49) The Panel recommends that restricted project funds on hand as of the end of 1988, amounting to 1,493,142, be reflected as a current liability in financial records and reports.

16. (p 50) The Panel recommends strongly that ICRAF place the highest priority on budgetary controls by instituting and rigorously adhering to standard accepted budgetary procedures.

Programme Recommendations

17. (p 58) The Panel recommends that ICRAF make explicit its direct research involvement.

18. (p 58) The Panel recommends the provision of laboratories suitably equipped for essential soil and plant analysis at the Machakos Field Station.

19. (p 59) The Panel recommends that the multidisciplinary teams at ICRAF

headquarters, as well as in AFRENA field programmes, be further strengthened by the inclusion of soil scientists with particular expertise in soil fertility and of experienced crop production agronomists.

20. (p 59) The Panel recommends that ICRAF pursue ways of making designs and software for conventional experimentation widely available and, utilising existing staff, reinforce the programme for development of innovative and rigorous methodology for on-farm and for MPT research.

21. (p 59) The Panel recommends that ICRAF negotiate with NARs greater emphasis on the collection and preservation of more Multipurpose Tree species (MPT) and provenances at collaborating national institutions, and for initial performance evaluation concentrating on promising but different species at each location.

22. (p 78) The Panel recommends that initial efforts at collaboration with other IARCs be strengthened, intensified and institutionalized.

23. (p 59) The Panel recommends that ICRAF explore with ILRAD and ILCA the usefulness of joint surveys for a simultaneous characterization of farming systems and disease epidemiology to identify possibilities of relationships between trees/herbage species and animal diseases.

24. (p 62) The Panel recommends that, in order to facilitate the transition to increased levels of on-farm research, the programme for the development of on-farm research methodology be expanded to include more agricultural researchers, including a world-class tropical agro-ecologist, and be supported to the fullest extent possible.

25. (p 65) The Panel recommends that formal procedures of monitoring and review of scientific work be developed and instituted as a matter of urgency, including signed documentation for every stage.

26. (p 65) The Panel recommends that ICRAF management address the issue of internal collaboration and coordination by ensuring the creation of a functioning and effective formal structure, with regular meetings, agenda, and minutes, for programme review and coordination.

27. (p 66) The Panel recommends that the functions presently executed by the COLLRPO Division be divided, and that the Collaborative Programmes and associated staff be combined with RDD in a new research division, bearing in mind that the credibility of science depends upon leadership by a person with proven scientific credentials and managerial ability. The Panel recommends further that training functions and associated staff be assigned to a reorganized division with the Information and Communications Division (INFOCOMM).

28. (p 69) The Panel recommends that INFOCOMM's strategy for the future be one of consolidation and that no additional resources be expended except for the acquisition, publication and dissemination of information to scientists, practitioners and others in low resource situations.

29. (p 70) The Panel recommends that INFODOC proceed with its proposed strategy to 1) provide its databases to international, regional and national educational, research and non-governmental institutions, 2) cooperate with information specialists in other IARCs for the development of a long-term strategy for technical assistance in agricultural information dissemination and 3) strengthen its information collection activities outside Africa.

30. (p 70) The Panel recommends that further development of physical infrastructure for training facilities be located at a field location, taking precedence over any other capital investment, including the proposed INFOCOMM building.

31. (p 62) The Panel recommends strongly that the programme of social science field research be expanded and strengthened.

32. (p 70) The Panel recommends that ICRAF carefully consider adoption of a uniform set of inter-compatible software that can transfer and import text and processed data files and is transferable among various machines.

33. (p 81) The Panel commends and recommends the implementation of the ICRAF proposal to train trainers, focusing some of its resources on training of field agroforesters.

34. (p 82) The Panel recommends that ICRAF pursue its strategy and programme to enhance the capabilities of national institutions for training, information services and management (as well as research), by progressive decentralisation of these activities.

35. (p 77) The Panel recommends that the Strategy 2000 paper spell out the selection criteria for the "limited number of activities," bearing in mind that the ultimate beneficiaries of these activities will be the small farmer. In that connection, it is the Panel's view that the current definition of "ICRAF's clients" should be re-examined in order to better reflect the role of farmers and other "land-users and ultimate beneficiaries" in the design process of agroforestry technologies.

2. INTRODUCTION

2.1. Background to the Review

In 1984, the Board of Trustees of ICRAF requested the donors to fund a review team to evaluate the Council's performance after seven years of operation and to review ICRAF's mandate and strategy so as to "make recommendations on the future development options for the Council."

As a result, a four person Review Panel chaired by Dr. Ralph Cummings, conducted an External Review of ICRAF which took place from September to December, 1984. The conclusions and recommendations of the Review Panel were examined at a Board/Donors meeting in March, 1985, and fully endorsed by the Board of Trustees to serve as the basis for future expansion of the Council's activities.

Follow-up action to the Review Panel's Report was proposed by ICRAF's Director General in a report to the Board of Trustees in which proposals on strategy and programme requirements were formulated for implementation of the Review Panel's recommendations for the period 1986-1990.

The proposed strategy would build upon the recognized achievements of the period 1981-85. The strategy reaffirmed the need to pursue "a multidisciplinary and analytical systems approach in the development and use of ICRAF's capabilities and methodologies, as well as closer "collaboration with national and other relevant institutions in developing agroforestry technologies". It suggested an increased emphasis on design, technology generation and integration aspects of the "technology development cycle" as opposed to the analytical and diagnostic aspects. In the process, the ICRAF mandate was re-interpreted to move away from the narrow definition that precluded the Council from being involved in actual technology-generating field research, and towards the Review Panel's recommendation "to permit projection of ICRAF's programme into an action research programme which could result in the generation of new technology".

The translation of the new strategy into priority programmes has led to the expansion of ICRAF's programme of work as well as creation of a new operational structure. The resource needs have significantly increased and the funding level and pattern have also changed. The following indicators may illustrate the growth in ICRAF's activities between 1984 and today: the size of the professional staff, excluding senior visiting scientists, seconded research associates, long term on-the-job trainees and consultants, went from 26 in 1984 to 69 in mid 1989. The total programme budget (core and non-core) increased from approximately US \$2.4 million in 1984 to US \$8.7 million (estimates) in 1989.

Having witnessed and supported (through increased donor contributions) such a significant expansion in programme activities and bearing in mind that the Council has plans for further expansion in the coming years, the ICRAF Support

Group (DSG) commissioned a second External Review, for which the terms of reference are given in the following section of this report.

Concern has been expressed within the Support Group about the desirability or feasibility of a substantial expansion of ICRAF's activities, based on the Council's capacity and potential role. This second External Review is expected to assist in addressing the issues involved. Furthermore, at its mid-year meeting in Berlin in May, 1988, the CGIAR discussed the possibility of enlarging its coverage to include an additional number of "non-associated centres," including ICRAF. In that connection, a TAC Fact Finding Mission, chaired by Professor R. Dudal, visited ICRAF in May, 1989, and it is expected that the External Review's conclusions may complement the TAC Mission's findings. It might also be worth noting that the proposal from the Bellagio II meeting of donors on forestry research to consider the integration of forestry research into the CGIAR system makes it necessary to clarify the role and place of agroforestry vis-a-vis forestry research per se.

The SG's initiative to commission this second external review was discussed and agreed upon by the ICRAF Board of Trustees in April/May, 1989, in conformity with ICRAF's standing policy to carry out periodic (quinquennial) reviews.

2.2. Terms of Reference

The terms of reference of the External Review Panel as directed by the SG state as follows:

"1. PURPOSE AND SCOPE

The major purpose of the Review is to assess the content, quality, impact and value of the overall program of the International Council for Research in Agroforestry (ICRAF), and to determine whether the operations being funded are carried out in line with declared policies and to acceptable standards of excellence.

"2. ITEMS OF ENQUIRY

In fulfilling the purpose defined above, the Review Panel is requested to give particular attention to the following aspects:

(i) The action taken by the Council with respect to recommendations of the previous review.

(ii) The appropriateness of the Council's mandate; its internal consistency and interpretation with respect to:

(a) the immediate and long-term needs for improved and sustainable land use systems for multiple output production systems as well as for human welfare in developing countries, and environmental protection and improvement;

- (b) present and possible future areas of work by the Council and by other institutions.
- (iii) The translation of the mandate into a strategy and programmes of work in relation to:
- (a) the Council's strategy, its policies and procedures, and the mechanisms for their formulation;
 - (b) the Council's rationale for its priorities, its present and future overall size, its geographical focus and the composition and balance of the overall program.
 - (c) the broad institutional environment and activities of other international institutes and organizations, and of national institutes in cooperating countries and in others where the work of the Council is relevant;
- (iv) The content and quality of the scientific and related work of the Council with particular reference to:
- (a) the results of the Council's work, particularly that done since the last Review;
 - (b) the current and planned work and the role of the scientific disciplines therein;
 - (c) the information exchange and training programs, their methodologies, their specialization and decentralization, and the participation of the professional staff therein;
 - (d) the adequacy of the support services and other facilities.
- (v) The actual and potential impact and usefulness of the Council's activities in relation to:
- (a) food security concerns, including
 - agricultural production and the equity of distribution of benefits from increased production;
 - the economic situation of resource-poor farmers, particularly women farmers, and their employment and income opportunities;
 - the sustainability of productive land use systems in developing countries, and questions of biological diversity;
 - (b) research capacity in developing countries, through
 - its information exchange and training programs;

- collaboration with national research and development programs;
- cooperation with other international institutes and organizations.

(vi) The effectiveness of the management of the Council and the appropriateness of its structures, with particular reference to:

- (a) Governance - Donor Support Group; Board of Trustees and its committees, audit function;
- (b) Program Management - leadership, organizational structure, planning, monitoring and review systems, management of program activities;
- (c) Personnel - recruitment, staff development and other procedures;
- (d) Finance - budget, financial reporting and audit systems;
- (e) Fund raising - strategies adopted and prospects for the future, the balance between core and non-core funding;
- (f) Administration - physical facilities, procurement, general services (security, transport, travel, etc.);
- (g) Information - communications services, publication and distribution services, library, management information;
- (h) Relationship with external environment - linkages with the host government, clients, collaborators, donors.

(viii) Constraints on the Council's activities which may be hindering the implementation of its programs, and possible means of reducing or eliminating such constraints. Special attention should be paid to the issue of core funding vs. restricted or project funding.

"3. GENERAL CONSIDERATIONS

The question of ICRAF's role in ensuring that the products of research are both informed by and transmitted through extension services to its ultimate beneficiaries - the farmers - is of particular concern. Other aspects of paramount importance are the priorities within and between research programs, the role of the Machakos field station, the balance between headquarters and off-campus activities, and relationships with national programs. All of these considerations relate to the ways in which the Council translates its policies and strategies into projects and activities.

"4. REPORTING

On the basis of its review, the Panel will report to the Donor Support Group and make specific recommendations related to these terms of reference and the appended list of issues. An indication should also be given of the relative

importance of the various recommendations made.

The Review team should feel free to make any observations or recommendations it wishes, because the report is theirs alone. Equally, it should be clearly understood that the Panel cannot commit the Donor Support Group to any consequent action, and the Council should bear this in mind when considering implementation of the Panel's recommendations before the report has been discussed by the Donor Support Group."

In addition to these Terms of Reference, the Donor Support Group (DSG) Annexed a "List of Issues" giving fuller details of the questions that concerned them. The Panel tried to address all these aspects as far as possible in the time available notwithstanding the level of detail contained in the terms of reference. The Panel, nevertheless, confined its report largely to strategic issues, rather than operational ones, except where precise detail was germane to the issue.

2.3. Composition of the Review Panel

The review Panel was composed in such a manner as to build a team offering the range of background experience required to cover the main issues likely to arise in examining the various aspects of ICRAF's current and future activities. The following persons, whose summary biodata can be found in Annex 7.1, were selected to conduct the review:

Mr. Moise Mensah (Chair of Review Panel), Assistant President, Project Management Department of International Fund for Agricultural Development, Rome, Italy;

Mr. Paul Cooper, Financial Consultant, Gulfport, Florida, USA.
Took up a two-week special assignment as Financial consultant in support of the Review Panel's work.

Dr. M. Yousaf Chaudhri, Director General, National Agricultural Research Centre, Islamabad, Pakistan;

Mr. Luis Crouch, Businessman, Management Consultant, Santo Domingo, Dominican Republic;

Dr. Louise Fortmann, Associate Professor (Acting), Department of Forestry and Resource Management, University of California at Berkeley - USA;

Dr. Drake Hocking, Programme Officer, Forestry; Swiss Development Cooperation in Nepal, Kathmandu, Nepal;

2.4. The Review Process

Together with the Terms of Reference of the Review Panel drawn up by a subcommittee of the DSG and agreed upon by the ICRAF Board, Panel members then received a set of basic documents before undertaking the Review. Those documents included the Charter of ICRAF, the Headquarters Agreement, the various statements on ICRAF's strategy and programmes over the period 1981-89, a copy of the 1984 External Review Report, as well as selected annual reports and a list of ICRAF publications.

Two Panel members (Mensah and Crouch) attended an "open seminar" of the Board of Trustees, which took place from April 28 to May 4 and provided an occasion for ICRAF management to update Board members, donors and observers on the state of the art at ICRAF and benefit from the participants' comments. The two Panel members also took the opportunity to attend a closed session of the Board, at the kind invitation of the Board Chairman and the Director General.

The Review Panel members arrived at ICRAF Headquarters in Nairobi, during the week 18-24 June, except for Mr. Paul Cooper, who joined the Team on July 10, for a two-week assignment as financial consultant. The members were provided with additional documents as required. ICRAF Management held a series of comprehensive presentations on ICRAF's activities during the first week. The presentations included an overview by the Director General Bjorn Lundgren, followed by detailed talks on the Research Development Division (RDD), Collaborative Programme Division (COLLPRO) and the Information and Communication Division (INFOCOMM) made by their respective Directors, Dr. Peter Huxley, Mr. Bruce Scott and Mr. Robert Huggan, assisted by their programme coordinators and unit heads. Friday, 23 June, was devoted to the presentation of ICRAF's strategy and options for the future as well as issues related to resource needs and structure.

During the various presentations, panel members were able to ask questions and offer comments as they deemed fit. A set of questions was also submitted to ICRAF management for written answers. Dr. Howard Stepler, Chairman of ICRAF Board, acceded to the Panel's request for written comments on ICRAF's mandate and related issues.

The Review Panel members also undertook field visits mainly to assess the state of the collaborative efforts between ICRAF and national research institutions as well as International Agricultural Research Centres. In that connection, two Panel members visited the Agroforestry Regional Networks for Africa (AFRENA) programmes in Malawi and Zambia while two other Panel members visited the AFRENA work in Cameroon, where activities are already established, and Mali and Ethiopia, where activities are at the initial stage of Diagnosis and Design. The visits to West Africa and Ethiopia provided opportunities to review cooperation between ICRAF, IITA and ILCA, especially within the framework of the Alley Farming Network for Tropical Africa (AFNETA). In Kenya, Panel members visited the Machakos Field Station, the Maseno Project (AFRENA) and the Siaya Agroforestry Project sponsored by CARE. During these field visits,

Panel members made contact with policy makers, research managers, scientists and farmers as well as other land users. A very useful tool for reviewing collaboration between ICRAF and International Centres was the exchange of correspondence between the Chair of the Panel and Directors of several international agricultural research centres(IARCs).

To the question of how IARCs assessed their current and future collaboration with ICRAF, several Centres provided constructive comments from which the Panel benefited. Last but not least, Panel Members seized every opportunity to contact as many donor representations, and non-governmental organizations as possible, both in Nairobi and elsewhere.

2.5.Acknowledgements

For the work of the External Review Panel to be accomplished in the allotted time, it has been necessary to call upon many members of the ICRAF family for assistance. We required not only a wealth of information and documentation, but also the day to day interest, cooperation and support of them all. We deeply appreciate the efforts of everyone who assisted us in carrying out our task.

We would specially like to acknowledge the cooperation of the ICRAF Board of Trustees and its Chair, Dr. Howard Stepler for inviting us to attend a board meeting and sharing their views with us. The staff of ICRAF, from Dr. Bjorn Lundgren, the Director-General to the women who provided refreshments, could not have been more accommodating. We are especially grateful to Ms. Nancy J. B. Nyambega and Ms. Esther Mukandoli who patiently entered and re-entered our manuscripts, into their word processors until we were able to reach a finished product, and also to Mr. David Gatama who tirelessly ensured that the sophisticated equipment behaved properly. Mr. Bruce Scott was the coordinator for our review and he and Ms. Geeta Patel helped us in innumerable ways. We would be remiss if we failed to mention the services of Mr. Barnabas Nyachienga who provided us with prompt and safe transportation even when we kept him late into the evening. We give our thanks to every member of the ICRAF staff without whose cooperation we would not have been able to do our task.

Last but not least, we wish to express our deep gratitude to Ms. Martha ter Kuile, the Chair of the Donor Support Group, Dr. D. A. Bekoe, Director of the IDRC Regional Office in Nairobi for the very precious support they provided to the Review Panel.

3. ICRAF'S EXPERIENCE UP TO THE 1984 EXTERNAL REVIEW.

3.1. Origins, Inception and Initial Programme

The present Review Panel is fortunate in having had available the Report of the 1984 External Review Panel, which records ICRAF's historical background and early development in considerable detail. This chapter is drawn largely from that source.

ICRAF emerged out of a seminal study initiated by the International Development Research Centre (IDRC) in 1975. Although its report, entitled "Trees, Food, and People: Land Management in the Tropics", was published only in 1977, its results were already finding a consensus for action by 1976. This consensus is best stated in the report, which recommended the creation of "an internationally financed council for research in agroforestry ... leading to better land use in the tropics [through a programme] to encourage and support research, acquire and disseminate information ... and create additional work opportunities in harmony with the wishes of the rural people".

IDRC took the initiative to assemble a group of potential donors which approved a Charter for such a Council, selected a Board of Trustees and appointed IDRC as Executing Agency to bring the Council into existence. ICRAF began operations in 1977 with a staff of two at the Royal Tropical Institute in Amsterdam. Meanwhile, IDRC was negotiating an agreement with the Government of Kenya to establish ICRAF's permanent headquarters in Nairobi, where it moved in July 1978.

Early expectations of rapid progress by the new Council were unrealistically high for a new technical field with as yet amorphous boundaries and led, in 1980, to disagreements about mandate and operations. Dr. Howard Stepler, Interim Director, drafted a new "Strategy for ICRAF" and "A Scenario for ICRAF for Year Q", which were approved by the Board. A new Director, Dr. Bjorn Lundgren (the present Director General), was appointed in September, 1981, and given clarified guidelines.

In developing its Programme of Work, ICRAF then focused on building up an interdisciplinary team of scientists who could analyze land use systems and design relevant agroforestry technologies to help overcome constraints. Concurrently, it systematically assembled, analyzed and synthesised knowledge on agroforestry systems and on appropriate research methodology and began to disseminate them.

In these activities, the 1984 Review Panel observed that ICRAF made "very considerable progress towards the attainment of the objectives for which the Council was created, and on their sense of purpose and dedication thereto".

3.2. Sponsorship and Financial Support

The ICRAF Charter was signed by Canada, Guyana, Senegal and the IDRC. The Government of Kenya entered into an Agreement to host the Council and to provide the conditions for it to operate. The original sponsors maintained or increased their support during the next six years, and were joined by the following additional agencies, listed in alphabetical order:

- Beijer Institute (Sweden)
- Centre Technique Forestier Tropicale (CTFT, France)
- Ford Foundation
- German Agency for Technical Cooperation (GTZ)
- German Foundation for International Development (DSE)
- Norwegian Ministry of Foreign Affairs
- Rockefeller Foundation
- Swedish International Development Agency (SIDA)
- U.S. Agency for International Development (USAID)

The total amount of support increased steadily from about \$.75 million in 1981 to \$1.2 million in 1984. However, the proportion of this that was unrestricted core funding decreased from 83% to 45% over the same period. Of the balance, a significant proportion (50% in 1981; 25% in 1984) consisted of staff secondments. Thus, although the donors on the whole gave support to ICRAF's basic objectives, ICRAF's freedom to plan, develop and pursue a coherent long-term programme was hampered by the restricted nature of the support received.

3.3. ICRAF's Mandate, Strategy and Programmes (1981-1984)

3.3.1. Mandate & Successive Interpretations

ICRAF's mandate is found in Articles IV and V of its Charter. These Articles state:

"IV. OBJECTS

The objects of the Council are to increase the social, economic, and nutritional well-being of the peoples of developing countries through the promotion of agroforestry systems to achieve better land use in developing countries without detriment to their environments, to encourage and support research and training relative to such systems, to facilitate the collection and dissemination of information relevant to such systems, and to assist in the international coordination of agroforestry development, and, specifically:

- a) to identify aspects of agroforestry systems generally and tree components in particular, about which there is lack of knowledge, and to support research thereon;
- b) to support or stimulate research to identify or improve species on trees and other forest flora and fauna that are underused;

- c) to assist in the coordination of agroforestry research for various ecological regions;
- d) to facilitate the extension and implementation of the results of research in agroforestry, and
- e) to encourage and support training in appropriate disciplines with the aim of developing the research capabilities of national institutions engaged in agroforestry research.

"V. ACTIVITIES

The Council shall undertake all such activities as are conducive to the furtherance of its objectives and, without limiting the generality of the foregoing, such activities may include:

- a) the collection, evaluating, cataloguing, and dissemination of information relevant to agroforestry, with particular emphasis on use by field personnel;
- b) the stimulation of research relevant to agroforestry by governments, and by national and international, public and private organizations and agencies, by universities, and by individuals, and fostering of cooperation in research relevant to agroforestry systems;
- c) the sponsoring of research relevant to agroforestry systems, on important species of trees and other crops relevant to such systems, and on the harvesting, processing, and marketing of forest products;
- d) the participating in the management and financing of pilot and experimental projects in agroforestry;
- e) the conducting of seminars and the convening of working groups on agroforestry;
- f) the promotion of the teaching of the principles of agroforestry in educational systems, including the teaching of tree sciences;
- g) the promotion of the orientation of forestry and agricultural teaching toward better land use; and
- h) the demonstration, publication, and dissemination of research results and other information on agroforestry".

The first two years of ICRAF's existence saw this mandate interpreted in a way that created the impression that agroforestry was primarily concerned with "wastelands", and that ICRAF would secure funds for field projects. The 1981

Stepler Papers entitled "A Strategy for ICRAF" and "A Scenario for ICRAF for Year Q", as approved by the Board, were accepted by the 1984 Review Panel as more appropriate interpretations of the mandate for the basis of programme development, organization and staffing in the initial years. The previous interpretation had been narrowly confined to emphasizing ICRAF's role as a *Council*, concentrating on the collection, synthesis, evaluation and dissemination of existing information. It had excluded direct involvement in the generation of new technology. In other words, ICRAF would not itself do agroforestry research. However, this interpretation was not held unanimously; differing and sometimes conflicting views were expressed by ICRAF's Board, staff, consultants, advisers and donors. This has been a difficult aspect of ICRAF's existence.

3.3.2. Strategy and Programme Evolution

A major element of ICRAF's strategy had been determined by the perception that agroforestry should increase the productivity, product diversity and/or sustainability of a land use system. Like interpretation of its mandate, ICRAF's operational strategy has been the subject of continuing heated debate. A firm and pragmatic direction emerged with adoption of the 1981 Stepler Papers. Central to this was the stress rightly given to the multidisciplinary approach. ICRAF's small staff of professionals (3 in 1978, rising to 26 in 1984) worked very closely together. Even after the definition of operational and service programmes, the same multidisciplinary team worked in all the programmes with individual team members serving as the different programme coordinators. Project activities were informed and advised through cross-programme Working Groups, which met regularly to discuss operations and support requirements.

Work programmes were designated as follows:

Operational Programmes

- Agroforestry Systems Research and Evaluation (ASRE)
- Agroforestry Technology Research and Evaluation (ATRE)
- Collaborative and Special Projects (COSPRO)
- Training and Education
- Agroforestry Advisory Unit

Service Programmes

- Machakos Field Station
- Information

3.3.2.1. Agroforestry Systems Research & Evaluation (ASRE)

The central project of this programme, and indeed for ICRAF during these early years, was the development of a methodology for "Diagnosis and Design" (D & D), through which the constraints on productivity or sustainability of any particular land use system could be analysed and appropriate interventions

proposed. It sets the stage for agroforestry research by identifying priorities, leading to development of agroforestry technologies appropriate for a particular situation. Shortcomings of the D & D methodology identified by the 1984 Review Panel were that it was silent on criteria for selection of specific, strategic sites for priority research and that ICRAF "still falls short of being able to instruct trainees on how precisely to diagnose particular types of land use systems."

Other projects in this programme included the development of a systematic collection of information on existing agroforestry systems, using a uniform data format that has proved remarkably difficult to define and develop; a tree seed project to access reliable sources of propagation materials; economic studies of agroforestry systems which, in collaboration with the Australian National University, produced a computer model called MULBUD; a project to develop methods for comparative evaluation of land use systems; and a study of tree and land tenure as related to agroforestry.

3.3.2.2. Agroforestry Technology Research & Evaluation (ATRE)

This programme's stated aims were to collect and evaluate existing knowledge on agroforestry technologies and data of relevance to agroforestry according to problem-oriented priorities and to increase ICRAF's ability to obtain more data and information through the development of methods to study appropriate aspects of technology. This translated into the production of an impressively large amount of written material dealing with research methodology, subject matter reviews, data bases, handbooks and guides. Among these, the MPT database was notable.

There was also widespread dissemination through a number of seminars and workshops and through distribution of the written materials. But the 1984 Review Panel observed that problems had been encountered in use of these materials, suggesting a need for improvement in presentation.

3.3.2.3. Collaborative and Special Projects (COSPRO)

The purposes here were to strengthen capabilities in national research institutions for generation of agroforestry technology and to promote actual research projects. The programme defined five (now four) main geographic regions of the world, each sub-divided into three or four agro-ecological zones. Within this matrix, COSPRO activities were envisaged as proceeding systematically through identification of potential partner institutions, D & D, formulation of projects and implementation. This last stage would be primarily through the partner national institution, with a degree of ICRAF participation that depended on need and resources.

During this period, COSPRO operated in six countries (seven sites described as "opportunistic rather than strategic") and contributed much to the institutional projection and creation of a demand for ICRAF's services. At each site,

however, the process had not yet advanced beyond the formulation stage at the time of the 1984 Review.

3.3.2.4. Training and Education

An effective training package was developed and used to train sixty participants in short courses, focusing on ICRAF's multidisciplinary approach to land use analysis and design of technologies. In addition, ICRAF hosted two research fellows and seven interns.

The package of teaching materials was available for the trainees to use on return to their countries and institutions; a special workshop on professional education produced basic materials for degree courses in agroforestry.

3.3.2.5. Agroforestry Advisory Unit

This unit, consisting of three staff members, was conceived as a kind of cost-recovery consulting service. It actually executed 14 projects during this period, but generated considerable controversy, both within ICRAF and outside, over the need for such a special unit and its failure to cover its cost.

3.3.2.6. Machakos Field Station

In 1981, the Government of Kenya allotted to ICRAF the use of 40 hectares of land, which was then partially developed as a demonstration and trials area with fencing, a small building and basic utilities. A demonstration arboretum included 40 species, and a range of simple soil conservation and agroforestry systems was established. The station was used as a training area and for demonstrations to the large number of visitors.

3.3.2.7. Information

Up to 1984, the Library had collected about 7000 documents (including about 4000 reprints), of which about half had been catalogued on computer. A special thesaurus on agroforestry terms was developed to facilitate coding, indexing and retrieval. During this period, also, ICRAF responded to some 200 requests for specific information and issued an annotated bibliography of 450 titles. Other publications included seven books, 24 working papers, 18 miscellaneous papers, 12 newsletters, and a range of descriptive and promotional material. In addition, a refereed technical journal, *Agroforestry Systems*, was initiated in collaboration with a commercial publisher.

3.4. The 1984 External Review

As indicated above in Chapter 2, ICRAF's Board in 1984, on the

recommendation of its Programme Committee, requested and received the support of the donor group to fund a review team to evaluate ICRAF's performance, critically review its mandate and strategy, and recommend on future development options. The Review Panel, consisting of Ralph W. Cummings (Chair), Jeffery Burley, Gelia T. Castillo, and Luis A. Navarro, worked from September to December, 1984, and their Report and its recommendations were adopted by the Board in 1985.

3.4.1. Assessment of Accomplishments

The Panel commended the progress and productivity of ICRAF, commenting on the skillful management that created a coherent and competent staff and programme from a complex and diverse array of resources. They commented, "The Council is rapidly becoming the world's leading source for comprehensive information on the subject of agroforestry."

3.4.2. Main Issues and Recommendations Made in 1984

The following statements summarise the main recommendations made in 1984 by the first Review Panel. The numbering used here corresponds to that of the 1984 External Review Report.

3.4.2.1. Mandate

5. The existing mandate needs no revision, at least in the near future.
6. However, its interpretation should be broadened to include collaborative action research for generation of new agroforestry technology.

3.4.2.2. Management

- 7 & 8. The donor group should be formalised and develop ways of collaboration to assure sustained support and functioning of ICRAF.
 9. ICRAF has earned and has justified the placing of larger portions of funding support to core operations on a sustained basis.
- Pg.43. "ICRAF should be cautioned against spreading its resources and talent too thinly".
4. Two additional senior management and administrative positions are required.
 5. Editing and publication should be strengthened and staff increased.
 6. Training facilities require improvement to meet the continuing need for courses, conferences, workshops, and symposia at headquarters.

7. Consideration should be given to including residential accommodation at its headquarters subject to cost considerations compared to available alternatives.

3.4.2.3. Programme

4. The relevance and applicability of approaches developed to date need to be tested as to effectiveness in meeting the needs of subsistence farmers in developing countries, with more field applications; and on Pg. 38: The research programme "might operate more closely under field production conditions [on-farm] in order to discover the questions and requests to which national scientists have to respond. ICRAF should devise appropriate tools required by those scientists to answer such questions."
 - 6, 10, & 11. ICRAF should broaden the interpretation of its mandate to permit moving into "hands on" technology generation research in a collaborative model for national and regional programmes.
 10. Information dissemination and technology generation should receive more emphasis.
 13. Technology options for future study should include higher inputs in addition to purely subsistence practices.
 14. ICRAF must have the ability and capacity to make projections of anticipated economic benefits of agroforestry technology options; MULBUD is a promising tool for this.
 17. A fee-for-services advisory function should continue, drawing from the entire professional staff of ICRAF, which will require some overstaffing in order to meet this function without undue drain on its capacity to carry forward its basic core programme. Economics, publications, administration and research management are subjects for which advisory demand can be expected to be high.
 18. The technical content and staff involvement at Machakos Field Station need to be more precisely defined.
- Pg. 41. "Expansion of COSPRO should be based on ICRAF's true capability for providing such support."

4. ICRAF'S CHARTER, LEGAL STATUS AND GOVERNANCE TO DATE

4.1. Charter

The International Council for Research in Agroforestry (ICRAF) was chartered in 1978 as an autonomous non-profit international organisation, and the Charter was signed by representatives of Canada, Guyana, the International Development Research Centre and Senegal. The IDRC was designated by the signatories to the Charter and by other interested countries and donor agencies (referred to as the Group) as Executing Agency. The IDRC, in representation of the Group, simultaneously signed an agreement with the Government of the Republic of Kenya (the first Director of ICRAF, Dr King, also signed as endorsing the agreement) in which ICRAF was given legal status and juridical personality, international privileges and immunities, with the mandate as set forth in the Charter.

At the ICRAF Board of Trustees meeting of April 6 - 7, 1981, the IDRC served notice that it considered complete its mission to establish the Council and that it was withdrawing as Executing Agency effective August 31 of that same year. The IDRC informed ICRAF that it would communicate its intention to the Ministry of Foreign Affairs of the Government of the Republic of Kenya (which it did by letter of April 8, 1981). ICRAF's Board of Trustees was instructed to accept the termination of IDRC's role by resolution, which it did at the same meeting. ICRAF was also instructed to negotiate with the Government of the Republic of Kenya the endorsement of the Headquarters Agreement.

There is no record in the files of ICRAF of IDRC having received an acknowledgement from the Kenyan Ministry of Foreign Affairs. Nevertheless, the Director General stated that the Protocol Officer of the Ministry of Foreign Affairs had informed him that, since the original agreement was signed (as an endorsement) by Dr. King, the Government of the Republic of Kenya considered the agreement valid and as endorsed as of the date of original signing, November 21, 1978, and had assured the Director General that no additional negotiation or agreement was necessary.

The ICRAF Board has been acting as a completely autonomous institution in virtue of the terms of the above cited letter from the IDRC to the Ministry of Foreign Affairs of Kenya. The above mentioned letter, which was used as the basis for the Board's resolution accepting the IDRC termination, informs the Kenyan Ministry:

"Under Article VIII, Section 6 and 7, the Group retained the power to appoint a few trustees to ICRAF's Board in consultation with the Board".

"IDRC has consulted the representatives of the Group and it has been decided to transfer all power for appointment of any Trustees from the Group to the Board. Henceforth, ICRAF's Board shall exercise the sole power of appointment of Trustees".

The IDRC's Secretary and General Counsel, P.C. Pfeifer, failed to note that the Executing Agency's and Group's powers should have been ceded to ICRAF by modification of the Article XI, Section 2, giving ICRAF's Board the power to amend the Charter.

Recommendation

The Panel recommends to the Board of Trustees and management, negotiate with the IDRC so that:

- a. The Board resolution accepting IDRC's termination of its role as Executing Agency be recognized as valid as of August 31, 1981;**
- b. Agreement as endorsed by ICRAF, with the Government of the Republic of Kenya be accepted as valid as of November 21, 1978; and**
- c. The IDRC complete the process by expressing in writing to the ICRAF Board of Trustees that the termination letter of P.C. Pfeifer of April 8, 1981 (valid as of August 31, 1981) had the intention of conferring on ICRAF control of its affairs and that it was the intention of IDRC as the Executing Agency of the Group to confer upon ICRAF's Board of Trustees all the powers previously retained by the Group by Article XI, Section 2, on substantive amendments and that all actions taken by the Board of Trustees in exercise of the governance of ICRAF, including amendments of any of the Articles of its Charter, are to be considered valid as of August 31, 1981.**

4.2. The Board of Trustees

The Board of Trustees consists of thirteen members, eleven appointed in their personal capacities, one named by the Government of the Republic of Kenya, and one ex-officio (the Director General). The eleven members appointed in their personal capacities are appointed by the Board. The current members and elected officers of the Board of Trustees are:

Dr H. A. Stepler - Chair, Canada
Mr S. Muturi - Vice-Chair, Kenya
Dr B. O. Lundgren - Director General, ex-officio, Sweden
Prof. G. T. Castillo, Philippines
Dr R. W. Cummings, United States
Dr G. D. Holmes, United Kingdom
Dr J. McWilliam, Australia
Dr R. Mupawose, Zimbabwe
Prof. F. J. Schmitheusen, Switzerland
Dr M. Singh, India
Dr M. Toure, Senegal

There are two vacancies. The Donor Support Group may nominate individuals for appointment to the Board. The Board tries to maintain a balance in composition between developing and industrialized countries. Seven members

constitute a quorum.

The Board of Trustees has four committees, an Executive and Finance Committee, a Program Committee, a Nominating Committee and an Audit Committee, this last constituted at the May, 1989, meeting of the Board and, in effect, as yet not operational. The Committees are constituted as follows:

BOARD COMMITTEES (AT 3 MAY 1989)

EXECUTIVE & FINANCE COMMITTEE

Prof. H. A. Stepler (Chair)
Mr. S. Muturi
Dr. R. W. Cummings
Dr. J. McWilliam
Dr. B. O. Lundgren

PROGRAMME COMMITTEE

Dr. J. McWilliam (Chair)
Prof. G. T. Castillo
Dr. G. D. Holmes
Dr. R. Mupawose
Prof. F. J. Schmithuesen.

NOMINATIONS COMMITTEE

Mr. S. Muturi (Chair)
Prof. G. T. Castillo
Dr. G. D. Holmes
Prof. H. A. Stepler (Ex Officio)

AUDIT COMMITTEE

Dr. R. W. Cummings (Chair)
Dr. R. Mupawose
Dr. M. Singh

The ICRAF Board of Trustees is forcefully and energetically led by Dr. Howard Stepler of Canada. The Chairman fulfilled his second term as member of ICRAF's Board in May, 1989. Dr. Stepler had for almost a year (in 1981) served as provisional Director, during ICRAF's search for a Director, the process which recruited Dr. B. Lundgren in September, 1981.

The ICRAF Board considered it expedient to re-elect Dr. Howard Stepler as Chair because of the dynamics of the membership of the ICRAF Board of Trustees: that is, Dr. Ralph Cummings was ill during 1988; Dr. Gustavo Nores resigned because of conflict of interest as a TAC member; the lack of experience

in the CG system of the others, the too-recent appointments of Drs. McWilliams, Holmes and Mupawoze; and the impending series of reviews (the External Review, the visit of the TAC Fact Finding Mission to Non-Associated Centres, the U.S.A.I.D. Review). This consideration required the amendment of By-Law No. 2 so as to give power to the Board of Trustees to extend the term of appointment or term of office of the Chairman of the Board for a period during which exceptional circumstance might warrant such extension, with a three year limit. It appears to the External Review Panel that this extraordinary measure was justified.

As mentioned earlier, the Chair of the External Review Panel, Mr. Moise Mensah, and one member, Mr. Luis Crouch, were invited to attend, and were present, as observers at the May, 1989, Board of Trustee meetings. Discussions on the ICRAF Budget, especially with reference to building shortfall, accumulated deficits and the projected 1989 deficit, were heated and determinant: there would be no additional operating deficit. There was ample and informed participation by all members. The present membership of the Board, as indicated by discussions during the sessions, promises strong future leadership for the Council, as regards both orthodox financial management and the quality of science of the programs.

The Executive and Finance, Programme and Nominating Committees function adequately and are constituted according to the By-Laws. The May, 1989, Board of Trustees meeting, as reported above, established an Audit Committee and named as its Chairman Dr. R. Cummings. Dr. Cumming's recent experience, as Chairman of ILCA's Board of Trustees, in organizing a centre's Audit Committee assures the adequate institutionalization of the responsibilities and procedures of the Committee.

Having risked the observation that ICRAF's Board and its Committee function adequately, the Panel further states that the affirmation is based on observation of the sessions of only one Board meeting, April-May, 1989.

The 1984 External Review Report expressed (p.74), "The Review Panel did not consider itself charged with conducting a management review". Nevertheless, the Review Panel described the management capabilities of the Director General (then Director) and the deficiencies due to the excessive burden on administration and made recommendations regarding needs for additional administrative personnel. The Panel made no comment on the Board of Trustees. One can deduce that the Board understood and lived with the deficiencies since two of the Panel members have been Board members for several years. Boards composed of scientists will tend to show a science bias even though they understand and identify administrative or management deficiencies.

The general impression of ICRAF's governance, its Board of Trustees, and its top management, is that they are all simultaneously "getting their act together". We feel this because:

Management has taken a series of important steps to institute policies and

implement recommendations to correct a large gamut of deficiencies; Management has made decisions and has proceed to employ the administration heads needed since before 1984; and the Board of Trustees has decided it will not permit operating deficits (this decision was imposed after open combat within the Board between deficit spenders and balanced budgeters).

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4.2.1. Future Role of the Board

The Panel expressed above an optimistic judgement on ICRAF's Board of Trustees and top management; that it would appear that they are getting procedures, people and finances in place and in good working order. What is the Board's role over the next few years? What strategic thinking should be exercised?

The principal role of Boards of Trustees, in our opinion, is the assurance of continued competent leadership of its institution, its own composition and the chief executive. A Board must continuously be conscious of the balance of leadership and managerial capacity of its chief executive. If, in the Board's judgement, s/he has "it", full support. If not, change. There is also the importance of the apparently innocuous role of a nominating committee of a Board. A nominating committee must think strategically and collectively. A Board Chair doesn't constitute a nominating committee by naming people who don't fit on other committees, s/he looks for and names good judges of character who think in the long term.

The role of ICRAF's Board over the next two or three years is crucial to the Council. For example, the decision of the Board on the implementation of the Professional Staff Policies determined whether or not there would be a change in senior leadership. The Professional Staff Policies proposed to be instituted July 1, 1989, would have limited total service to ICRAF to ten years, except with the Board's approval. At the April-May meeting of 1989, following the recommendation of the Director General, who did not favour the retroactive nature of the original proposal, the Board fixed July 1, 1989, as the starting date for determination of limit for reappointment to ten years. Whether this was wise is questionable, and whether the proposed limitation could be considered "retroactive" is also questionable. The initial policy proposal left the Board an option. As it is, the Board was removed from the immediate process and lost an important opportunity for early review of quality of management and of quality of science, that is, of stature of leadership.

4.3. ICRAF Donor Support Groups

ICRAF has a confusing history of support groups. There is the initial Group which was defined in the Charter of the Council, but never identified, as a "consortium of countries, donor agencies, and others directly interested" and which designated the IDRC as the Executing Agency.

The IDRC had a predominant role as leader in the support of ICRAF until 1981. After a period of difficulties with ICRAF leadership, IDRC abruptly advised

ICRAF's Board in April, 1981, that as of August 31 it would terminate its role as **Executing Agency**. Nevertheless, with other donor agencies and governments, the Centre continued its support. With no formal group structure, the various donor agencies and ICRAF developed their relations at different levels, formal and informal, with headquarters and with local regional representations. In 1985, motivated in part by the 1984 External Review process, there was formed a Donor Support Group. The institutionalization of this second Group was hindered again by lack of effective leadership among the donors but also by confusion arising from participation both by the donor's headquarters and their Nairobi technical representatives.

4.3.1. Status of Implementation of Recommendations of the 1984 Review.

1984 Recommendations 7 & 8

The donor group should formalize itself and develop ways of collaboration to assure sustained support and functioning of ICRAF.

Status

A start has been made on this, but coordination between local representatives and headquarters of several donors has been poor and there remains a wide divergence of donor views about precise details of the proper role for ICRAF. In addition, certain powers have not been completely regularized.

Recent Developments and Comment

In 1987, there was an effort to clarify the situation and the donors representatives met in Washington on October 28, when there was accorded and signed a Memorandum of Understanding establishing the ICRAF Support Group (the terms of the memorandum refer to the membership as "the Group"). At this meeting it was agreed that "apart from the formal funding/policy meeting of the Group in Washington at Centres Week, a technical meeting will be held in Nairobi every year at the time of ICRAF's annual Board meeting, to which donors may send their technical representatives to discuss programme of work matters."

The October 29, 1988, meeting minutes refer to the ICRAF Support Group (as per Memorandum of Agreement) as the ICRAF Donors Support Group. At this meeting, the Nairobi technical representative attendance at the ICRAF Board meetings was again endorsed.

The intention of the ICRAF Support Group was that funding/policy matters be discussed at meetings in Washington and that technical matters be discussed during the course of the ICRAF Board meetings in Nairobi. A review of the minutes of the Nairobi TDSG (the Nairobi Group that came to be referred to as the Technical Donor Support Group: TDSG) indicates that this delineation was

not clearly accepted and that there developed friction between headquarters and Nairobi donor representatives. There were recommendations, for example, that "without a written and DSG-sanctioned charter, the idea of a TDSG be dropped ... as the TDSG, as is, has ceased to serve a useful function." The function of the TDSG is that of supplying the donors involved in the Washington pledging exercise with technical and operational information on ICRAF's activities.

The importance of the role of ICRAF's Support Group should not be underestimated. The need for clarifying the roles and modes of operation of the Washington and Nairobi groups cannot be overemphasised. There is a need for more structure and formalisation. Clearly, there has been an intention of following the CGIAR pattern, but the mechanisms have not been developed: there is no mini-Secretariat and no mini-Technical Advisory Committee; there is little structure to the meetings either in Washington or Nairobi; and most donors have two distinct lines of communication with ICRAF management, not to mention the numerous lines between scientists at ICRAF and their friends in and among the local donor representatives.

The ICRAF Support Group at their Nairobi meeting on 3 May, 1989, manifested a wait and see attitude as regards to the CGIAR initiative to review non-associated centres for possible admission to the system. It is the view of the External Review Panel that the Support Group should proceed to organize itself to support ICRAF better both from the technical and funding aspects. But, above all, organization is imperative to reduce the multiple conflicting pressures on ICRAF management of technical and non-technical local (Nairobi) and headquarters well-wishers and supporters.

One model for achieving donor coordination is the World Bank's coordination activities for ICIPE.

Recommendation:

The Panel recommends that the Support Group consider requesting the assistance of the World Bank, both in Washington and in its Nairobi-based regional headquarters, to assign a specific officer and/or office with the responsibility to carry out the role of Secretariat, as is the case with the International Centre for Insect Physiology and Ecology (ICIPE), whose Donor Support Group Secretariat is the office of the Director of Agricultural and Rural Development. (The Director serves as Chair of the ICIPE Donor Support Group, mobilizing funds and coordinating reviews, etc.) At the same time, and in correspondence with the possible Washington Secretariat, the World Bank regional office in Nairobi might assist the local ICRAF TDSG as Secretariat. Both Secretariats would require a minimum of funding to cover budget analysis and consultancies on management and (in the case of the Nairobi group) consultancies on program matters, which could be covered by ICRAF.

4.4. Leadership

The 1984 Review Panel Report (p.74) referred to ICRAF's leadership, when considering the need for additional administrative personnel : "the Panel has kept in mind ... could relieve the Director of some of the administrative load, maintain the very good esprit de corps, morale, sense of participation and dedication of the staff, maintain flexibility in assignment of the staff among the various functions and programme activities of the Council, and continue to encourage and foster the interdisciplinary interactions among the staff". Staff, after an additional five years, comment: "The Director General is an excellent man ... the D.G. has excellent management style ... the D.G. needs help ... the D.G. gives in easily, but leadership is strong enough ... the D.G. has learned to handle the Management Committee ... the D.G. buys peace, but it's OK, events will shape the organization, the AFRENAs forced the organization to shape itself". An outsider : "the D.G. is a leader, he took the Council and led it from the most humiliating circumstances to become a respected institution. He couldn't have done it, if he had respected management tenets". Another: "ICRAF is in need of a change; there's a danger of perpetuating the same ideas".

ICRAF has an effective Management Committee which consists of the Director General and the four Directors of Divisions. The Secretary is the Assistant to the Director General. The Committee meets regularly once a month but has frequent occasions for additional meetings. It has been said that the Management Committee has served to isolate the Director General from staff and that programme matters are seldom discussed. The Committee meeting is a most effective means of communication within ICRAF's management.

ICRAF's management has plans to constitute a similar internal programme committee.

4.5. Philosophy of Financing of ICRAF

One of the two documents written by Howard Stepler in 1981, "Scenario for ICRAF for Year Q", has served as the basis for the extraordinary growth of ICRAF's activities, especially special projects, since 1985. Essentially, it was the hypothesis: "ICRAF would have a steady-state core", and, " further suggested that overhead from special projects plus payback from special projects could be used to expand core activity and meet on-going core costs." The build-up of large deficits in core activities has proven unworkable and appears to have invalidated the hypothesis. To the observers of the Board meeting, it was clear that a change in philosophy had taken place. This was later confirmed in writing by the Chair of the Board of Trustees to the Chair of the External Review Panel.

4.5.1. Status of Implementation of Recommendations of the 1984 Review

1984 Recommendation 9:

ICRAF has earned and has justified the placing of larger portions of funding support to core operations on a sustained basis.

Status

ICRAF's core support has grown faster over the last five years, in relative terms, than most of the other international research institutions, a reflection of the interest in agroforestry and of the capacity of management to work with donors.

Comment

A large portion of ICRAF's restricted project funding is funding for operations which are core type activities such as research, even if conducted within national research systems, and could be classified as restricted core funding. If this change in classification from restricted project to restricted core could be negotiated with donors and institutionalized, it would clarify and improve ICRAF's funding position if the Council is accepted as a member institution of the CGIAR, and if restricted project donors would be willing to make a longer term commitment for funding such activities. The result would be an enhancement of core funding and an improved balance between core and special projects.

Recommendation

The ICRAF management should review all restricted projects with a view to identifying those which have the attributes of a core activity, that is, that are within ICRAF's mandate and for which ICRAF has a comparative advantage, and commence negotiations with the corresponding donors to obtain a commitment on a longer term basis so as to permit reclassification of the projects to restricted core.

Comments

ICRAF has been remarkably successful in generating support for its activities, as evidenced by the increase in total budget from US \$2.4M in 1984 to \$8.7M in 1989, a three-fold increase in five years. However, the proportion of core to special projects has steadily declined from 85% in 1980 to 50% in 1984, and currently stands at 34% in 1989 (written statement of DG)

The Panel recognizes two categories of costs that rebound to core from projects:

1. Direct: full-time and part-time scientific support.
2. Indirect: general administrative support.

The Panel tried to analyze the present funding balance, but could not discern a systematic relationship between core and special project funding. Moreover, many donors either limit or even exclude the charge-back to projects of costs that

return to core. This is alleged to be the source of a major part of the financial difficulties reviewed in Chapter 5.

It appears that donors tend to prefer financing projects rather than core, for reasons that lie largely in their internal administrative and budgetary arrangements, and arising out of national funding policies. The reason that donors go to ICRAF for implementation of projects is their perception that ICRAF possesses the substantive skills required. However, the disproportionate demands placed on core staff by the present load of special projects means that neither the projects nor the core activities receive the attention needed to assure high quality. Donors and ICRAF staff are dissatisfied and frustrated.

As long as funders of special projects are prepared to provide budgetary provision for full coverage of direct and indirect costs of core support, and such support can be provided without a need to hire additional staff, then there appears to be no reason for ICRAF to resist accepting more such projects. But this condition has, in recent years, been far exceeded, to the extent that Collaborative Programmes (COLLPRO) complain that they don't receive sufficient Research Development Division (RDD) support and simultaneously RDD staff complain that they are overburdened with backstopping special project and training activities and have insufficient time for research.

Attraction of quality staff requires a degree of job security and provision of adequate support for research. Build-up of core staff on a budget of project charge-backs either imposes an inordinate cost to core, or runs the risk of staff insecurity, if projects are cut or fail to materialize.

Therefore, we do not recommend that the present problem be solved solely by insistence on a greater budgetary provision in projects for charge-back of core support costs. The Panel, on the other hand, recognizes that certain categories of funding presently classed as restricted projects are not irrelevant to core and might be more appropriately termed as "restricted core".

4.5.2. Recommendation

The Panel recommends that donors may wish to consider ways in which their internal procedures would permit them to increase the proportion of their funding that is a long-term commitment, or core. If this is facilitated by use of the category "restricted core", then this is part of the recommendation.

5. ICRAF'S PERFORMANCE, 1985-1989

5.1. Management, Personnel and Administration

5.1.1. Status of Implementation of the Recommendations of the 1984 External Review Panel

5.1.1.1. Recommendations on Mandate

1984 Recommendation 5

The existing mandate needs no revision at least in the near future.

Status No revision has been proposed.

Comment

ICRAF's mandate appropriately addresses the immediate and long-term needs for improved and sustainable land use systems. The practice of science at ICRAF reflects these concerns.

1984 Recommendation 6

However, its interpretation should be broadened to include collaborative action research for generation of new agroforestry technology.

Status

This has been vigorously pursued, and is commented on in detail in the section "Programme of Activities".

5.1.1.2. Recommendations on Management

1984 Recommendation (Page 43)

ICRAF should be cautioned against spreading its resources and talent too thinly.

Status In the opinion of the Panel, this has not been fully observed in practice, and ICRAF still runs the risk of trying to do too much, too quickly. (See below for details.)

1984 Recommendation 20

Two additional senior management and administrative positions are required.

Status There has been a response, but belatedly, and many of ICRAF's present difficulties are traceable to delays in implementing this recommendation. (See below for more details.)

1984 Recommendation 15

Editing and publication should be strengthened and staff increased.

Status Pursued with extraordinary vigour, but there remains scope for focusing and increasing efficiency of work. (See below for more details.)

1984 Recommendation 16

Training facilities will require improvement to meet the continuing need for courses, conferences, workshops and symposia at headquarters.

Status Training facilities at headquarters have been improved, including an excellent audio-visual auditorium at ICRAF House.

Comment

Further development of training facilities should take place at a field location. The Panel emphasizes that this should take priority over any other capital investment (see also under INFOCOMM). Accommodation should be simple and basic.

1984 Recommendation 19

Consideration should be given to including residential accommodation for visitors and trainees at its headquarters complex, subject to cost considerations compared to available alternatives.

Status No accommodation is available on campus. Although this is understandable in the light of financial problems, the Panel was not shown an analysis comparing alternatives.

Comment

The Panel recommends that this analysis be done. The Panel is skeptical about the necessity or even desirability of accommodation on campus, and consider this to be a low priority item.

5.1.2. Personnel and Staff Development

The Review Panel commends ICRAF Management on the rapid and almost complete professionalization of Human Resource Management. Detailed comment and recommendations follow.

5.1.2.1. Performance 1985-1989

Policy and Comment

Since July 1, 1984, Human Resource management at ICRAF has been based on two sets of policies, the Professional Staff Policies and the Support Staff Policies, and corresponding procedures. The Professional Staff Policies integrates and bring up to date two previous sets of policies, the International Professional Staff and the National Professional Staff Policies. The integrated policies address the question of regular staff grades by assigning nationally recruited staff to Grades 1-3 and internationally recruited staff Grades 4-8. Qualified nationals may, of course, compete for positions in Grades 4-8, as these must be internationally advertised. As at other international centres and institutions, the division is seen by nationals of the country(ies) where the institution is based as a source of inequities and discrimination.

Human Resource management has received important consideration and attention from ICRAF Management over the last year. ICRAF has used the services of several consultants, national and international, and contracted surveys of salaries of similar organizations. It has developed with this assistance a new and comprehensive set of personnel policies for professional staff, whether national or international. The effort of ICRAF Management was in response to manifestations of confusion and discontent arising from the institution's growing complexity, the multiplication of outreach activities, persons promoted to international category without following appropriate selection procedures, presence of numerous seconded professionals, visiting scientists and others and the absence of specialized staff to manage the personnel function.

It was anticipated that the institution, as of July 1, 1989, of the Board-approved Professional Staff Policies would represent an equitable and sound basis for differentiating between staff members and establishing for each person his/her place in the structure of compensation and other emoluments. The existence of a set of policies for General Support Staff and the recent appointment of a Head of Human Resources should have marked a change, a general improvement in staff morale. In all cases, not only did the new policies represent considerable improvement for Professional Staff in conditions of employment, but were accompanied by similar increases in salaries and benefits to General Support Staff.

Perhaps the general human tendency to resist change exhibits itself even in cases where there have been increases of benefits or perhaps the activities of professional and consultant firms over the past year have led some staff members to expect greater improvements in conditions of employment or remuneration;

perhaps there are members of staff who feel that ambiguity in staff policies allows for greater bargaining power. It is not clear. The more negative reactions have come from some Professional Staff members (nationally recruited) who aspire to a Professional Staff (internationally recruited) category or who have hoped that their presence at ICRAF would facilitate financing or funding for advanced professional training, either at MSc or PhD level, which would then be an advancement, the fulfilment of an additional requisite toward the desired goals and privileges of international status.

Discussions revealed that, in essence, the difficulty was not with the new set of policies. Rather, the institution of the policies focused attention again on the very unequal salaries and benefits of what have become Professional Staff Grades 1-3 (formerly National Professional Staff), nationally recruited, and Professional Staff, Grades 4-8 (formerly International Professional Staff) internationally recruited. This renewed grievances over the implementation of previous policies, which influenced how some staff members anticipated the new policies would be implemented. Three areas stand out: housing and schooling allowances; and, above all, how positions are classified and how procedures for recruitment or selection are carried out for filling the positions.

Recommendation

The Panel recommends that any position for which a PhD degree is a requirement be classified International Professional Staff, and be internationally recruited.

Proposals for advanced training were reviewed. It was felt that since ICRAF is not an educational institution it should not divert core resources to advanced degree training for staff. If resources are made available by a donor for this purpose, ICRAF could endorse the candidate, who would not be guaranteed employment upon return to Kenya.

The External Review Panel commends ICRAF's efforts to reformulate Professional Staff Policies and congratulates the principal consultant, Dr. William Gormley, for their formulation. At the same time, while we cannot accept the tendency, also observed among staff at some other IARCs, of national professionals to brandish "discrimination" in their efforts to deal with their frustration over what they see as glaring inequities, we are obliged to accept evidence that in the past, ICRAF's management has frequently been inconsistent in the appointment of staff to what was the International Professional Staff category. It is expected that with the appointment of a professional Head of Human Resources, senior management (specifically, the Director General) will make every effort to assure that the process of selection and appointment is objective and that all are given equal opportunity.

Implementation of the Professional Staff Policies

ICRAF has developed a job evaluation system which is now in place. The Panel is satisfied with the objectivity and thoroughness of the process. This includes the application of six factors to each position : professional knowledge required;

difficulty of work; independence of work; work relationships; impact of work; and consequence of error (these include detailed considerations of qualification, experience and age). The positions were then graded.

ICRAF is in the process of developing a "Vacancy Management Procedure" which will indicate how each vacancy is to be treated. It will also include a policy for promotion, years in grade to qualify for the promotion, basic requirements and or qualifications for each grade. Each vacant position will be advertised internally and externally, nationally and internationally, as the occasion demands. The Panel is satisfied that, though personnel procedures are not yet in place, provisional procedures for appointment or promotion to vacant positions are being established. (Procedures for administering all personnel policies are being developed. These should be finalised in six months).

Recommendation

The External Review Panel recommends that the Professional Staff Policies be supplemented with policies on selection and/or acceptance of seconded scientists (or others) and visiting scientists and that special emphasis be given to the need to establish procedures for appointment, that include international advertisement, if such scientists (or others) are appointed to ICRAF's Professional Staff (internationally recruited) and also that assure equal opportunity to all staff already employed in the institution. The panel further recommends that the Professional Staff Policies recognize that the salaries and benefits of Grade 1-3 might not be sufficiently competitive to attract specialized staff such as professional accountants and computer programmers.

Training

Training is a principal objective of almost all research and/or development institutions and projects. ICRAF considers training as an activity inseparable from either its research or its collaboration with national programmes. It would seem logical to expect any important institution dedicated to research for the improvement of the well-being of Africans and others to concern itself not only with staff in the national programmes but with its own staff, of all levels. The aspiration of Kenyans, or employees of any other nationality, that employment at ICRAF or at a centre sponsored by donors from the industrialized world, might offer an opportunity for training is reasonable. The budgetary limitations, the deficits under which ICRAF is labouring, are well known to staff, to donors and to the External Review Panel members. But we feel that ICRAF can adjust its budget to accommodate a human resource development plan for its own staff. We recommend to ICRAF's Board the consideration of budgeting US \$50,000 per year for at least five years for the implementation of such a plan. A proposed plan is presented in the following chart. (The Panel is indebted to Virginia Guerrero, Head of Human Resources, for drafting this plan). (See attachment.)

ICRAF CORE STAFF TRAINING PROGRAMME PROPOSAL

Up to US\$ 50,000 for training to enhance technical capabilities:	KSh.	US\$ e19,5	Total
1. Vocational training for Grades I/II/III personnel (messengers, drivers, electrician, mechanic, carpenter). Approx. 2 people per year in the first and second year, 1 person per year in third year. Cost:Ksh. 5000 per person x 2 people a year	10,000	513	
2. Enhancement of secretarial/clerical skills Short courses/seminars by training institutions Approx. 5 people per year Cost: Ksh. 3000 per person x 5	15,000	769	
3. Enhancement of technological capabilities. Up-grading computer knowledge, accounting/clerical knowledge, desk-top publishing, printing, documentation, etc. In-house seminars/workshops/courses. Approx. 100 hours a year, Ksh. 500 per hour for outside trainer/teacher	50,000	2,564	
4. Enhancement of language capabilities. Attending language classes in language-training centres in Nairobi Approx. 30 employees (of any category) x Ksh. 5000 per academic year	150,000	7,692	
5. Attendance at overseas courses of any nature directly work-related: accounts/computing/publishing/administrative skills, etc. 2 people x year for periods between 2 weeks to 3 months US\$ 6000 per person		12,000	
6. Enhancement of administrative/supervisory skills for assistant level staff 2 people a year x KSh. 10000 per person. Overseas training: 1 person in any one year US\$ 5000	20,000	1,026 5,000	
7. Welfare: membership to B.P. Sports Club Ksh. 40,000 x year. Contribution to staff associations for social/sports activities Ksh. 40000 per year	40,000 40,000	2,051 2,051	
8. Performance Evaluation training for all supervisory staff Possibly one course/seminar every two years Approx. 20 hours at Ksh. 1000xhour	20,000	1,026	34,692

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Recommendation

Both Professional and Support Services Staff Policies should be supplemented with detailed policies in regards to selection of candidates for training. Special care should be exercised to build in safeguards for awarding of scholarships or other opportunities on the basis of merit and not as a system of conciliation.

Staff relations

There are three staff associations at ICRAF which are recognized and heard by ICRAF management; one for International Professional Staff, a second for National Professional Staff, and a third for Support Services Staff. Improvements in National Support Staff salaries and benefits were also approved by the Board at its May meeting and made effective July 1. Job descriptions for all positions at the Council have been made; procedures for management of personnel are rapidly being put in place.

ICRAF has plans for proceeding with formulation of personnel policies for local technical and support staff in outreach projects, which are growing rapidly. These will be brought into line with headquarters policies.

ICRAF has just terminated an exercise in job description and has implemented part of its system for evaluations. The system is designed to provide information for salary increases, promotions, etc., and to give the person evaluated feed-back on his/her performance. It has not as yet included evaluations of internationally recruited Professional Staff, which will begin in the course of 1989.

The Council staff, during the presence of our Panel, was in the midst of assimilation and there was considerable dialogue in process. Much more will be required before the system functions smoothly.

The Panel was appraised of the thoroughness and objectivity of the ICRAF Management in formulation and institution of the new set of Professional Staff policies and the modification and significant improvement of the Council's system of Human Resource management.

Salary disparities

Nationally-recruited Professional Staff have brought to our attention their concerns over the wide gap between salaries and privileges of internationally-recruited and nationally-recruited Professional Staff. Additionally, concerns over opportunities for training have been raised repeatedly. While we acknowledge that there is considerable difference between these groups and understand the dissatisfaction, we are obliged to express our agreement with ICRAF's policies. We have indicated above recommendations that we consider will help assure that future implementation eliminates procedures of the past that have served

only to exacerbate resentment.

ICRAF has utilized the results of the survey of salaries and benefits of comparable institutions which had been commissioned to Coopers & Lybrand as the basis for the adjustment recently applied to all staff. ICRAF is favourably competitive.

5.1.3. Administration, physical facilities, general services

5.1.3.1. Background and Performance 1985-89

All the administrative services receive direct attention from the Director of Finance and Administration, who has been considerably overburdened by the rapid growth of the Council and the lag in completion of the administrative structure to manage the increased size competently. The need for additional administrative personnel was surely recognized early on and was identified and recommended by the External Review Panel in its 1984 Report. Nevertheless, action to reinforce the structure of Finance and Administration was continuously postponed for budgetary reasons; it was always preferable to use resources for an additional scientist or some problematical need. The deteriorating financial situation made this a priority action, and compelled the ICRAF Management to proceed with hiring Heads of Human Resources and of Finance. The latter will report on August 1. At the same time a Board approved decision has been made for completing the top of the structure by hiring a Head of Operations early in 1990. The need for additional mid-level personnel, especially in Finance, will be highlighted elsewhere in the management section of this Review Report.

Comment on implementation of recommendations

ICRAF had contracted the services of management consultants, prior to the present External Review and detailed recommendations have been made in every area of management and services: Purchasing, Stores, Travel, Transport, Maintenance and others (Security, Housing, Catering, Health Care, Photocopying, Records Management and Computer!).

ICRAF has responded to the detailed recommendations of its consultant rapidly and positively and proceeded to implement those considered priorities. As a result, the achievements are surprising and commendable. We suggest that a programme of work be established to complete the tasks recommended and which have been accepted by ICRAF and that the services of a consultant be contracted in time to review accomplishments and report to the Board of Trustees at its next regular meeting in 1990.

5.1.3.2. Physical facilities

The ICRAF House and the facilities at Machakos Field Station are in an excellent state of maintenance. At headquarters, ground maintenance and

security are contracted adequately.

5.1.3.3. Purchasing and Stores

Purchasing and Stores are not as important at ICRAF as at most CGIAR centres. Policies and procedures have been established and implemented and will surely be perfected once the Head of Operations has been hired and is in place.

5.1.3.4. Transport and Travel

This is a not a problem area. Transport manual is complete and utilized and operations are good.

5.1.3.5. Insurance

ICRAF utilizes the services of a reputable insurance broker, Clarkson Notcutt, Ltd. of Nairobi. Discussions with Messrs. Sadler and Ndung'u of the firm satisfied the Panel that ICRAF's insurance needs were well covered and managed.

5.1.4. Observations on General Administration of Services

In discussion with professional staff and management, recurrent complaints were with administration. These complaints reflected more on budgetary, financial and control aspects of administration than on services. Administration (Finance, Personnel and Operations) has always been in crisis at ICRAF, but for the last five years the deficiencies have resulted from management decisions at the level of the Director General as regards delays in the hiring of administrative personnel, due to choice of priorities in the face of budgetary constraints.

Recent staffing actions and policy amendments go some way towards correcting many of these problems, except for financial management. These aspects are addressed in more detail in the next section.

5.1.5. ICRAF's Relationship with its Environment

ICRAF's environment can be divided into internal, external Kenya, external Africa, and others, and donors.

5.1.5.1. Inside ICRAF

ICRAF has what are internally viewed as excellent working conditions. ICRAF staff like the Director General's management style. There are several problem areas on which management has been working, namely: perceptions by nationally-

recruited professional staff of inequities in salaries and benefits vis-a-vis internationally-recruited professional staff; financial difficulties which derive from the overspending on the ambitious expansion of the Council since 1985; and deficiencies of the Division of Finance and Administration. The External Review Panel has addressed these problem areas and made comments and recommendations in the other sections of this report.

5.1.5.2. External Environment of ICRAF - Kenya

A hospitable people and government and a pleasant climate make Kenya an extraordinarily congenial place to work. Consequently, Kenya has become the home of literally thousands of organizations, businesses, religions; not-for-profit, non-governmental, and governmental agencies and representatives; and international organisations. In this context, ICRAF's high profile is remarkable. In part it is due to a widespread recognition of problems of sustainability and agricultural productivity, particularly in Africa. But in good measure it is due to sustained effort on the part of the Council's management.

ICRAF maintains excellent relations with institutions of the Government of Kenya, particularly with the Kenya Agricultural Research Institute (KARI), the Kenya Forestry Research Institute (KEFRI) and the National Council for Science and Technology. There is a widespread and informed appreciation of the objectives and efforts of ICRAF, of the importance of agroforestry, especially in Kenya and Africa, for agricultural production and conservation. The authorities of the Kenyan institutions are fully aware of the limitations of ICRAF, the difficulties encountered in the development of a modus operandi and limitations of resources. KARI and ICRAF are currently in the final stages of negotiation of a Memorandum of Understanding.

ICRAF has developed similar excellent relations with important international organisations such as UNEP, and with ICIPE and ILRAD, and many others.

5.1.5.3. External Environment of ICRAF - Africa and Others

ICRAF has identified itself with sustainability and Africa. For the most part, the relations with African National Research organizations visited by members of the External Review Panel are excellent and it is presumed that the reports of similar relations with all of the NARs with which ICRAF has collaborative programmes are correct.

The Chair of the External Review Panel, in correspondence with authorities of the International Agricultural Research Centres, expressed interest in their comments on ICRAF's collaboration. Responses indicate a need to clarify ICRAF's role in relation to the IARCs, especially IITA and ICRISAT (Sahelian Centre). This is treated in Chapter 6.

Recommendation

In the interests of symbolizing the centrality and importance of the national programmes as well as in facilitating local collaboration, ICRAF should ensure that field staff acquire proficiency in one local language and be instructed in local etiquette.

5.1.5.4. External Environment of ICRAF - Donors

ICRAF's relations with its donors have been discussed in detail in Chapter 4. The Panel wishes to reiterate here its concern about the complex and difficult relations between donors' headquarters and field staffs. We stress the need to rationalize these relations as detailed in Chapter 4.

5.1.5.5. Summary of ICRAF's External Relations

For a small institution, ICRAF has done very well in projecting itself and relating with its immediate environment. Lack of resources has precluded adventures outside of Africa and stifled somewhat the imperial pretensions of ICRAF's mandate. Perhaps for this reason, prior to 1986 ICRAF has not concerned itself very much with achieving good working understandings with those IARCs more concerned with systems work as it might relate to agroforestry.

While the interface between donors and ICRAF is complex and confusing, it has been very positive, both in terms of provision of resources and in pressures for correcting internal inadequacies. Relations with donors are mostly excellent.

5.2. Financial Management

The terms of reference suggested by the Donor Support Group focused on the effectiveness of all aspects of financial management with emphasis on linkages to program management, funding mechanisms and utilisation and the impact on core funding activities imposed by the rapid expansion of restricted or special project activities. The Panel was also concerned with how ICRAF management responded to recommendations made by their external auditors and other entities with respect to financial management. The existence of adequate internal controls and whether management kept the ICRAF Board of Trustees adequately informed as to substantive matters was considered as relevant to our review.

5.2.1. Special Concerns

There are significant problems in accounting, reporting, adequacy of cash resources and working capital, and budgeting. The Panel has attempted to address such problems by the presentation of salient financial information in a manner that illustrates the problem. Where the Panel considered it appropriate it have recommended actions which ICRAF management may wish to review with the Audit Committee of the Board.

5.2.2. Background

The rapid growth of ICRAF, in terms of staffing, restricted projects and funding, has unfortunately not been accompanied by a corresponding strengthening in most, if not all, aspects of financial management. The staff of Finance and Administration Division (FINAD), responsible for financial management, has remained relatively static since late 1985, when the present Director was employed. At the time of the Review there were no professional accountants at the supervisory level other than the Director of FINAD.

The growth in restricted projects, as shown in Tables 1 and 2, resulted in project expenditures increasing from \$677,000 in 1985 to \$2,782,000 in 1988, estimated to reach \$5,213,000 in 1989. The pipeline of special projects, as shown in Table 2, indicates an unexpended balance of \$11,422,000 in restricted project grants, as of May, 1989. During this same period, core funding increased by approximately one hundred and fifty percent.

The accounting, budgeting and financial management systems in place prior to 1988 did not provide mechanisms for accurately segregating charges between core and special projects. This was confirmed with the external auditors who served the ICRAF account from 1985 through 1988. Their opinion is that existing systems and procedures are inadequate and accounting staff insufficient to meet the demands imposed by the current levels of transactions and the complexities brought on by the necessity to accurately account for and segregate costs between project and core activities. Although the Panel has observed that ICRAF management has initiated considerable systems improvements recently, reporting of project cost both internally and to donors has not been up to the desired standards.

5.2.3. Staffing

In reviewing the financial management structure at ICRAF, the Panel found a complete absence of professional accountants, which are vital to bridge the gap between the newly recruited Head of Finance, an internationally recruited professional, and the supporting staff of accounting clerks and junior accountants. The Director of FINAD has recommended that three middle management positions be established : Budget Officer, Management Accountant, and Project Auditor. Of these three identified needs, only the Management Accountant position is currently scheduled to be filled in 1989.

One of the weaknesses the Panel noted in discussions with management and scientific staff was the inability of FINAD to provide project managers with the financial data they require to control project expenditures effectively. The sharply increased number of projects, as shown in Table 2, with varying reporting requirements, has compounded the necessity to provide reports which are meaningful to ICRAF project managers and which provide accurate and timely data to donors. The Panel considers the filling of the Project Auditor position to be of vital importance.

TABLE 1

SOURCES & APPLICATION OF FUNDS(US\$'000s)

	NOTES	1985	1986	1987	1988	1989
	-----	-----	-----	-----	-----	Budget
WORKING CAPITAL B/F		117	569	1,135	263	164
CORE UNRESTRICTED						

Sources						

Grants Recoveries	(a)	1,051	1,858	2,244	2,477	2,931
Restricted Projects						
G&A Expense			61	86	49	
10th Anniversary				90		
Other		136	99	118	127	245
TOTAL		1,187	2,018	2,538	2,653	3,176

Applications:						

Core Expenditure	(a)	1,780	1,637	1,967	2,839	2,919
10th Anniversary				226		
Purchase of Fixed Assets		55	195	422	367	182
Other						
TOTAL		1,835	1,832	2,615	3,206	3,101

Surplus/Deficit	(b)	(648)	186	(77)	(553)	76
Cumulative Surplus/Deficit		(675)	(489)	(566)	(1,119)	(1,043)

BUILDING-ICRAF HOUSE						

Grants		780	720	0	0	0
Less: Cost		234	429	1,268	0	0
Fund Balance		546	291	(1,268)	0	0
Cumulative Fund Balance		546	837	(431)	(431)	(431)

RESTRICTED (SPECIAL) PROJECTS						
Funds on Hand B/F		145	699	787	1,001	1,493
Grant Funds Received		1,231	1,203	2,360	3,274	4,511
Funds Available		1,376	1,902	3,147	4,275	6,004
TOTAL PROJECT EXPENDITURES		677	1,115	2,146	2,782	5,213
Funds on Hand at Year-end	(c)	699	787	1,001	1,493	791
		====	====	====	====	====

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TABLE 1

SOURCES & APPLICATION OF FUNDS(US\$'000s)(Continued)

	NOTES	1985	1986	1987	1988	1989
	-----	----	----	----	----	Budget
ADJUSTMENTS						
Increase in Long-Term Loan				258		
Decrease in Long-Term Loan				----	(38)	(40)
					----	----
WORKING CAPITAL AT YEAR-END		569	1,135	263	164	(503)
		====	====	====	====	====
Cumulative provision for Staff Benefits	(d)	368	393	566	737	827
		----	----	----	----	----

NOTES TO STATEMENT ON SOURCES AND APPLICATION OF FUNDS

- =====
- (a) Recoveries against projects for salaries and services charged to core accounts and properly allocable to restricted projects have been offset against appropriate core expense categories.
 - (b) Includes carry-over of \$27461 Cumulative Deficit from 1984 and prior years operations.
 - (c) ICRAF has included restricted project advances (net of expenditures) as part of accumulated funds, in financial records and reports.
 - (d) Treated as a current liability in Financial Records and Reports.

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TABLE 2

SPECIAL (SIGNIFICANT) PROJECTS - FINANCIAL SUMMARY (US\$ '000s)

PROJECT DETAILS				FUNDS RECEIVED		FUNDS EXPENDED		PROJECT PIPELINE		FUND BALANCE		
CODE	TITLE	DONOR	GRANT AMOUNT	PERIOD COVERED	TO DEC'88	TO MAY'89	TO DEC'88	TO MAY'89	AT DEC'88	AT MAY'89	AT DEC'88	AT MAY'89
CAA	SA AFRENA	CIDA	5900	1987-1992	709	973	623	865	5277	5035	86	108
CBA	AFRENA	USAID	4000	1986-1990	1702	1931	1532	1751	2468	2249	170	180
CKD	AF DEV IN KENYA	SIDA	390	1988-1989	167	167	52	96	338	294	115	71
CPW	FELLOWSHIPS, ETC	F.F.	80	1989-1990		40				80		40
CSA	ZAMBIA	SAREC	774	1986-1991	406	406	212	261	562	513	194	145
CSC	S.AFRICA	CIDA	341	1986-1987	241	341	334	334	7	7	7	7
CSM	SEMI ARID LOWLANDS	IFAD	1500	1989-1991		507		54		1446		453
CSU	AFNETA	USAID	458	1988-1990	80	80			458	458	80	80
CTB	BANGLADESH	F.F.	165	1989-1990						165		
CTR	INDIA/OLD	F.F.	218	1986-1989	218	218	148	171	70	47	70	47
CVS	ASARE	SIDA	95	1989-1990	48	48		14	95	81	48	34
RDA	ICRAF, CARE	AIDAB	70	1989						70		
RDI	INFO MAN.	F.F.	109	1987-1988	109	109	86	87	23	22	23	22
RDM	TREE CROP MIX	BMZ	419	1985-1988	419	419	383	415	36	4	36	4
RDM	REVIEW & PUBL.	BMZ	116	1989	116	116			116	116	116	116
RFE	AF SHIFTING CULT.	SIDA	168	1988-1989	168	168	78	89	90	79	90	79
RPT	MPT GERMLASM	GTZ	715	1988-1990	213	213	115	194	600	521	98	19
RRG	FIELD STATION(88-89)	SIDA	557	1986-1989	557	557	506	558	51	-1	51	-1
RRM	FIELD STATION(89-90)	SIDA	236	1989-1990						236		
			16311		5253	6293	4069	4889	10191	11422	1184	1404

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TABLE 3

CORE FUNDING BUDGET ANALYSIS(\$'000s)

	1985(Consolidated)			1986			1987			1988			1989(Jan-May)		
	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
INCOME															
Core Grants		1,051		1,695	1,858	163	1,982	2,244	262	2,569	2,477	(92)	977	864	(113)
Recoveries															
-Staff Time				205	406	201	240	700	460	440	662	222	268	151	(117)
-Overheads					37			338	338	402	267	(135)	150	44	(106)
Other income		135		250	161	(89)	150	204	54		176	176	82	14	(68)
10th Anniversary							140	90	(50)						
	0	1,186	0	2,150	2,462	275	2,512	3,576	1,064	3,411	3,582	171	1,477	1,073	(404)
EXPENDITURE															
Salaries	0		0	914	1,443	(529)	1,450	2,053	(603)	2,582	2,596	(14)	1,033	1,175	(142)
Supplies	0		0	92	151	(59)	120	132	(12)	278	260	18	81	63	18
Services	0		0	329	388	(59)	400	713	(313)	243	710	(467)	230	194	36
Travel	0		0	100	97	3	150	107	43	112	202	(90)	55	58	(3)
Capital	0		0	109	196	(87)	140	422	(282)	311	367	(56)	61	175	(114)
10th Anniversary							272	226	46						
	0	1,900	0	1,544	2,275	(731)	2,532	3,653	(1,121)	3,526	4,135	(609)	1,460	1,665	(205)
SURPLUS/(DEFICIT)	0	(714)	0	606	187	(456)	(20)	(77)	(57)	(115)	(553)	(438)	17	(592)	(609)

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TABLE 4

CONSOLIDATED CASH FLOW ANALYSIS(\$'000s)

1988 ACTUAL

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Balance at Banks b/f	532	188	437	486	350	621	130	122	(256)	44	(235)	48
Total Core Receipts	1	11	474	323	713	26	19	26	729	108	24	308
Restricted Project Receipts	115	706	183	111	50	107	485	48	31	379	820	291
Consolidated Cash Expenses	(460)	(468)	(608)	(570)	(491)	(624)	(512)	(452)	(460)	(766)	(561)	(567)
Net Flow for Month	(344)	249	50	(137)	271	(491)	(8)	(378)	300	(279)	283	32
Balance at Banks c/f	188	437	486	350	621	130	122	(256)	44	(235)	48	80

1989 ACTUAL & FORECAST

	ACTUALS							PROJECTED				
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Balance at Banks b/f	80	(261)	(248)	107	(393)	(80)	50	692	1,114	1,391	1,103	1,224
Total Core Receipts	37	549	277	130	77	857	1,126	230	10	10	10	10
Restricted Project Receipts	262	0	611	0	791	45	110	734	909	250	658	141
Consolidated Cash Expenses	(640)	(536)	(534)	(630)	(555)	(772)	(594)	(542)	(642)	(548)	(548)	(699)
Net Flow for Month	(341)	13	354	(500)	313	130	642	422	277	(288)	120	(548)
Balance at Banks c/f	(261)	(248)	107	(393)	(80)	50	692	1,114	1,391	1,103	1,224	676

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ICRAF management has now modified the 1989 core budget with the intention of achieving a balanced budget for 1989. The financial discipline to accomplish this had not been demonstrated in previous years. It will also be necessary to materially improve management and reporting of all core financial activities if the goal of a balanced budget is to be achieved. The Panel strongly endorses the need for a professional budget manager to provide a constant review of budget performance throughout the organization. Table 3 provides a comparison of budget line items for the years 1985 through May of 1989. The variances are so significant that one is led to conclude that ICRAF management was not pursuing the goal of a balanced budget and that a strong budget discipline has not been imposed on the organization. All ICRAF staff must be made to recognize that strict adherence to budgets is a way of life in non-profit organizations. A Budget Officer, who is charged with the express responsibility for monitoring budget performance of core and special activities, should help in instilling the financial discipline that is required. It is necessary to monitor expenditures before the fact, in addition to reporting variances after the fact, if effective budgeting is to be achieved.

The Panel recognizes and appreciates the concerns of ICRAF management in delaying the staffing of these three management positions in FINAD, given the necessity to achieve a balanced budget. However, in the Panel's judgment the staffing of these positions is vital to ICRAF, if effective financial management is to be achieved. The Panel considers it essential for ICRAF to strengthen the accounting and budgeting functions at the earliest practicable date. The Panel suggests that ICRAF management develop a comprehensive plan of action for improving the performance of financial management activities, which may then be presented to the ICRAF Board of Trustees for review. The Panel considers that the principal area of weakness is in the middle management level of professional accounting and budgeting staff. Both the previous and current external auditors were of the opinion that such additional positions could be filled locally since there is a wealth of professional accounting and budgeting talent in Kenya.

Recommendation

The Panel recommends the expeditious staffing of three management positions, nationally recruited: budget officer, management accountant and project auditor.

5.2.4. Accumulated Deficiency in Core Funding, as of December 31, 1988

The audited financial statements of the Council indicated an accumulated deficit of over a million U.S. Dollars, as of the end of December, 1988. The Panel has prepared a schedule of "Sources & Application of Funds", Table 1, which summarizes unrestricted core funding and expenditures over a five year period. For 1989, the Panel relied upon a combination of actual revenues and expenditures for the period through the month of May and accepted the budget estimates of management for the remainder of the period. ICRAF suffered

substantial core deficits in 1985 and 1988.

It has been most difficult for ICRAF to budget core expenditures accurately whereas contributions from core donors have been essentially in accordance with budget projections. One complicating factor has been forecasting recoveries of core expenditures from restricted project activities. In financial records, such recoveries are considered an adjustment to core expenditures. However, the accounting systems and procedures employed throughout the period have not been adequate to provide the basis for accurately tracking potential recoveries which are attributable to salaries and other expenditures initially charged to core expense.

The Panel considered the deficiency in core funding to be one of the most pressing problems facing ICRAF. A sizeable portion of this deficiency is attributable to the accruing of costs of provisions for staff benefits that inure to employees in accordance with ICRAF's employment and benefit policies. As of the end of 1988, provision had been made for \$737,000 to cover ICRAF's future obligations towards the repatriation expenses and accrued benefits for its staff. The total accrual included provision for charges made against restricted projects. However, the preponderant portion of the accrual is for core staff. ICRAF has treated this obligation as a current liability in its records and reports. This accounting treatment has had the effect of reducing working capital to very unsatisfactory levels. As of the end of 1989, working capital is budgeted to be deficient by almost one-half million dollars, meaning that current liabilities will exceed current assets by this amount.

Recommendation

The Panel recommends as a matter of urgency, that the accrual of \$737,000, attributable to provisions for staff benefits, be reversed in its entirety, and that ICRAF should establish a plan for eradicating this deficiency in Core Funding, which should be discussed with the ICRAF Board and core donors. Provision for recovery of a portion of the accumulated deficit through amortization of the shortfall over a prescribed period might find acceptance.

The Panel could not determine what activities resulted in the shortfall, which, as we have previously observed, accrued primarily in 1985 and 1988. ICRAF management staff were divided in their opinions as to the causes of the shortfall since core grants revenues were substantially on target. The Panel judged that overspending of the core budget, through failure to track expenditures adequately and otherwise control budgeted expenditures as part of the budget process, was the principal cause. It is also quite possible that to some degree the shortfall was attributable to failure on the part of ICRAF's financial accounting system to accurately track expenditures that should have been identified and charged to restricted projects. ICRAF until recently has not had an accounting system that allowed for accurate distribution of charges between core and restricted projects. The problem is exacerbated by the fact that ICRAF core scientists frequently perform services directly applicable to restricted projects. An improved system is now employed whereby ICRAF staff who serve in a dual capacity, i.e., that they may work on core and restricted projects, prepare time distribution sheets which,

if carefully monitored, should improve the accuracy of charges to restricted projects for such services.

Recommendation

The Panel strongly recommends that ICRAF strengthen its financial accounting staff, systems and procedures to insure that all charges which benefit restricted projects are so charged through the normal workings of the accounting system.

5.2.5. Cash Flow

Table 4 indicates the total cash position for 1988, the first half of 1989, and projections for the balance of the year. Generally speaking, the Council should have sufficient cash resources on hand to cover normal cash expenditure requirements for a period of approximately two months. We would estimate the normal bank balances should consequently approximate \$1 million at any given point in time. It is not uncommon for core contributions from donors to arrive at mid-year or even late in the year. The cash balance of ICRAF was totally unsatisfactory for all of 1988 with the possible exception of the month of May, which benefited from the receipt of major core contributions.

For 1988, the average cash balance on hand as of the beginning of each month was less than \$210,000. The payroll and directly related payroll costs are currently averaging in excess of \$400,000 per month. Consequently the average amount in the bank was insufficient to meet this very pressing area of current expense. ICRAF has established an informal overdraft authority of \$500,000 with their principal bankers and this enabled the Council to operate with a cash deficiency for 2 months in 1988 and for the months of January, February, April and May in 1989. In April, the overdraft amounted to \$393,000, which is alarmingly close to the overdraft limit.

Recommendation

The Panel recommends that formalising the overdraft authority and exploring other alternatives with donors to avoid the risk of missing a payrolls, or similar calamitous situations.

In Table 1, the projections for both core and restricted project activities made by the Council for operations over the remainder of 1989 would go far to remedy this totally unsatisfactory cash situation. The Panel had no way to evaluate these projections, which are largely based on a substantial increase in restricted project receipts over the last portion of the year and strict adherence to expenditure budgets. Consolidated cash expenditures between core and restricted projects aggregated approximately \$600,000 monthly for the first six months in 1989 and are forecast to be approximately the same for the remainder of 1989.

The Panel believes that management is making a concerted effort to move more aggressively to control expenditures in accordance with fund availabilities. In

the short run, this effort is complicated by the fact that approximately seventy percent of total projected core expenditures, prior to recoveries from restricted projects, are for payroll and payroll benefits which do not lend themselves to much correction. Restricted project receipts are controllable to the extent that prompt submission of vouchers or claims for reimbursement to project donors and aggressive follow-up can improve inflows of project funds. However, this situation is further complicated by the fact that the Council has received project advances which, as of the end of 1988, approximated \$1,493,142, and cash derived from these project advances has been used to support current core expenditure shortfalls throughout 1988 and prior years.

The Council has a pipeline of \$11,422,000 as shown in Table 2, which represents the total of Restricted Project Grants less actual project expenditures of \$4,889,000. If the Council remains successful in negotiating additional restricted projects and is further successful in obtaining sizeable cash advances against such projects during the remainder of 1989, the cash position would be improved.

5.2.6. Working Capital

Table 1 provides an analysis of ICRAF working capital for the years 1985 through 1988 and a projection of what the working capital will be at the end of 1989, based on the current budget projections for core and special project income and planned expenditures for 1989. The working capital shown in Table 1 does not reflect the impact of suggested changes in the presentation of financial data in accounting records and reports as mentioned elsewhere in this report. Treatment of Funds on Hand at year-end, appropriate to Restricted Projects, of \$1,493,142, now reflected as a capital fund, actually represent a current liability and proper reporting of this unearned project revenue would result in a working capital deficit for each year except 1986.

Should ICRAF management elect to reverse the accruals for repatriation expenses, the working capital would be sharply improved. In any event, working capital is not adequate to support the needs of ICRAF. Donors have not made provisions for providing working capital and ICRAF has not presented working capital as a budget line item in its core budget in order to provide funds for current operations. The Consolidated Cash Flow Analysis, Table 4, clearly shows that core receipts are generally delayed until May of the year, leaving ICRAF with very little working capital to finance activities for the first part of the year. Utilization of donor or advance funding on restricted projects has gone far to ameliorate the poor working capital position in financial statements.

Recommendation

The Panel recommends strongly that ICRAF review its working capital situation with its Board and Donor Support Group, and negotiate the provision for one month's working capital, about \$600,000, be included as a proper item in the core budget for 1990.

5.2.7. Buildings - ICRAF House

In 1985 and 1986, ICRAF obtained capital grants for construction of the facility now referred to as ICRAF House. These core capital donations aggregated \$1.5 million (refer to Table 1). The cost of the facility which was constructed during the period 1985 through 1987 aggregated just under \$2 million, resulting in a shortfall in funding for capital projects of \$431,000. (The cost of an undetermined amount of furniture and fixtures is included in the total cost of ICRAF House. This cost should have been initially charged to the core operating expense budget.) This amount is carried in financial records and reports as a deficiency in what is referred to as a Headquarters Fund. The Panel considers it absolutely essential to eliminate this deficiency, since the building is complete, and all funds pledged have been received. The Panel discussed this matter with ICRAF management and both the current external public accounting firm and the previous firm which had been serving the Council at the time the facility was constructed. The Panel did not pursue the reasons as to why the facility cost exceeded the fund availabilities, and did not verify whether the shortfall was attributable to faulty budgeting procedures to whether the original estimated cost exceeded availabilities.

Recommendation

The Panel recommends that ICRAF management pursue resolution of the anomalous Headquarters Building deficit with the ICRAF Board and core donors with a view to eliminating the capital deficiency.

Several alternatives for accomplishing this are suggested:

1. Transfer the \$430,600 deficiency from the Headquarters Fund to the Core Fund. This would have the effect of increasing the already disturbing deficiency in core capital.
2. Recover the deficit through amortization of the balance over a 10 year period by direct charges to core operating expense. This would affect core operating expenses by approximately \$43,000 per year. The Panel suggests that a portion of this amortization be included in general and administrative expenses applied to restricted projects that benefit from the facility. This treatment would be in recognition of the fact that the charge does not in any way represent depreciation of a funded capital structure, but is more in the nature of rental of a facility or portion thereof.
3. A very desirable but unlikely alternative is to obtain donor financing for the shortfall in the cost of constructing ICRAF House.
4. With the concurrence of core donors, the shortfall could be included in the operating expense budget for 1990 and consequently funded totally by core donors in 1990.

Recommendation

The Panel recommends amortization of the Headquarters Building deficit over 10 years as the least objectionable method of resolving an unfortunate situation.

5.2.8. Problems in Account Designations And Presentation of Financial Data in Accounting Reports

The Panel was concerned with the manner in which two accounts are handled in financial records and reports. The repatriation fund or provision for staff benefits of approximately \$737,000 as of December 31, 1988, is accounted for as a current liability in the balance sheet presentation. This treatment is based on the assumption that the full amount would have to be paid within the ensuing year which is a most unlikely scenario. The Panel's recommendation would be for this account to be analyzed and only that portion which is likely to be paid in 1989, under a going concern concept, be treated as a current liability, with the balance being considered as a long term liability. With respect to this account, preference would be that the entire account be eliminated and the deficit in core capital be reduced accordingly. This was discussed with ICRAF's Auditors, who did not interpose any objection to an adjusting entry which would relieve core capital of the burden created by this accrual. On the other hand, it is both desirable and necessary to accrue such charges with respect to restricted projects in order to match expenditures accurately by period and properly inform donors of the status of current funding availabilities on projects.

ICRAF, in its Annual Accounts Statement, has included in the capital account entitled Restricted Project Fund an amount of \$1,493,142, as of the end of 1988. This fund represents receipts of restricted project advances or tranches in excess of restricted project expenditures through the end of the period. The Panel's judgment such amounts do not constitute capital funding, but more accurately are a current liability and should be accounted for as unearned project income in a deferred revenue account. Adjustment of this account would have a major impact on ICRAF's financial reports. The Capital section of the balance sheet would be reduced by almost \$1.5 million and the current liability section, which also affects working capital, would be increased by the \$1.5 million.

The Panel observes that ICRAF has in effect funded the shortfall in core funding by utilizing the restricted project advances. This is demonstrated by the fact that such restricted project advances, which are in cash, are not to be found in the cash resources of ICRAF. In this same regard the repatriation fund previously discussed is not represented by a specific cash account and consequently to reverse the accrual for repatriation expense would not have any impact on the cash availabilities of ICRAF in the short run.

ICRAF treats recoveries, composed of staff salaries and services appropriate to restricted projects and general and administrative expenses, as reductions in core expenditures and the Panel fully concurs with this treatment. To show such recoveries as revenues would in effect result in the same expenditures being accounted for both as core and special project expenditures with an offset showing the amount recovered against special projects as "other income".

Recommendation

The Panel recommends that the restricted project funds on hand as of the end of 1988, amounting to \$1,493,142, be reflected as a current liability in financial records and reports.

5.2.9. Budget Function at ICRAF

The Panel was concerned with the budget function at ICRAF, in view of the deficits in core and huge expansion in restricted projects since 1985. The Panel reviewed core budgets from 1985 through 1988 and compared budgeted amounts to actual experienced costs (see Table 3). The variances were of such magnitude so as to render the budget function a highly ineffective management tool at best and perhaps one of the principal reasons that the deficit in core funding was not detected.

ICRAF's external auditors raised the issues of the inadequacies of the budgetary system in their 1988 Management Letter, which they referred to as an Internal Control Report. The recommendation made was that "The system should be expanded to enable accurate and realistic budgets to be prepared for each project and cost centre." The management comment to this recommendation was, "The preparation of budgets is the initial responsibility of user divisions. We are all now developing a far more sophisticated system." In fact, ICRAF has now developed a very good system for reporting on budgets, for both project and core activities.

The principal concern the Panel had in reviewing the newly implemented system was how the data would be used and the absence of control procedures. The system does not appear to provide control mechanisms to review expenditures before they are incurred and to determine whether they are within planned budgets. The Panel believes that the new reporting system, if rigorously monitored by competent budget staff, both at FINAD and the departmental or project level, can effectively serve to control costs, but only if project managers and departmental managers elect to use such reports for that purpose. There is no empirical evidence to indicate that budgets have in the past proven to be effective mechanisms for controlling costs, particularly budgets with respect to core activities.

The Panel noted that ICRAF management has now completely reworked the budget for 1989 core activities, with a view to balancing costs with anticipated donor grants and recoveries against restricted projects. This the Panel believes, is a positive step in insuring that ICRAF will effectively manage its limited core funding. However, the Panel further noted that the revised budget for 1989 does not provide for substantial contingencies, in that all available funds have been completely allocated to known or planned core activities. In the future, the Panel recommends that a portion of budgeted fund availabilities be retained in a contingency account and only utilized with the express approval of the Director

General. The Panel reviewed budget reports currently being prepared by FINAD and believes that the system of reporting will be most adequate when it becomes fully operational.

In conclusion, there is no evidence that budgeting was a meaningful function at ICRAF prior to 1989 and that staff recruitment and other core activities were not subjected to a careful budgetary scrutiny prior to incurrence of obligations for such expenditures.

Recommendation

The Panel recommends strongly that ICRAF place the highest priority on budgetary controls by instituting and rigorously adhering to standard accepted budgetary procedures.

5.2.10. Utilization and Recommendations of External Auditors

ICRAF retained the services of Price Waterhouse as their external auditors for the years 1985 through 1988. Price Waterhouse's services were concluded after preparation of the 1988 audited financial statements and preparation of their Internal Control Report. For 1989, the ICRAF Board made the decision to transfer the responsibility for external audit to the firm of Coopers and Lybrand.

For the most part recommendations contained in these reports appear to have been implemented or accepted in principal by ICRAF. In many instances however, the staffing of FINAD, particularly with respect to professional accounting middle managers, provided very little opportunity to segregate functions or delegate responsibility to professional accounting managers in the manner suggested by Price Waterhouse. The 1988 Internal Control Report did highlight problems in budgeting, which may have triggered the extensive changes now being implemented by ICRAF.

5.3. Programme of Activities

Comments on ICRAF's Mode of Operation

The ICRAF Management developed a Strategy for research in 1981. ICRAF has been consistent and dedicated in the implementation of what came to be the operational mode of the Council. The Panel feels that the Strategy has served ICRAF well, that the logic of the "cycle of development" is such that it will continue to serve as the basis for ICRAF's operations in the future, albeit with incorporation of modifications as agroforestry develops and as the collaborative national programs are more able to take on responsibilities for research. The 1981 Strategy Paper is the philosophical basis for ICRAF's RDD research and COLLPRO. As such, the Panel is appreciative of its coherence and continued applicability.

The Panel commends ICRAF for successfully moving towards its original goal to help create a global awareness of agroforestry and to establish a sound, well defined structure within which approaches to agroforestry research will develop. ICRAF has made significant progress in developing research methodology, using its comprehensive approach to agroforestry research, which covers both bio-physical and socio-economic aspects. The tools and methodologies developed so far help to provide an understanding of and ability to identify the role of agroforestry to overcome land-use constraints and to enable experimental verification and evaluation of agroforestry technologies in a scientifically acceptable manner. The Panel fully endorses the planned shift to "on farm" research by developing prototype technologies and evaluating these on farmers' fields.

Although it is too early to make any assessment of impact, the Panel is satisfied that COLLPRO has developed a mechanism for multidisciplinary research and institution building in agroforestry in the national settings. Through an appropriate organizational structure and programme design, COLLPRO is addressing the challenge of a lack of institutional infrastructure within the national systems, paucity of trained manpower in agroforestry, lack of tested methodologies for conducting agroforestry research and lack of sufficient technical evidence on the potentials of agroforestry in improving the performance of farming systems. For this COLLPRO has created a framework which establishes agroforestry research in a number of phases and has recognized analogous ecozones across countries and the benefits of ecological collaboration.

The major goal and final objective of all of ICRAF's efforts are to contribute to the development of viable sustainable land use systems that will improve the lot of the world's small farmers.

5.3.1. Status of Implementation of the Recommendations of the 1984 External Review Panel

1984 Recommendation 4

The relevance and applicability of approaches developed to date need to be tested for effectiveness in meeting the needs of subsistence farmers in developing countries, with more field applications. Page 38: The research programme "might operate more closely under field production conditions ("on-farm") in order to discover the questions and requests to which national scientists have to respond".... "ICRAF should devise appropriate tools required by those scientists to answer such questions."

Status

This is being done through a component programme, "On-Farm Agroforestry Research and Extension". Details and comments follow.

1984 Recommendations 6, 10, 11

ICRAF should broaden the interpretation of its mandate to permit moving into "hands-on" technology generation research in a collaborative model through national and regional programmes. In response, the Council expanded its 1981 strategy of an "analytical systems approach to agroforestry research for development of improved land use", to include collaboration with national and other institutions in developing agroforestry technologies. The Council restated its priority for 1986-90 as:

Status

ICRAF has initiated collaborative field activities (COLLPRO) in four regional networks with a focus on Africa (AFRENAs). Detailed comments and recommendations follow.

1984 Recommendation 10

Information dissemination and technology generation should receive more emphasis.

Status

Relevant action has been taken. Detailed comments follow.

1984 Recommendation 13

Technology options for future study should include higher inputs in addition to purely subsistence practices.

Status

Use of fertilizer and irrigation have been included among options being tested in alley-cropping configurations by parts of the AFRENA networks and at Machakos Field Station. Detailed comments follow.

1984 Recommendation 14

ICRAF must have the ability and capacity to make projections of anticipated economic benefits of agroforestry technology options; MULBUD is a promising tool for this.

Status

ICRAF has capable economists on staff but, due to their project management and other responsibilities, ICRAF has no socio-economic research underway.

ICRAF has recognized the priority of this research and has developed plans for which funding is being sought. MULBUD has not been developed further since 1984 and is now obsolescent.

1984 Recommendation 17

A fee-for-services advisory function should continue, drawing from the entire professional staff of ICRAF, which will require some overstaffing in order to meet this function without undue drain on its capacity to carry forward with its basic core programme. Economics, publications, administration, and research management are subjects for which advisory demand can be expected to be high.

Status

Advisory functions continue within a framework of charge-back of costs to the Project requiring such services. Services to outside agencies are now minimal.

1984 Recommendation 18

The technical content and staff involvement at Machakos Field Station need to be more precisely defined.

Status

Appropriate action has been taken, and a formal procedure for further development is in place.

1984 Recommendation (Page 41)

"Expansion of COSPRO should be based on ICRAF's true capability for providing such support".

Status

Organization and application of ICRAF's backstopping capacity has failed to keep pace with the current level of expansion of COLLPRO (the successor of COSPRO); and it is likely that the further expansion already initiated will require redeploying and reinforcing ICRAF's scientific staff.

5.3.2. 1985-1989 Performance: Research Development

The 1984 Panel's recommendations Nos. 6, 10 and 11 recommended that ICRAF broaden the interpretation of its mandate to permit moving into "hands-on" technology generation research in a collaborative model through national and regional programmes. In response, the Council expanded its 1981 strategy of an

"analytical systems approach to agroforestry research for development of improved land use", to include collaboration with national and other institutions in developing agroforestry technologies. The Council restated its priorities for 1986-90 as :

1. "Development of the agroforestry discipline to maintain ICRAF's global lead position;
2. "Assistance in building national institutional capabilities; and
3. "Collaboration with national and other institutions in developing promising agroforestry technologies."

These objectives were transformed into a programme of work based on the following guidelines: an agro-ecological zone approach; concentration on a limited number of ecosystems in a few countries; collaboration with inter-institutional groups using a networking approach; integration of technology generation efforts with institution building efforts; and a continued emphasis on refinement of generally applicable research methods and databases with a gradual shift towards solving methodological problems arising from zonal/national collaborative programmes.

In order to cope with the changes of direction and priorities resulting from the implementation of the 1984 recommendations, ICRAF ordered an operational restructuring of its organization creating two major programme divisions, effective January, 1986: Research Development Division (RDD) and Collaborative Programme Division (COLLPRO).

The RDD is responsible for developing the body of agroforestry knowledge, discipline, and maintaining ICRAF's position on the cutting edge of the new science. The strategy includes collecting and collating information, developing concepts and devising the methods by which and the basis on which ICRAF and others will develop and disseminate the appropriate technologies that will assure the development of sustainable land-use. RDD has restructured its activities into three interlinked and mutually supportive programmes. It is also responsible for the Machakos Field Station.

Programme 1: The Role and Potential of Agroforestry and Multi-purpose Trees and Shrubs

The overall aim of this programme is the collection, cataloguing, synthesis and dissemination of information on the role and potential of agroforestry systems and multipurpose trees (MPTs) in land husbandry and rural development. Activities within this programme involve both qualitative and quantitative assessment of the biophysical and socio-economic potential of specific agroforestry practices.

Programme 2: Agroforestry Field Experimentation.

The objective of this programme is the provision of technical support for scientists in field experimental work in agroforestry, including design (efficiency including statistical validity and economy in the use of resources), observations (information to be obtained, instrumentation, sampling, methods of data recording), and analysis (statistical and other, and evaluation of results).

Operation of the Machakos Field Station falls under this programme. This station, with 40 hectares located some 70 km from Nairobi in a sub-humid to semi-arid eco-zone, has an average rainfall of 700 mm, distributed bimodally. It serves as a site to assist ICRAF to demonstrate agroforestry technologies and experimental approaches, including multipurpose trees and their management, to develop methodologies for agroforestry research and also offers training facilities. The station attracts a large number of visitors and training groups.

Programme 3: On-Farm Agroforestry Research and Extension

This programme initiated recently has evolved from a recognition that the process of agroforestry technology development involves dynamic interplay between researchers, extensionists and farmers. It focuses agroforestry research directly on development and emphasizes four major activities: 1) technology design and testing; 2) on-farm MPT experimentation and evaluation; 3) project monitoring and evaluation; and 4) agroforestry extension and development. Land tenure problems and legislative issues affecting agroforestry are supposed to be dealt with under this programme, although as yet there is no field research programme on these topics.

COLLPRO is responsible for "assisting in building national capabilities to design and implement relevant agroforestry research programmes" and for "collaboration with national institutions in identifying and developing promising agroforestry technologies". To realize these objectives, COLLPRO works with teams of national scientists and their institutions. For planning and implementing national and regional projects, it has developed a logical sequence of activities which integrates research and training. For backstopping support and services at ICRAF headquarters, COLLPRO is organized into two units. Human Resource and Institutional Development (HRID) is responsible for planning, implementing, monitoring and evaluating the training and education activities. Technical Support and Analysis (TSA) is responsible for coordinating, monitoring, assessing and analysing systems studies, on-station and on-farm experimentation and extension-related activities. TSA channels inputs from RDD and INFOCOMM into the planning and implementation of COLLPRO research and training programmes, and provides feedback to them from results across regional networks. COLLPRO activities are located in Sub-Saharan Africa, where there are four regional and one national ongoing programmes under AFRENA. This programme is aimed at design and implementation of agroforestry research for technology generation in four ecosystems (unimodal upland plateau of Southern Africa, bimodal highlands of East and Central Africa, the humid lowlands of West Africa, and the semi-arid lowlands of West Africa) currently involving five countries with extension to nine additional countries being initiated.

Comment

A pervasive question relevant to ICRAF's future operation and on which there is diverse opinion is, "How much research should ICRAF itself be undertaking directly?" In attempting an answer to this questions some of the relevant factors to be considered are :

- ICRAF's responsibility of maintaining its global lead position in agroforestry;
- The need for a thorough understanding of the role and potential of agroforestry systems, mechanisms that govern their functions and productivity ways and means of improving their performance and methods of evaluation;
- Since agroforestry is a new discipline, there are not many experienced agroforestry research scientists around the world and the knowledge base is only partial;
- The complex of issues to be addressed by agroforestry research and ICRAF's advantage and ability to provide a multidisciplinary focus to these issues;
- Limitations of the national research systems in personnel and material resources to undertake strategic research;
- Global or regional relevance of issues to be addressed by research;
- The fact that international institutions may be restricted to specific technologies or region,
- ICRAF's need for competent and efficient in-house backstopping of the collaborative programmes;
- The need for ICRAF's staff to remain at the cutting edge of the newly developing science of agroforestry.

ICRAF has deliberately pursued a multidisciplinary approach in its technical operations and has assembled a team of experts which has performed commendably in collecting and collating data and developing concepts and methods. The emphasis is shifting increasingly from conceptual to more field-based, on-station activities for experimental methodology particularly focused on the tree-crop interface. As a result deficiencies in the practice of this multidisciplinary are becoming evident both in ICRAF's field station programmes and in the collaborative programme under AFRENA. Greater inputs from an agronomist and a soil scientist are needed to make experimental methodology more precise and more relevant to the needs of the client groups.

In any agroforestry system, the farmers' primary interest is stable crop yields. An agronomist, preferably with experience in the component crop, should be associated in planning, implementing, and monitoring both strategic and applied research. Greater input is needed from a soil scientist with a specific expertise in

soil fertility. This would help in providing an appropriate focus in experimental research on improving efficiency of biomass utilization, the role of primary and secondary nutrients, the effects of agroforestry practices on soil physical properties, and biological nitrogen fixation by legumes. The Panel noted that ICRAF has plans to address these deficiencies. This needs to be done urgently. Problems of insect pests, diseases and weeds are other aspects of the tree-crop interface that need attention both in technology generation and adaptation. In addition, the AFRENA research teams should ensure multidisciplinary by the addition of social scientists

ICRAF's experiences have pointed to deficiencies in field experimental methodologies, particularly statistical procedures. To achieve the intended scientific rigour in agroforestry research and to ensure that agroforestry research develops as rapidly as the situation demands, the development of innovative, space-efficient and cost-effective designs for studying agroforestry systems must be a priority.

Experimental methods are well developed for sole crops and for forestry, but only in a few cases are these conventional and systematic designs suitable for agroforestry research. Considering the complexities introduced and the limitations imposed by tree, crop, soil and climatic variables, new methods and concepts need to be developed or existing ones suitably modified and adapted. The choice of treatments, suitable design that would take care of soil and climatic variables affecting agroforestry systems, field plot and sampling techniques, "what to measure" and "how to measure" to quantify growth are issues that need to be addressed. Treatments that would confound the effect of several variables need to be avoided. A particular instance is the use of maize and beans as intercrops within hedgerows of leucaena, which itself is a legume, and superimposing multiple fertilizer treatments. A second instance is the testing of short-lived shrub species and long-lived trees in a single MPT trial where the comparison is based on biomass production. The two groups of species have very different growth cycles. Another difficult issue is the integration of intangible benefits such as improvement in soil fertility, soil physical properties and erosion in control and assessment methodology.

Methodology development in agroforestry will remain a continuous process with the direct involvement of ICRAF scientists in experimenting with trees, crops and animals. The field stations at Machakos and Maseno facilitate this operation and also provide two ecosystems for testing prototype technologies and as well as for evaluation of MPT germplasm. To undertake strategic research, ICRAF needs a site where they can exercise full control over decisions and implementation. The station at Machakos needs to be further strengthened to cater to the needs of the expanding on-station programme and also to meet the requirements of ICRAF's diverse client groups. Some universities with graduate degree programmes in agroforestry are also considering ICRAF's field stations as sites for thesis research of their graduate students. There is a demand for short-term on-the-job training of scientists from several countries. ICRAF has requested the Kenyan Government for 40 ha of additional land at Machakos Station and hopefully this will become available.

Alley farming is a major component of ICRAF's research for technology generation and evaluation. The potential of this technology as a land use system for sustained crop production has been amply demonstrated in the low-land humid tropics. However, its feasibility and usefulness in semi-arid ecosystems is still not fully proven. The establishment of hedgerow and competition for moisture between the hedgerow and intercrop are critical issues on which authentic information is lacking. *Leucaena* seems to be a choice of convenience for this technology because information is readily available on this species. Results of some of the experiments at Machakos are significant in relation to choice of a species for hedgerows, particularly in applied research in AFRENAs and in the development of prototype technologies for on-farm testing. For instance, maize grown in proximity to *leucaena* as a hedge crop had a much greater reduction in yield than that grown next to *Acacia albida*. In another experiment, *Glyricidia sepium* had a more positive effect on maize yield than either *Leucaena leucocephala* or *Cassia siamea*. Moreover, concentration on a single species increases vulnerability to pests and diseases.

Multipurpose Tree species germplasm activities figure prominently in ICRAF's programme. Some 1400 entries covering almost 650 species are included in the database. The information available in the database, however, is mostly on phenology and is very sketchy on performance. There is no information on the range of variation, response to various management practices, response to climatic stress and compatibility with other plants. This is not the fault of ICRAF; the information simply does not exist. Major emphasis will have to be placed on developing rapid screening and evaluation technologies and on detailed performance evaluation of some of the more promising species. This will enhance the usefulness of the MPT database. In allocating efforts and resources to germplasm improvement through breeding, careful thought will have to be given to its comparative advantage over exploiting the existing genetic variability within a species and improving performance through better management. This is particularly important as tree breeding is a long term procedure.

Recommendation

The Panel recommends the provision of laboratories suitably equipped for essential soil and plant analysis.

The Panel recommends that, considering the needs of the developing science of agroforestry, in-house requirements of maintaining staff expertise and capabilities for effective technical backstopping of field programmes, and the external environment ICRAF, should make explicit its direct research involvement. In the Panel's view, whereas considerable parts of the strategic and applied research can be done by or in collaboration with other institutions, a significant amount will have to be undertaken by ICRAF itself on its directly managed stations.

The Panel recommends that the multidisciplinary teams at ICRAF headquarters, as well as in AFRENA field programmes, be further strengthened by the

inclusion of soil scientists with particular expertise in soil fertility, experienced crop production agronomists to sharpen the focus in research on soil fertility and aspects of tree-crop interface.

In the Panel's view, appropriate experimental designs for on-station and on-farm testing of agroforestry technologies and its various components are still not readily available. The Panel recommends that ICRAF pursue ways of making their available designs and software for conventional experimentation widely available, where applicable, and reinforce the programme for development of innovative and rigorous methodology for on-farm and for MPT research, utilizing existing staff. Factors involved include methods and guidelines for making treatment choices, including controls, field plots and sampling techniques; and data recording and analysis procedures.

The Panel recommends that ICRAF explore with ILRAD and ILCA the usefulness of joint surveys, for a simultaneous characterization of farming systems and disease epidemiology to identify possibilities of relationships between trees/herbage species, and animal diseases.

The Panel recommends that ICRAF negotiate with NARs for greater emphasis on the collection and preservation of more MPT species and provenances at collaborating national institutions; and for initial performance evaluation concentrating on a few promising but different species at each location. For some species, extensive provenance collections have already been done. Collections should now concentrate on other groups and species. This will enhance the usefulness of the MPT data base.

5.3.2.1. Actual and Potential Programme Impact and Usefulness

Overall impacts

The most striking impact of ICRAF's programme of work over the last five years has been the acceptance worldwide of agroforestry as a technically sound option for addressing the sustainability of land use systems and as a scientific discipline in its own right. This is evident from the proliferation of specific agroforestry components in national development plans, budgets, and research programmes; in donor priorities; in NGO programming and in the demand on ICRAF for information and training. Enhanced collaboration among national institutions for planning and implementing agroforestry research programmes has also emerged as a result of ICRAF activities. Universities around the world have instituted agroforestry workshops, courses, chairs and majors. Academic books, journal articles, and dissertations on agroforestry are appearing at a rapid rate. Panels and sections on agroforestry have become de rigueur in the meetings of many professional organizations. In 1989 alone there were three international conferences completely devoted to agroforestry. Agroforestry is featured in the popular press around the world. Agroforestry has arrived!

ICRAF's conceptual work clarifying thinking on agroforestry is frequently mentioned by scientific and development organisations alike as a useful

contribution.

ICRAF's methodological work has contributed to both research and development field techniques. ICRAF is to be complimented on its efforts to forge a multidisciplinary research approach. In particular, the development and use of the D&D methodology to attempt to link research to the needs of farmers, and the use of ethnobotanical surveys conducted by multidisciplinary teams are highly commendable and worthy of emulation by other institutions. D&D methodology has become a part of the rapid rural appraisal toolkit. It has been used in several countries (often with the participation of ICRAF) in combination with ICRAF databases and ex-ante analytical tools developed by ICRAF to collect and collate information on land-use systems, their problems and potentials, and to formulate national and regional research and development projects.

ICRAF scientists have assembled and developed source material and guidelines on the use of scientifically efficient methods for experimental verification of agroforestry technologies on-station. Several innovative designs for experimentation on tree/crop mixtures have been studied at ICRAF's field station at Machakos and are now being used by the scientists in AFRENA regional and national programmes. Experiments currently underway on the tree-crop interface are likely to yield urgently needed information both on experimental methodology for field research and on actual interface effects in terms of sharing environmental resources (soil, climate, water).

ICRAF's Machakos Field Station serves an important demonstration function for a wide range of scientists, policy makers, politicians, donors, development workers and trainees.

The Multipurpose Tree Species database and the Agroforestry Inventory compiled in collaboration with national, regional and international agencies are useful information sources. The MPT database, presently available only for consulting, was used in selecting tree species for some AFRENA projects. Availability of more quantitative information on individual MPT species and easier access, planned for June, 1990, will make these databases more useful in the future.

Finally, ICRAF has nurtured the study of agroforestry. It has trained researchers; acquired, produced and disseminated literature relevant to agroforestry; and, through its COLLPRO programme, initiated agroforestry research throughout east, southern and west Africa. Currently, ICRAF is taking a leading role in the development of curriculum and educational material for higher education in agroforestry. This is likely to have a very positive effect on the availability of professionally trained personnel for national research and development programmes in agroforestry.

Relevance to food security and other population target group concerns.

Presumably, this question was posed to the Panel to determine whether the following part of the mandate is being fulfilled: "to increase the social, economic,

and nutritional well-being of peoples of developing countries through the promotion of agroforestry systems to achieve better land use in developing countries without detriment to their environments...". To the extent that food security is a function of production, agroforestry has the potential to increase food security by increasing food production and providing a source of fuelwood without which many foods cannot be utilized. Similarly, since as traditionally practised, agroforestry has been characterized by diversity, it could contribute to the establishment of a more sustainable agriculture and the protection of genetic diversity.

ICRAF has been consistently clear about considering national scientists and scientific institutions as its immediate clientele with the farmer as the ultimate beneficiaries. But, as noted above, ICRAF has also been a pioneer in developing a methodology to link research to the needs of the farmer. Nonetheless, even given the very brief time the Panel was able to spend in the field, it found indications that under the current mode of ICRAF operations, the ultimate beneficiary, small farmers, are not yet adequately involved in the process of generating technologies. The Panel also notes that ICRAF has scope for improvement in contributing to the preservation of genetic diversity.

The following questions remained unanswered: Who will use these technologies? Will those most likely to suffer food insecurity, i.e., resource-poor households in general and female-headed households in particular, be able to adopt ICRAF technologies?

The Panel commends ICRAF for its exceptionally innovative efforts to forge multidisciplinary approaches as a result of which biological scientists have learned to ask social science questions in the process of framing their research. Nonetheless, the Panel's field experiences left residual concerns about the effectiveness of application of these methodologies in practice, although it is still premature to expect adoptable technologies to be available. The Panel's concerns are detailed as follows:

1) There needs to be more attention to social factors that affect adoptability in the design and implementation of field research.

a) A keystone of the ICRAF technology generating process is the D & D exercise which is intended to link research directly to the farmers' problems through the use of social science concepts and methodology. In practice, the D & Ds for the AFRENA projects have served a dual function, research design and training national scientists in D & D methodology. Further, with the partial exceptions of Mali and Burkina Faso, there were no local social scientists/local women members of these D&D teams. As a result, while they contain a great deal of valuable and interesting information, most AFRENA blueprints address social factors at a very general level and do not include specific information about agricultural problems as experienced by specific categories of farmers. Consequently, almost all ICRAF research (both in-house and collaborative) addresses generic disciplinary biological problems, e.g., soil fertility, rather than problems as experienced in specific recommendation domains. The danger that only a small category of farmers will be able to use the technology thus generated

is inherent in this approach.

b) Almost all ICRAF research (both in-house and collaborative) is on-station biological research. Limiting social science components of field research can likewise limit the adoptability of technology. For example, although existing tenurial institutions have been identified as potential and actual constraints to the adoption of agroforestry, no research has been initiated on this topic, despite the desire of the RDD social scientists to undertake such research and the assurances of local professionals that it would be both desirable and politically acceptable. Failure to identify, analyze and find policy solutions to tenurial constraints may result in some farmers being unable to adopt otherwise useful technologies.

Recommendation

The Panel recommends that the programme of social science field research be expanded and strengthened.

2) The significant differences between on-station and on-farm conditions are likely to limit the adoptability of technologies generated on-station.

a) Although traditional forms of agroforestry exhibit wide variation, including many species and land races of trees and crops, much AFRENA research focuses on a single technology, alley farming, using a narrow range of species (four or five generally exotic trees for which silvicultural information is available and one or two crops). This approach not only narrows the farmer's options, it could also adversely affect genetic diversity.

b) ICRAF has yet to consider the potential of using agroforestry to enhance the productivity of the existing natural habitat and thereby protecting it.

Methodological tools for on-farm research

In part the reluctance to undertake on-farm agroforestry research lies in the fact that it presents methodological difficulties. First, farmers, in particular women farmers, grow and utilize any number of trees and crops for which there is almost no silvicultural or agronomic information. Second, farmers, particularly resource-poor farmers who are in the greatest need of assistance, often farm awkward and scattered bits of land characterized by poor soils, inconvenient topography and other sources of variability. Third, on-farm research poses problems for which there is no readily available methodology--the effect of single trees on crops is one. ICRAF is aware of these issues and has plans to address them.

Recommendation:

The Panel commends ICRAF's awareness of the need for on-farm research, and recommends that ICRAF proceed with its plans. The Panel recommends that in order to facilitate the transition to increased levels of on-farm research, the programme for the development of on-farm research methodology be expanded to include more agricultural researchers, including a world-class tropical agro-ecologist, and be supported to the fullest extent possible.

3) The scientists best able to reach/work with a major category of farmers are seriously underrepresented in the AFRENAs.

With the exception of one national scientist currently out for training, none of the AFRENA in-country staff (ICRAF and national) are women. Since women farmers are the repositories of a great deal of specialized agricultural knowledge and comprise a large proportion of the intended beneficiary population, the lack of women scientists who can learn from them and work with them in the process of technology generation and enhancement constitutes a significant impediment to reaching "the farmer" when she is a woman.

The focus on the exclusively "scientific" development of technology packages with a limited range of products (excluding, for example, medicine, rope, shade, flowers) has neglected the possibility of enhancing the productivity of existing systems and local species in their natural habitats with improved management and other adjustments that may be more adoptable by the farmer, less disruptive of the natural ecosystem, and more conducive to the maintenance of genetic diversity. ICRAF research would have a better chance of benefiting both the farmers and the environment if, from the beginning, truly multidisciplinary teams (including social scientists and women researchers) worked on-farm with both male and female farmers at a variety of economic levels. Such research could determine how existing agroforestry systems work and how modifications (including, as necessary, new species and new agroforestry technologies) to those systems and to existing natural habitat could both benefit farmers and increase scientific understanding of agroforestry systems. ICRAF has all the components to do this; it simply has to point them in the right direction.

Relevance to research capabilities in developing countries

The ICRAF programme is highly relevant to the development of research capabilities in developing countries. Research scientists and technicians receive training and professional stimulation in ICRAF courses, workshops and conferences. INFODOC supports the development of research capabilities by providing access to scientific information and by developing local capacity to provide such information. INFOCOMM makes ICRAF research results available to developing country scientists through its publications. COLLPRO is developing research sites and facilities and backstopping the development of agroforestry research programmes with in-country staff working in collaboration with local scientists. Post-graduate training for local scientists is provided through COLLPRO. COLLPRO is also trying to develop mechanisms to encourage coordination and collaboration among the different institutions which are relevant to agroforestry. Such mechanisms could well be of wider use, beyond the confines of agroforestry.

5.3.2.2. Quality and Leadership of Scientific Work

ICRAF has produced an impressive number of in-house publications of various

kinds, and its scientific staff have published many technical papers in the world scientific literature. Some of this production is of undoubted excellence, but the level of quality is uneven. The Panel therefore considered carefully what the processes are for quality control in science, and to what extent such processes operational at ICRAF.

Management for quality

During formal presentations to the Review Panel, much was said about the importance of "maintaining global leadership in agroforestry". This requires that the science conducted by ICRAF be of the highest quality. Any single piece of scientific work might be of great brilliance and quality, depending on the individual scientist. But for consistent production of quality work by all scientific staff, their work must be systematically disciplined. Maintenance requires that systematic procedures of monitoring and review be in place, and be constantly exercised. An important test of science is its replicability, and therefore it must be subject to peer review and criticism.

The stages of scientific research which monitoring and review of quality should affect may be summarized as follows. At each stage, there should be a formal written procedure, with clear criteria, named responsible individuals, and provision for discussion, consensus, and signed approvals.

1. Recruitment and selection of scientific staff.
2. Regular evaluation of performance, with appropriate incentives.
3. Evaluation of the quality of scientific production.
4. Internal and periodic external peer review of experimental plans.
5. Periodic peer review of work in the field.
6. Annual or periodic reporting of work in progress.
7. Internal peer review of written material in draft.
8. External peer review of written material for in-house publication.
9. Editorial and peer review of journal publications.

Such a series of formal procedures appears formidable, but all or most of them operate in institutions that consistently produce high quality work. It is, of course, important that formal procedures should not act as obstacles or as a deterrent to publication. Therefore, a time limit should be established for approval, or return for revision, at each stage. And periodic stages, such as annual reviews of research plans, should occur at regular dates established in advance.

Comments

Although there is some evidence that thought has been given to these aspects, the Panel was given no documents to establish that such formal procedures are in place and functioning at ICRAF. On the other hand, there was a certain amount of written and anecdotal evidence that work of questionable and even poor quality has emerged from ICRAF.

Recommendation:

The Panel recommends that formal procedures for monitoring and review of scientific work should be developed and instituted as a matter of urgency, including signed documentation for every stage.

5.3.2.3. Organization for Internal Collaboration

Coordination at ICRAF is achieved through the Management Committee, Joint Working Groups and ad-hoc Task Forces set up for special topics. The Management Committee, comprised of the Director General and the four Divisional Directors, acts as an advisory body and meets once a month to discuss programme planning, resource needs, and internal and external linkages. It also acts as a forum for exchange of information. Most important technical interaction among ICRAF staff takes place in the four Joint Working Groups: Systems Analysis, On-station Experiments, On-farm Experimentation and Human Resource Development. Scientists from the three programme divisions are represented in these groups. COLLPRO's Technical Support and Analysis (TSA) unit acts as the conduit for channelling inputs from RDD and INFOCOMM into planning and implementation of activities under the Collaborative Programmes. This unit also provides the feedback into the operation of RDD and INFOCOMM, based on field experiences and results.

Comment

Some of the Joint Working Groups do not achieve their objectives, largely because of their informality, lack of delegated authority, and ill-defined function. This is confirmed by staff complaints that the Management Committee fails to address programme issues and has created no forum to which it could delegate this function.

Recommendation

The Panel recommends that ICRAF management address the issue of collaboration and coordination, by ensuring the creation of a functioning and effective formal structure, with regular meetings, agenda, and minutes, for programme review and coordination.

In reviewing the operations of various divisions, particularly RDD and COLLPRO, the Panel observed functional overlap between structural divisions. The separation into two divisions appeared to serve no purpose and was confusing to staff and collaborators alike.

Recommendation

The Panel recommends that the functions presently executed by the COLLRPO Division be divided. The Collaborative Programmes and associated staff should be combined with RDD in a new research division, bearing in mind that the credibility of science depends upon leadership by a person with proven scientific credentials and managerial ability. The training functions and associated staff should be assigned to a reorganized division with INFOCOMM.

5.3.3. 1985-1989 Performance: Information and Dissemination

5.3.3.1. Information and Communication (INFOCOMM)

This division, which consists of the Information and Documentation Unit and the Communications Unit, has two parallel thrusts: 1) acquiring, producing, and disseminating scientific information to scientists and 2) producing and disseminating "jargon-free" information to non-scientific audiences.

Information and Documentation Unit (INFODOC)

This unit which deals with scientific information consists of a library (5000 books, 9000 reprints, 410 journals, periodicals, and newsletters) and a documentation service. A consistent and effective system of cataloguing the library collection is still in the process of development. The library's impressive database is computerized using UNESCO's CDS/ISIS system and can be searched on-line in the library or by INFODOC staff on request. The bulk of the unit's outreach activities have been in Africa. The unit issues a bimonthly accessions list to 311 institutions and individuals, 81 percent in the AFRENAs. In the first six months of 1989, the Unit provided 590 documents in response to 373 requests for searches, 38 percent of which were from the AFRENAs. The Unit maintains a list of 155 scientists to whom specialized searches are sent as a matter of course. In addition to the direct provision of information, the unit is involved in enhancing the capacity of national institutions to provide information in-country. Librarians from 13 African research and educational institutions attended a unit course on Agroforestry Information Management. In addition, librarians from a variety of Kenyan institutions consult on an ad hoc basis with the unit head about computerized data management.

Comment

Access to INFODOC's databases is constrained by the limited memory of the aged computer available for in-library searches and the fact that other ICRAF computers are not linked, increasing reliance on and the workload of INFODOC staff. (Computing is considered below.)

AFRENA and national staff in Africa were very satisfied with the usefulness and responsiveness of INFODOC services.

Communications

The Communications Unit consists of Publishing, Audio-visual, Translation, and Public Affairs services.

Primarily using desktop publishing, the Publishing Unit produces all ICRAF publications (both scientific and "jargon free") except working papers and AFRENA working papers, which are produced by RDD and COLLPRO respectively, but for which the section provides some editorial and production services. Between January, 1988 and June, 1989, the section published 3 books, 23 technical reports and working papers, 6 newsletters and magazines (including the reader-friendly Agroforestry Today, which is praised by practitioners), 8 reprints, and 10 public information items. Reports on the productivity of the publications units of other centres suggest that this is a low level of productivity relative to staffing levels, particularly the levels of international staff. This very likely reflects the backlog left from the period of understaffing and the short period the current staff has been in place. The level of productivity is expected to rise. The importance of ICRAF publications is indicated by the rise in requests for ICRAF publications from 386 in 1986 to 1291 in 1988.

Translation Services provide French translations only of official correspondence, publications and training materials.

The audio-visual section maintains a collection of 8000 slides (in process of being catalogued), produces videos, and operates and maintains all audio-visual equipment. The unit has produced a general slide/video presentation on agroforestry practices and the role of ICRAF, suitable primarily for in-house use with trainees and visitors.

Public Affairs provides information to the media in the form of news releases, a feature service in English and French, and pre-publication release of articles from Agroforestry Today. The Unit is collaborating with the Voice of Kenya in the production of a series of 15 minute radio clips. The English scripts will be provided gratis to other national radio services for use and translation.

Comment

As of July, 1989, the Publishing Unit had an editorial backlog of six booklength publications. The section's ability to produce publications in the timely manner necessary for scientific relevance is constrained by the lack of sufficient editorial staff, a cumbersome combination of user-unfriendly software and troublesome hardware, and the use of cosmetic production features such as sophisticated typesetting and fancy covers.

Lack of consensus on French agroforestry terminology as well as the necessity of translating unedited COLLPRO documents as well as edited ICRAF publications has strained the capacity of translation services. As of July, 1989, two major books published by ICRAF still awaited translation.

Audio-visual section activities such as cataloguing slides and producing photographs are constrained by the necessity of the relevant professional staff member spending a large proportion of his time as a projectionist. On the whole, the outputs of the section are suitable for use primarily by reasonably well-educated audiences with access to audio-visual equipment and electricity.

5.3.3.2. COLLPRO

Training

COLLPRO training is undertaken in-house by the Human Resources and Institutional Development Unit (HRID) and through overseas fellowships for people from institutions collaborating with COLLPRO. Between 1985 and 1989 HRID organized 11 training courses with some 300 participants (7 and 130 respectively were COLLPRO-specific.) Over half the trainees come from Africa. Almost all women who are applicants are admitted to courses: even then, they account for only 10 percent of the trainees. However, roughly one-third of all trainees come from extension or development agencies. With the exception of a 1988 development-oriented course organized with CARE, the courses are designed to support research and, therefore, less than 10 percent of trainees come from NGOs. Because interaction in the classroom between ICRAF research scientists and the trainees (who typically are mid-career researchers) is a crucial component of the courses, participation of HRID training staff in research is encouraged. Training courses are offered in English and French only. Material from INFOCOMM is free to trainees on request.

Between 1985 and 1989, the unit organized 16 COLLPRO workshops, 14 of which were held in Africa and 8 (6 with primarily COLLPRO participants) international seminars and conferences with some 400 participants. Eighteen (9 from COLLPRO) interns, one of whom was a woman, spent 2 to 3 months at ICRAF researching special topics. Between 1986 and 1989, the unit organized 32 study tours with 322 participants.

The unit also organizes overseas training for COLLPRO. Three professionals are to be sent for overseas training from each country in COLLPRO, one in forestry, one in horticulture/crops and one (specified by the project as preferably a woman) in farming systems. An additional educational function is linking local university students to COLLPRO research sites for undergraduate and/or graduate research projects.

Although HRID falls under COLLPRO, about 35 percent of the Unit's activities are non-COLLPRO. While there is almost no funding for this work, the Unit Head organizes, on an ad hoc basis, seminars on agroforestry education in African universities and establishes networks for exchange of curriculum information among these universities.

Comments

Currently participation of non-HRID ICRAF scientists in training courses requires a cumbersome authorization procedure involving two division heads. Streamlining the procedure or adjusting the organizational structure, permitting direct communication between the Head of HRID and the Head of the Division(s) of would-be participating scientists, would increase the efficiency of organizing training courses. As the Unit increases its training activities, it will have to grapple with the shortage of time among RDD staff who, at present, are crucial to the training effort.

The specification of the third AFRENA training position as "farming systems" raises the possibility that it could be used for a degree in agriculture rather than social sciences. Indeed, there is already pressure in one country to send a third trainee for biological training. In order to preserve the multidisciplinary approach of agroforestry research, this position should be reserved for social science.

5.3.3.3. Recommendations

Given the 1) staff and resource constraints presently experienced by INFODOC and Publishing, 2) general scarcity of sophisticated television and video equipment in many developing world institutions particularly those involved in reaching the farmer and 3) relatively high level of awareness of agroforestry among most donors and many governmental institutions,

Recommendation

The Panel recommends that INFOCOMM's strategy for the future be one of consolidation and that no additional resources be expended except for the acquisition, publication and dissemination of information to scientists, practitioners and others in low resource situations.

The Panel recommends extreme caution and a detailed cost-benefit analysis before any resources (human or financial) are expended on the acquisition of buildings or sophisticated equipment or expansion into activities not directly and immediately linked to the acquisition, publication, and dissemination of information to scientists and practitioners. In particular, until these activities are performed at an acceptable level, resources should not be expended on the expansion of public relations activities or non-print media.

The Panel is concerned that many of the Divisions's products can be used only by those who are highly educated or who have access to expensive and sophisticated equipment such as video machines. The Panel recommends that the INFOCOMM develop a strategy for producing products that can be easily and cheaply used by development practitioners and others in low-resource situations.

Most INFODOC activity has been in Africa.

Recommendation

The Panel recommends INFODOC proceed with its proposed strategy of diversifying the geographic distribution of the users of its services and strengthening national institutional capacity to provide information in-country through decentralizing its operations by 1) providing its databases to international, regional and national educational, research and non-governmental institutions, 2) liaising with information specialists in other IARCs for the development of a long-term strategy for technical assistance in agricultural information dissemination and 3) strengthening its information collection activities outside Africa.

The Division should insure that INFODOC has the personnel and equipment such as computers and photocopying facilities necessary to expand, maintain, and manage its databases properly and respond to requests in a timely fashion.

The Panel recommends that the communications unit develop a strategy to increase the timeliness and usability of its products for a diversity of audiences. The Panel is particularly concerned about the lack of products in languages other than French and English, particularly Spanish. Collaboration with international, regional and national institutions might solve this problem. In order to increase timeliness of publication, the unit should avoid time-consuming and expensive cosmetic features that delay publication.

Recommendation

The Panel recommends that further development of training facilities should be at a field location. The Panel emphasizes that construction of training facilities should take precedence over any other capital investment including the proposed INFOCOMM building.

5.3.3.4. Rationalization of Information Technology

ICRAF started to acquire and use micro computers at an early stage in its development, and has progressively added to its hardware as staff and operations have grown. However, as the technology was developing and changing at the same time as ICRAF was growing, the present set of hardware is not fully compatible. Of itself, this is not a problem if machines are used for a single, dedicated function. This ICRAF has managed reasonably well. But there is a lack of uniformity in the software used with various machines, which causes operational problems, in particular, the transferring of text files and the importing of processed data files into text are problematic.

Recommendation

The Panel recommends that ICRAF carefully consider adoption of a uniform set of inter-compatible software that can transfer and import text and processed data files and is transferable among various machines.

5.3.4. Rationale and Criteria for Setting Programme Priorities

5.3.4.1. Needs Assessment and ICRAF's Comparative Advantage

Demands on ICRAF and needs for agroforestry (research, information, training, etc.) are innumerable and it is obviously impossible for ICRAF to address all. The rationale used to decide whether demands/needs are given programme attention and resources are whether, by addressing them, ICRAF can:

- i) strengthen its research for development process, both its efficiency and relevance, its application (e.g. in the AFRENAs) and its dissemination and institutionalization; and
- ii) significantly assist other research and development organizations, particularly national institutions in developing countries, to effectively plan, implement and assess relevant agroforestry activities.

ICRAF's comparative advantage, multidisciplinary in developing process/methods for agroforestry research, information base and network of institutional contacts, is the other criterion used. Thus, even when the first criterion is met, ICRAF only gives priority in its programme to activities that it can do better and/or more effectively than other institutions.

Comments

The process, which consists of assessing felt needs and effective demands, checking the relevance of those needs/demands against ICRAF's operational objectives, as well as against its comparative advantage, may constitute a broad base for identifying desirable programme activities. However, the Panel's concern is to determine the criteria used to select specific programme components as essential activities as against those deserving less urgent attention. Therefore, the Panel suggests that this aspect of priority setting is deserving of further conceptualisation by ICRAF Management.

5.3.4.2. Geographical Balance

ICRAF has identified four geographical regions for collaborative work: American Tropics, Sub-Saharan Africa, South Asia, and Southeast Asia. Each of these geographical regions has been sub-divided into ecological zones making a matrix of 15-20 potential environments for collaborative activities. By 1984, ICRAF had initiated collaborative work in seven areas including the American Tropics, Sub-Saharan Africa, Southeast Asia and South Asia.

In 1985-1986, because of its resource constraints, ICRAF made a deliberate choice to concentrate its active applied research collaboration in Africa, and for logistical reasons has conducted the bulk of its strategic methodology developing research in Africa. ICRAF intends to pursue this African focus for at least the next five years. The present and medium-term plan is to concentrate on Sub-Saharan Africa.

AFRENAs have been initiated in Southern Africa, East and Central Africa, West Africa and West Africa Sahel. The countries covered in these AFRENAs are as follows:

- The Unimodal Upland Plateau of Southern Africa: Malawi, Tanzania, Zambia. Zimbabwe is expected to join during 1989.**
- Bimodal Highlands of Eastern and Central Africa: Burundi, Kenya, Rwanda, Ethiopia and Uganda.**
- The Humid Lowlands of West Africa: Cameroon, Ghana.**
- Semi Arid Lowlands of West Africa: A regional programme to be based with SAFGRAD in Burkina Faso; Senegal, Mali, and Niger have country programmes.**

ICRAF plans to establish networks focusing on information transfer and training of scientists in South Asia, Southeast Asia and Latin America. Efforts are underway to obtain financial support for the second (current) phase of the agreement between ICRAF and the Indian Council of Agricultural Research (ICAR) and for the agreement with the Bangladesh Agricultural Research Council (BARC).

Comments

Given ICRAF's present capacity, resource constraints, the severity of problems associated with the sustainability of existing land use systems in Africa and the current state of technology generation in agroforestry, ICRAF's planned focus in the short and medium terms seems justified and is likely to be cost-effective. However, the Panel notes the urgent need to address the pressing problems of similar fragile ecosystems in South and Southeast Asia which sustain much larger populations and in Latin America. The Panel recommends that ICRAF consider means, short of actual participation in research, of augmenting the national capabilities in planning and implementing agroforestry research. Possibilities of contributing in a complementary manner to some of existing IARC-supported farming systems programmes in South and Southeast Asia and with CIAT and CATIE programmes in Latin America.

5.3.4.3. Clients and Collaborators

If agroforestry is to be successfully institutionalized at the national level, development of local institutional capacity in agroforestry research, extension and policy making should be a major priority in programme design, implementation and expenditures. The Panel recognizes the efforts being made for greater programmatic and budgetary attention to developing and supporting national institutions and the mechanisms and processes by which they can be linked in a common enterprise of research and dissemination. The Panel wishes, however, to emphasize the need for rigorously pursuing this endeavour.

First, there is considerable difference between the theoretical and actual strength and influence of national steering committees in the COLLPRO programme. In most countries, with the exception of one or two energetic and committed individuals who acted as "agroforestry godfathers", the national steering committees appeared to be rather weak bodies which neither had a continuous core membership nor regular meetings.

Institutionalization may require the development and support of a central coordinating institution rather than an artificially constituted body with no staff, funds or authority.

Second, there is a clear need for stronger bridges between local and ICRAF agroforestry initiatives. Zonal researchers should be on the same station as local agroforestry researchers to facilitate coordination and exchange and to prevent development of separate agroforestry identities. Instead of the very junior staff who are currently assigned to the projects, it would be desirable to have senior counterpart staff who can interact as equals with expatriate staff. The possibility of amalgamating zonal and country-specific trials should be explored, particularly when country trials are already on the ground. Development of collegial relations among AFRENA and non-AFRENA agroforestry researchers in the form of regular meetings, data exchange, coordination and cooperation should be a matter of priority. In addition, the local board member or representative of relevant regional institutions should be invited to all zonal meetings.

6. ICRAF Towards the Year 2000

6.1. Programme and Financial Philosophies 1981 -89, and Projections

ICRAF's science to date has been dominated by the system-based approach outlined in the Strategy paper developed by the Council's Interim Director, Dr. Howard Stepler, in 1981. The approach is summarized in one paragraph (pg.3) which at the same time announces that ICRAF will design and conduct research:

"The systems approach implies, firstly, that one does not engage in piecemeal consideration of problems and, secondly, that there is an analytical as opposed to intuitive approach to the system. ICRAF's strategy is to develop that analytical approach, the diagnostic methodology which enables one to analyze the state of the system, to determine the subsystems that are operative and to identify the restrictions/constraints and the potentials. From this would then flow the capacity to identify existing technology that may be introduced into the system or sub-system and to define the nature of the research problem which must be solved if one is to improve the capacity of the system. Additionally, ICRAF should develop the capacity to design the appropriate research and demonstrate that it has the ability to conduct it. Thus the Council can meet its challenge to advise on research."

When the Board of Trustees accepted in full, March 1985, the External Review Report, it requested the Director, Dr. Lundgren, to prepare a response for the Board which would propose strategy and program for implementation. This report went through several drafts, but there is basically a section on Strategy 1981 - 1985, the development of Stepler's above-cited paragraph. Then there is a section, Strategy Proposed for 1986 and Onwards which is, in the words of the Director General, "truly a logically expanded rather than a new strategy."

It is in response to a request from the second Review Panel Chairman, Dr. Mensah, for his comments on the present adequacy of his 1981 Strategy Paper, that Dr. Stepler anticipates change at ICRAF:

"The external scene is, however, changing rapidly. There is an increasing number of national activities in agroforestry many of which will lead to institutionalization. These cover both research, extension and development. At the same time, the IARC's of the CGIAR and others are becoming active in research associated particularly with sub systems and/or crops, e.g. ILCA, ICRISAT, IITA, IRRI."

"Thus ICRAF's need and strategy will be to identify and pursue research in one or more areas which are key to agroforestry and not pursued by others. The Council will undoubtedly become more of a catalyst in promoting agroforestry research and in identifying lacunae in the global research agenda to be undertaken by it or other actors on scene."

"This clearly takes us into Phase IV of the cycle with continuing activity -albeit more specialized - at Phase III. It would seem that in the intermediate term future there may be a need for ICRAF to develop methodologies applicable to

Phase IV - system synthesis and testing".

On the resource or financial management side of the evolution of ICRAF, there is a parallel. Dr. Stepler wrote a paper in 1981 "A Scenario for ICRAF for Year Q" which outlines in general terms ICRAF's financial strategy, the relation of core to restricted core or special projects. In Dr. Stepler's above mentioned response to the Panel Chairman's request that he comment his 1981 papers, he states:

"There is ample evidence that the Council has not been able to enlist sufficient support from the donors to meet the growing demand for ICRAF services. This is especially true with respect to core. Scenario Q projected a steady state core - in fact we have grown. It further suggested that overhead from special projects plus payback from special projects could be used both to expand core activity and meet ongoing core costs.

"Unfortunately, core activity has had to increase to meet increased demand while donor support to core has not increased at the same rate (except for a couple of donors). In addition, many donors do not pay overhead or will not meet full overhead costs. The great difficulty that this presents to management is to ensure continuity of core activity and to be able to respond to donor and collaborating country requests while faced with uncertainty in money supply.

"Management has two choices.

- (1) To be financially responsible and to hold staff and activities to secure funding projections.
- (2) To be responsive to requests - especially those of collaborating countries even though it entails some risk financially - this is not, however, financial irresponsibility.

"Management chose the second course and I strongly support this choice. I believe that they have skilfully managed the affairs of the Council, not responding to all requests but following a rigorously articulated plan.

"The scenario drew attention to one ineluctable need - a working capital - to ensure cash flow and continuity. It even suggested that the capital should be equal to 100 per cent of annual cost of core.

"Our working capital is zero - this is increasingly intolerable and is costing us money in bank overdrafts. Delays in transfers from donor agencies, bureaucratic delays in implementing projects, monies to prepare projects, all urge the need for working capital and greater core support - they are not mutually exclusive.

"It seems to be that the future of the council will not be in jeopardy because of the mandate or because of the lack of scientific and professional competence

of the council; rather, jeopardy will arise if we do not quickly put the council on a sounder financial basis by meeting the two requirements of

- increased core support and
- established of a working capital fund equal to approximately 42 days of council operations."

6.2. Management's Proposals and Panel Comments

The Context

The second External Review of ICRAF was undertaken at a time when the Council's Board of Trustees and its management had not yet adopted a policy statement on the draft of ICRAF's Strategy Towards the Year 2000. Yet the need for such a policy statement has been clearly determined by the Board and, as a result, the Director General has been actively editing the Strategy Towards the Year 1990-2000, referred to as Strategy 2000, for submission to the Board late in September, 1989. Therefore, the External Review Panel could only comment on the preliminary draft with the hope that such comments might be useful in finalizing Strategy 2000.

ICRAF is heading toward the year 2000 within an international agricultural research policy context characterized by great expectations for agroforestry as the science of, or a tool for ensuring, sustainable agricultural production. Indeed, there is an ever increasing emphasis on the need to meet the additional household food and other agro-based commodities through sustainable agricultural production systems which demand land use patterns combining greater productivity per unit with conservation and improvement of the bio-physical environment. As a result of the "tremendous expansion of interest in agroforestry that has taken place in the last few years," a growing number of new initiatives are underway, with risks of excessive duplication.

At the same time, the trend of financial resource transfers to international cooperation for agricultural research suggests that research institutions should have the ability to adjust their operations to financial constraints. The current growth curve of ICRAF resources, which over the last five years showed a three-fold increase, is unlikely to continue. Against such a background, it is the Review Panel's opinion that the objective of ICRAF's Board to maintain its leadership position in the development of agroforestry during the coming decade poses a major challenge.

6.3. A New Reading of ICRAF's Mandate: Strategy 2000

Overview:

The draft outline of ICRAF's Strategy 2000 states: "Recognizing that the past five years have seen a major increase in the number of international and national

institutions engaged in agroforestry, and recognizing the complexity of agroforestry research and the limited resources available to ICRAF, the Strategy of the Council is to select a limited number of activities that will enable it to continue to meet its global mandate of achieving productive, sustainable and diverse land-use systems."

The Review Panel welcomes the statement which suggests that during the next ten years ICRAF will determine the desirable activities that the Council is well placed to carry out and which can make an essential contribution to agroforestry development.

Recommendation

The Panel recommends that the Strategy 2000 paper spell out the selection criteria for the "limited number of activities," bearing in mind that the ultimate beneficiaries of these activities will be the small farmer. In that connection it is the Panel's view that the current definition of "ICRAF's clients" should be re-examined in order to better reflect the role of farmers and other "land-users and ultimate beneficiaries" in the design process of agroforestry technologies.

The Panel accepts the Strategy 2000 reading of ICRAF's "global mandate" which recognizes that, as has been the case until now, some specific areas of ICRAF's activities will address worldwide demand (e.g., information) while others may have only a restricted geographical impact (e.g., AFRENA).

The draft of Strategy 2000 describes ICRAF's approach to dealing with its three basic elements: the research process, the information process and institutionalisation, national research capacity- building.

The Research Process:

The research process, which should be characterized by a high level of scientific rigour, will continue to be based on a multi- and interdisciplinary approach with "particular attention being given to the integration of socio-economic with bio-physical expertise in the undertaking of strategic and applied research." Having made a conscious decision to operate with very limited in-house research infrastructure, "ICRAF will increasingly depend on partnership and cooperation with other institutions in research."

Research priorities will include:

- (a) Improvement of the methodologies to design relevant agroforestry technologies including cost-effective experimental designs for agroforestry research with particular emphasis on on-farm research; and
- (b) Identification and improvement of multipurpose tree germplasm including

local species for the priority Agroforestry technologies identified.

In addition to the above mentioned priorities, a new dimension to the research activities will be the evaluation of the effectiveness of the ICRAF research process itself with a view to its improvement and providing guidance for further institutional development efforts.

Strategy 2000 indicates a change in emphasis to include considerably more on-farm research and input from the social sciences in increased collaboration with national research institutions and IARCs. The choice of research thrusts reflects a decision to consolidate ICRAF's achievements before adding on new areas of investigation. The extent to which ICRAF can conduct additional collaborative research with national partners will depend on financial resources, manpower and the organizational structure of ICRAF.

There is general recognition that the ICRAF structure has approached its limits and that the Council needs a period of adjustment. At the same time, open and close coordination and increased collaboration with the several IARCs involved in systems research of relevance to ICRAF would be advantageous at relatively low cost in staff time. There is a history of token collaboration, sporadic and not truly intent on benefiting from comparative advantages of the different centres.

However, the Panel sees opportunities for further cooperation between ICRAF and other international research institutions. The first step would be prompt and effective follow-up action on decisions already made to carry out more collaborative work.

The Panel recommends that every effort be made to establish the task-forces agreed upon by ICRAF, ICRISAT, IITA and ILCA at the 1986 meeting convened by ICRAF.

The second step should be a deliberate move towards joint planning and design of research activities. It is the Panel's view that institutions such as CIAT, IITA, ILCA, CATIE and ICRISAT are open to such an approach which they believe would contribute to cost-effective use of international agricultural research resources. In fact, following a short collaborative exercise in the early 1980s, between ICRAF and CIAT on the diagnosis and design of alternative silvopastoral technologies, CIAT increased its interest in screening woody species in their relationship with the adjacent pasture. As a result, shade tolerance was introduced in CIAT as a selection criterion for crops, and experiments are on-going. The findings could be of interest to ICRAF. Likewise, resource management research activities, which constitute an important dimension of the IITA new medium term plan (1989-93) could be of considerable interest to ICRAF.

Recommendation

The Panel recommends that initial efforts at collaboration with other IARs be strengthened, intensified and, institutionalized. The Panel further recommends that, based on exchange of information and early consultation on program

content at the stage of planning, agreement should be reached between ICRAF and its research partners on collaboration within the "grey areas" of their respective mandates, taking advantage of each institution's particular strengths both in commodity research as well as in knowledge of given ecosystems.

The Panel notes the recognition in Strategy 2000 of the potential contributions of institutions such as IUFRO and IBPGR, as well as specialized developed country institutions, and expects that an intensification of information exchange will take place.

The Geographic Focus of Research Activities

Strategy 2000 proposes that the main target areas of its collaborative research programmes should continue to be the four ecozones selected for AFRENA programmes in Africa, at least for the period 1990-95. This choice reflects once again the priority given to consolidation over new initiatives although it is also being justified by "the complexity of and volume of resources needed for the successful implementation of AFRENA programmes." Collaborative research efforts in Asia and Latin America would be limited to research planning, training of scientists and provision of information and advice.

The Panel accepts the emphasis (preferable to "focus") on Africa as a logical decision but wishes to recommend that ICRAF undertake a careful cost-benefit analysis of a modest but more meaningful collaborative research effort with Asia and Latin America than presently envisaged in the draft outline. It is the Panel's opinion that ICRAF may take advantage of the contribution of international institutions located in those areas (e.g. CATIE, CIAT, ICRISAT IRRI) as well as advanced national research centres to obtain results which might also benefit the African programmes. In the process, opportunities might be offered to start exploring new agroforestry- based land use systems.

The panel recommends that ICRAF carefully examine the merit of working through international and national institutions as its outreach branches in other regions, as an alternative to the Strategy 2000 proposal for establishing regional offices in Asia and Latin America.

The Information Process

Unlike research, information is a domain in which ICRAF has decided to continue to provide a "global service". Strategy 2000 envisages a "considerable" strengthening of ICRAF's information and communication aspects in order to provide an efficient global service to agroforestry scientists and practitioners. Subject to resource availability, specialised information would also be made available to policy makers, educational establishments, and the general public. National and regional information centres would be assisted to build their own capabilities in handling and disseminating agroforestry information. The Panel wishes to emphasize the need to strengthen global information gathering and processing, and the vital role this plays in ICRAF's ability to perform as the global centre of knowledge in agroforestry.

The Institutionalization Process

ICRAF's Strategy 2000 views "institutionalization" as a crucial objective. Its attainment requires not only an effective development of human resources but also the formulation and enactment of appropriate policies addressing legal, institution building and resource allocation issues. It is ICRAF's expectation that, as national institutions' capabilities in agroforestry research are enhanced, the Council would reduce its field implementation activities in favour of monitoring and evaluation and policy advice.

The Review Panel endorses this approach but does not share the optimism expressed in Strategy 2000 whereby this role would "become prominent" in ICRAF's programme in the latter part of the 1990s. Bearing in mind the difficulties faced by the institutionalization efforts in other research, including agriculture, in spite of longer established identity and tradition of support, the Panel suggests that ICRAF be prepared and equipped for a longer gestation period before agroforestry can be absorbed within the policy and institutional framework of collaborating member countries.

6.4. Implications for Programme Composition

The composition of ICRAF's programme reflects a series of choices. Those choices and their implications are considered here.

1) Disciplinary Research Balance

ICRAF stresses the multidisciplinary nature of its approach and practices multidisciplinary in the D&D exercise. However, the Panel recommends that ICRAF re-affirm its multidisciplinary approach by increasing the social science component of its field research programme.

2) On-station versus On-farm Research

The bulk of ICRAF field research is conducted on-station. The decision to conduct a particular piece of research on-farm or on-station involves a series of trade-offs affecting who is likely to be able to use the research results, when and with what effect. On the whole, research conducted on-farm is more likely to produce results in a shorter time that are more easily adoptable by the farmer. In the following list, the choice on-farm is compared with the on-station choice in terms of:

- a) mature vs. infant systems
- b) complex vs. simplified systems
- c) indigenous vs. exotic species
- d) fast and slow-growing species vs. fast-growing species only
- e) many products vs. a few products
- f) natural and manipulated habitat vs. manipulated habitat only

- g) micro- and meso-scale vs. micro-scale only
- h) biological, social, and economic factors considered and measured vs. only biological factors can be measured
- i) many technologies vs. a few technologies
- j) farmer and researcher expertise vs. researcher expertise only
- k) high variability vs. some variability controlled

The Panel recommends that ICRAF proceed with its strategy of increasing on-farm research with the intention that there should be a shift of emphasis to on-farm in the near future. Queries that can not be answered on-farm should then be studied on-station.

3) Exotic versus locally-used Tree Species

Four or five exotic tree species dominate ICRAF research. While there are plans to add indigenous species to the trials, for logistical reasons they can involve only a small proportion of the hundreds of species farmers use and know. Thus, the implication of a greater emphasis on locally-used species is that more research must be done on-farm and/or in natural habitats.

The Panel recommends that a greater proportion of ICRAF research involve locally-used tree species.

4) Training researchers vs. training agroforesters

Consistent with its research focus, ICRAF has predominantly trained people to do research. However, there is increasing demand among development agencies including local NGOs for agroforesters. ICRAF's new initiative to strengthen education in agroforestry should eventually meet this need.

Recommendation:

The Panel commends and recommends the implementation of the ICRAF proposal to train trainers, focusing some of its resources on training field agroforesters.

5) In-house versus Decentralized Programmes

Increasing demands for research, information and training are rapidly exceeding ICRAF's capacity to deliver in-house without considerable expansion of the facilities and the staff. Such an expansion would be inadvisable for both financial and substantive reasons. The financial situation is self-explanatory. Substantively, there will be a longer term pay-off if ICRAF nurtures the capacity of national institutions to undertake research, information dissemination and training/education for themselves.

Recommendation:

The Panel recommends that ICRAF pursue its strategy and programme to enhance the capabilities of national institutions. For training, information services and management (as well as research) by progressively decentralizing these activities.

6.5. Implications for Management

The Review Panel agrees that "the Council will not be in jeopardy because of the mandate or lack of scientific and professional competence" but the Panel feels that the critical financial difficulties brought about by past policies and the impending changes indicated below have serious strategic implications for ICRAF's Board, management and donors.

The Board had looked forward to the need for a reexamination and reformulation of ICRAF's Strategy evidenced in its request to the Council's management to develop ICRAF 2000, a strategic exercise that has produced its first draft. Thus, over the next year or two, if ICRAF is to achieve a coherent strategy built upon its experience and the needs of the developing world's agriculture (in the widest sense), Board, management, staff, donors and interested friends will be reexamining, and thinking and endeavouring to express ICRAF's role and where it wants to be in 2000 and beyond.

If we make an appraisal of the ICRAF's leadership (Board, management and scientific), its resources, its science, and its strategy, we cannot but be dramatically impressed by the challenging array of organisational problems that must be addressed.

These are:

- (a) The Board Chairman has been re-elected, through an anomalous process which implies change in two years;
- (b) The Director General approaches 8 years of service which suggests change in two years;
- (c) The four division Directors and or leaders have indicated that they might leave ICRAF in one or two years;
- (d) The ICRAF Support Group and TDSG need organization, CGIAR incorporation notwithstanding;
- (e) The Support Group expressed hesitancy as regards increased support or, for that matter, any change pending a CGIAR decision on inclusion of ICRAF in its research system;

- (f) The Chairman of the Board, the Director General and others ICRAF staff as well as the Review Panel, anticipate and recommend change in ICRAF's science. This will be more explicit when the ICRAF 2000 strategic planning exercise progresses towards completion.

The above factors strongly suggest that ICRAF 2000 is not sufficient. The ICRAF Board needs to elaborate a strategy on how it will manage its affairs, its composition, how it will handle management and scientific personnel changes and how it will obtain the ICRAF Support Group's understanding and collaboration. It should consider and decide whether to postpone or encourage personnel change.

The Panel sees merit in the admission of ICRAF into the CGIAR network to assume better coordination with other centres and to stabilize its core funding and continuity. Should ICRAF be invited to become a member and decide to accept, it should be prepared to subject its programmes and operations (including staffing) to comprehensive technical review and overview by the TAC.

Is incorporation of ICRAF into the CGIAR to ICRAF's advantage? ICRAF's Board should decide. In the Panel's view, ICRAF's role in an enlarged CGIAR would be distinct from that of an eventual forestry research institution and would not constitute significant duplication. If ICRAF receives the coveted invitation and decides the conditions are unacceptable, what does the Board decide? What would be the effect on the ICRAF Donor Support Group of a negative decision? Can the wait-and-see attitude of the ICRAF Support Group be changed? Should the ICRAF Board anticipate management and scientific personnel changes? Though it will probably not be the case, ICRAF could find itself with a complete and simultaneous change of its leadership of the last ten years. Should these changes not be planned?

Both the ICRAF Board and management have suggested programmatic and structural changes. These, and the resource implications, will appear from the Strategy 2000 exercise. The Director General has suggested a preponderant role for himself (with staff) in the next iteration of Strategy 2000. Given the above institutional picture, the exercise requires time and the involvement of the Board and the ICRAF Support Group. The involvement of ICRAF's Board should be more than the usual passive information and approval exercises. There is a need for a consensus building strategy exercise as a basis for guiding the institution over the next years.

7. ANNEXES

7.1. Brief Biographies of Panel Members

Mr. Moise Mensah (Chair of Panel)

Assistant President, Project Management Department of International Fund for Agricultural Development - (Rome - Italy)

Degree of Ingenieur Agricole, Ecole Nationale d'Agriculture de Grignon (now Institut National Agronomique, Paris - Grignon) France

Diploma in Economic planning and National Accounting, Institute of Social Studies, The Hague, Netherlands

Diploma in Development Banking, Centre d'Etudes Financieres Economiques et Bancaires, Paris, France

Before his present appointment as Assistant President of IFAD (1978 to date) his professional career included mainly the following positions:

1. 1962 - 1965. Director General, Societe Nationale pour le Development Rural (Sonader), Benin.
2. 1965 - 1966. Minister of Rural Development, Ministry of Rural Development, Benin.
3. 1967 - 1976. Assistant Director-General, Regional Representative for Africa, Food and Agriculture Organization of the United Nations (FAO), Accra, Ghana.
4. 1976 - 1978. Vice-Chairman and Executive Secretary, Consultative Group on Food Production and Investment, World Bank, Washington, D.C., U.S.A.

Other international activities involved inter-alia the following duties:

Chairman of the Board of Directors, International Livestock Centre for Africa (ILCA), Addis Ababa, Ethiopia.

Board Director, International Centre for Fertilizer Development, Muscle Shoals, Alabama, U.S.A.

Board Director, International Irrigation Management Institute (IIMI), Kandy, Sri Lanka.

Field Coordinator of United Nations Relief Operations for the drought-affected Sahelian countries.

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1978-1981 Team Leader, FAO/UNDP Project "Crop Development in Burma".

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1983-1986 Member - Technical Advisory Committee (TAC) of CGIAR.

1983-1988 Member (Crop Sciences), Pakistan Agricultural Research Council, Islamabad.

1989- Director General, National Agricultural Research Centre, Islamabad.

- Served as Panel Member for IBPGR, External Programme Review, 1984.

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Paul Cooper

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Mr Cooper has had extensive experience in financial management in industry, government, and non-profit institutions. He was the Controller of Milan Arsenal from 1961 to 1967. He retired from the US Agency for International Development in 1978, where he last served as Deputy Controller of the Agency. He then served as Controller and Treasurer of the International Rice Research Institute until late 1987.

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Dr. Fortmann has a B.A. in Political Science from the Pennsylvania State University, and an M.S. and PhD. in Rural Sociology from Cornell University.

From 1974-75 she was a lecturer in Rural Economy at the Faculty of Agriculture and Forestry at Morogoro, Tanzania. From 1975-78 she did project design and evaluation in Tanzania. From 1979-83 she was the leader of two interdisciplinary survey teams on local resource management in Botswana. Since 1984 she has been on the faculty of the Department of Forestry and Resource Management, University of California at Berkeley, where she teaches resource sociology. She conducts research on environmental protest, rural poverty, and tenure. She has published 75 refereed journal articles, book chapters, monographs, reports and

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Dr. Drake Hocking

Agroforester

Dr. Hocking holds B.Sc., M.Sc. and Ph.D. degrees in Biology, Mycology, and Biochemical Genetics from Universities in Canada, Scotland and England; and M.B.A. in Economics and Public Policy from Harvard University in the United States.

He has worked as Crop and Forest Pathologist in East Africa for four years, and as Research Scientist in forest regeneration and Project Leader in air pollution effects on forest ecology for the Canadian Forestry Service for ten years. He then served as Chief of Wildlife Management for Western and Arctic Canada for three years.

Since 1978, Dr. Hocking has worked as natural resources technical adviser, agroforestry research scientist and adviser, and consultant in various countries of South Asia; mostly in Bangladesh, India, and Nepal. He has worked or consulted for the following agencies or institutions: Canadian CIDA, British ODA, Swiss SDC, Intercooperation, Indian ICAR, ICRISAT, MYRADA, USAID, and IDRC. He is a member of the following Professional bodies and has served in various executive positions:

Association of Applied Biologists
British Mycological Society
Canadian Institute of Forestry
Indian Society of Tree Scientists
Nitrogen Fixing Tree Association
Range Management Society of India
Society for Promotion of Wasteland Development

Dr. Hocking has published many sole or co-authored papers in refereed scientific journals. He has also written more than sixty substantial project reports, manuals, and related articles; numerous conference and workshop papers; a tree nursery manual for Nepal; and is co-author with Ram Parkash of a book on Fodder and Fuelwood Trees for India.

He is currently employed as Programme Officer, Forestry, and Impact Monitoring Specialist for Swiss Development Cooperation in Nepal, Kathmandu, Nepal; and concurrently continues with action-research agroforestry development projects in Bangladesh, Rajasthan, and Karnataka.

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7.3.List of Acronyms

AFNETA	Alley Farming Network for Tropical Africa
AFRENA	Agroforestry Regional Network for Africa
ASRE	Agroforestry Systems Research and Evaluation
ATRE	Agroforestry Technology Research and Evaluation
BARC	Bangladesh Agricultural Research Council
CARE	Cooperative for American Relief Everywhere
CATIE	Centro Agronomico Tropical de Investigacion y Euseanza
CG, CGIAR	Consultative Group on International Agricultural Research

CIAT	Centro Internacional de Agricultura Tropical
CIDA	Canadian International Development Agency
COLLPRO	Collaborative Programme Division
COSPRO	Collaborative and Special Projects
CTFT	Centre Technique Forestier Tropical
D & D	Diagnosis and Design
DSE	German Foundation for International Development
DSG	Donor Support Group
GTZ	German Agency for Technical Cooperation
HRID	Human Resource and Institutional Development
IBPGR	International Board for Plant Genetic Resources
ICAR	India Council of Agricultural Research
ICIPE	International Centre for Insect Physiology and Ecology
ICRAF	International Council for Research in Agroforestry
ICRISAT	International Centre for Research In Semi-Arid Tropics
IDRC	International Development Research Centre
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
INFOCOMM	Information and Communication Division
INFODOC	Information and Documentation Unit
IRRI	International Rice Research Institute
ISNAR	International Service for National Agricultural Research
IUFRO	International Union of Forestry Research Organizations
KARI	Kenya Agricultural Research Institute
KEFRI	Kenya Forestry Research Institute
MPTS	Multipurpose Tree Species
MULBUD	Multipurpose Multicrop Budgeting
NARS	National Agricultural Research Systems
NGO	Non-Governmental Organisation
RDD	Research Development Division
SACCAR	Southern African Centre for Cooperation in Agricultural Research
SAFGRAD	Semi-Arid Food Grains Research and Development
SDC	Swiss Development Cooperation
SIDA	Swedish International Development Agency
TAC	Technical Advisory Committee of CGIAR
TDSG	Technical Donor Support Group
TSA	Technical Support and Analysis
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development.