

ANNUAL REPORT

1981



ICRAF

INTERNATIONAL COUNCIL FOR RESEARCH IN AGROFORESTRY
CONSEIL INTERNATIONAL POUR LA RECHERCHE EN AGROFORESTERIE
CONSEJO INTERNACIONAL PARA INVESTIGACION EN AGROSILVICULTURA

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ANNUAL REPORT 1981

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BOARD OF TRUSTEES

Trustees during 1981

Dr. M.S. Swaminathan, India, Chairman	
Dr. W. Bosshard, Switzerland, Vice Chairman	
Dr. P. Alvim, Brazil	(from April 1981)
Mr. J.G. Bene, Canada	
Dr. R.F. Chandler, Jr., U.S.A.	(until April 1981)
Mr. J.H. Hulse, Canada, appointee of Executing Agency	(until April 1981)
Dr. J.C. Madamba, Philippines	
Prof. H.J. von Maydell, Germany	
Mr. O.M. Mburu, Kenya, appointee of Government of Kenya	
Dr. J.G. Ohler, The Netherlands	
Prof. L. Roche, U.K.	(from April 1981)
Prof. H. Steppler, Director-General Interim	(until May 1981)
Dr. B. Lundgren, Director (ex-officio)	(from September 1981)
Mr. K. Gatamah, Secretary to the Board	

Meetings 1981

7th Board of Trustees Meeting, April 5-7, 1981 Nairobi
2nd Finance Committee Meeting, April 5, 1981 Nairobi
3rd Programme Committee Meeting, April 4, 1981 Nairobi
4th Programme Committee Meeting, November 25-27, 1981 Nairobi

Some Important Board decisions in 1981

At the seventh Board of Trustees meeting in Nairobi in April, several important decisions were passed which will affect both day-to-day and long-term efficiency and development of ICRAF. These include:

- the strategy and focus of work for ICRAF, developed over the half year preceeding the meeting, were adopted as was the tentative programme outline (see further Director's report page 3),
- a new permanent Director, Dr. B. Lundgren of Sweden, was appointed,
- a senior administrative position as Secretary/Treasurer was created to which Mr. Karugor Gatamah of Kenya was appointed,
- uniform, internationally competitive, staff policies and employment conditions were adopted for senior scientific and administrative staff and for support staff respectively,
- the old Executive and Finance Committees were merged into one committee,
- a decision was made that ICRAF should not for the time being seek active membership In the CGIAR system,
- there should be no direct donor representation on the Board of Trustees, and
- two new Trustees were elected Dr. Paulo Alvfm of Brazil and Professor Laurence Roche of the U.K.

The Board expressed its thanks and appreciation to the Director General Interim, Dr. Howard Steppler of Canada, who left ICRAF in May 1981, to the two Trustees whose terms ended, Dr. R.F. Chandler, Jr. of USA and Mr. J.H. Hulse of IDRC, Canada, and finally to the IDRC which terminated its role as Executing Agency on August 31, 1981.

At the Fourth Programme Committee meeting in Nairobi in November, the Committee passed a recommendation to the eighth Board Meeting (1982) to approve the detailed Programme of Work for ICRAF for 1982-1984 that had been developed in September - November based on the resolutions of the Seventh Board Meeting (1981).

2. DIRECTOR'S STATEMENT

For ICRAF, 1981 has been a year of dynamic turbulence and development. It entered the year as a very small organization involved in a stimulating exercise of developing a focus and strategy for its work. It left it, still a small but growing and confident organization, with a fully developed and well structured Programme of Work and with a clear sense of direction. During the year ICRAF has also had the satisfaction of seeing an increased interest in its work among donors.

The identification of a focus of work for the Council was one of the major terms of reference for Dr. Howard Steppler during his ten-month term as Director-General Interim. This work was successfully concluded when the Board of Trustees, at its seventh meeting in April 1981, approved the focus and strategy developed by Dr. Steppler and the senior scientific staff.

In short, it was concluded that ICRAF must initially develop an understanding of how to deal, in research and development, with agroforestry as land use systems rather than to engage its limited resources in ad hoc and piece-meal studies and activities on various components of the systems.

The strategy envisages the building up of a multidisciplinary team of scientists and the development, through this team, of methodologies on how to identify social, economic and ecological constraints in land-use systems and how to assess potentials of agroforestry technologies to overcome these constraints (the "diagnostic methodology" - see further below page 10). The creation of a strong and experienced multidisciplinary team will be made possible through secondments of senior scientists by a number of donor agencies.

To fulfil ICRAF's mandate, and to lend credibility to the advice that ICRAF is providing, high priority is also given to a systematic collation and evaluation of agroforestry "know-how". ICRAF will not, however, at this stage involve itself in large scale field research on the generation of agroforestry technologies (because we do not have the resources, and because such research has to be location-specific). Such research will be initiated through collaboration with national institutes.

Finally, the strategy gives considerable emphasis to the development of efficient dissemination channels for our "know-how", capacities and methods.

During the latter part of 1981 a programme structure was developed to allow the implementation of this strategy. Seven work programmes were established, each comprising different activities and projects (described in section 5 of this report).

In summary, it can truly be said that in 1981 ICRAF has developed a new and firm foundation to work from. It has not been achieved without considerable strain on the staff, who, apart from carrying out their normal programme work (see below section 4), has had to spend long hours in meetings discussing the strategy and programme development. The inevitable lapse in continuity and momentum in the process created by the fact that Howard Steppeler had to leave in May, because of prior commitments to his University, and I could not join ICRAF before September, did not, of course, make it easier. It is doubtless that without the inspiration, dedication and, indeed, patience shown by the small group of senior core staff, it would not have been possible to conclude the work in 1981.

During the year ICRAF has enjoyed full support from the Government of Kenya. Two concrete expressions of the interest in our work shown by our host country are that we have been granted the use of a 40 hectare piece of land for our Field Station in Machakos by the Ministry of Livestock Development, and have been offered the use of a 2 hectare plot of land in Nairobi by the Ministry of Environment and Natural Resources for development of permanent headquarters.

Many donors have actively shown their increased interest and confidence in ICRAF. The Swiss Development Corporation (SDC), IDRC, GTZ and the Dutch Ministry for Development Cooperation have all agreed to second senior staff to ICRAF for periods of two to three years. CIDA of Canada and SDC have also agreed to step up their annual core support to ICRAF over the next 3-4 years. The regional office of the Ford Foundation will soon join in the support of our activities and the National Academy of Sciences of the US will finance a project in 1982 on fast-growing nitrogen-fixing trees. Very encouraging discussions have also been

held during the year with several other donor agencies, discussions which we hope will bear fruit in 1982 and 1983.

No doubt, much remains to be done before ICRAF professionally and financially reaches the optimum operational level required to efficiently fulfil the challenge of our mandate - to promote, initiate and support research for development of viable and sustainable land use systems in the tropical and sub-tropical developing world. We do feel, however, that 1981 has been a big step forward, and if we, in retrospect, now consider it the "year of consolidation" we are looking confidently forward to 1982 as the "year of take-off".

³- ADMINISTRATIVE CHANGES

3.1. Withdrawal of Executing Agency

On August 31, 1981, the International Development Research Centre (IDRC), after having ascertained that the necessary actions to establish ICRAF as a legal entity operating under its duly constituted Board of Trustees had been completed, withdrew from its role as Executing Agency. IDRC was originally appointed as Executing Agency by the consortium of donor countries and agencies who cooperated in the establishment of ICRAF in 1978.

3.2 New Director

At the seventh Board of Trustees meeting in Nairobi on April 6-7, 1981, Dr. Bjorn Lundgren from Sweden was appointed new Director of ICRAF (the old title of Director-General was at the same time abolished in view of the Council's modest size). Dr. Lundgren took up his position on September 1, 1981, initially for a three year period.

3.3. Senior staff changes

Dr. John B. Raintree - Social Anthropologist from the USA, joined the Council on January 1, 1981 as a Rockefeller Foundation Social Science and Agriculture Post-Doctoral Fellow.

Dr. Wolfgang Hetsch - Forester from Germany, spent four months between January and May at ICRAF as a research scientist on secondment from GTZ in Germany.

Prof. Howard Steppler - left ICRAF on May 29 after having served for ten months as Director General Interim.

Mr. Richard Labelle - of Canada came to ICRAF in July on a two-year secondment from IDRC as Senior Documentalist.

Ms. Louise Buck - from the USA was employed on a consultancy basis in November for a one-year period as coordinator for a joint Mazingira/ICRAF project.

4. PROGRAMME AND STAFF ACTIVITIES

Considering the small staff - at the beginning of the year there were five senior scientific staff members, at the end seven - and in view of the substantial time spent on developing the new Programme of Work the level of "normal" programme activities has been surprisingly high. The more important activities and achievements are presented below.

4.1. Library and information services

Following a consultancy visit by J. Woolston, Director of the IDRC Information Sciences division, in April 1979, a project was proposed by which IDRC will support ICRAF in building up its information service capacity. In July 1981, Mr. Richard Labelle from Canada took up the position as Project Adviser for Information and Documentation on a two-year secondment from IDRC.

The objective of the IDRC project, entitled "Information Services in Agroforestry", is to provide a service to answer requests for agroforestry information to research and development workers (subject - specific bibliographies, documents, interpretation of agroforestry information, advice, etc.). The intention is to amass only those documents necessary to answer these requests by using cooperative information services to collect them (local libraries, out-of country information centres, etc.), as opposed to trying to maintain a collection here at ICRAF in expectation of the requests. Request-specific files are being put together and contain what are in essence subject-specific bibliographies resulting from literature searches to satisfy these requests. These files refer to hard copies that are kept in the library. Request files will form the basis of future bibliographies, lists of research workers etc. and will eventually (and hopefully) define current research interests as well as research needs for this new discipline. They will also help identify the structure of the information in agroforestry. They will be updated periodically.

In order to establish contacts with relevant information centres, Mr. Labelle visited UK, France and The Netherlands in August. Among

Institutions visited, which are, or may become of direct relevance to ICRAF's information services, were:

LRDC, various CAB agricultural and horticultural institutions,
TPI, Rothamsted, and CFI/CFB, in UK;
CATED (Centre d'assistance technique et documentation), in France;
The Royal Tropical Institute and PUDOC in The Netherlands.

During the year, the Library acquired new books for a total cost of approximately US\$1800 and paid subscription fees for periodicals of about US\$5300. At the same time sales of ICRAF publications earned about US\$2000.

There were about 100 requests for Information on agroforestry that were answered (not including requests for ICRAF publications). Half of these were from developing country scientists and Institutions.

On April 23, 1981 a "Consultative Meeting between officers of the Government of Kenya and ICRAF" was held in Nairobi. The aim was to inform Ministry officials about ICRAF's work and to discuss ICRAF's role in Kenyan development. A total of 15 high level officers attended, representing the Office of the President (2), Ministry of Agriculture (5), Ministry of Economic Planning and Development (1), Ministry of Energy (1), Ministry of Environment and Natural Resources (1), Ministry of Foreign Affairs (1), Ministry of Higher Education (1), Ministry of Information and Broadcasting (1) and the University of Nairobi (2).

The plans developed in 1979/80 to cooperate in the publication of an "agroforestry Systems Journal", published by Martinus Nijhoff Ltd. in Holland, was formalized during 1981. ICRAF will provide general professional advice to the publishers. Dr. Lundgren is a Managing Editor, acting as Deputy Chief Editor, and Drs. Huxley, Nair, Raintree

and Torres are members of the Editorial Board. The first Issue of the journal will be published in the first half of 1982.

During 1981, three issues of ICRAF's Newsletter were published and distributed to approximately 1500 recipients worldwide. An extra 500 copies were printed of the July issue and distributed to

delegates of the UN Conference on New and Renewable Sources of Energy held in Nairobi in August, 1981.

A separate list of ICRAF staff publications is attached as an appendix to this report.

4.2. ICRAF Seminars and Workshops

ICRAF arranged and hosted a "Consultative Meeting on Plant Research and Agroforestry" on April 8-15, 1981. Dr. Peter Huxley organized the meeting which was held at ICIPE's premises "Duduville" just outside Nairobi. Financial support was provided by the Swiss Development Corporation. Forty-five scientists from all over the world participated. A total of 25 papers and eight poster papers were presented under the following four headings:

- ~ Plant associations in agroforestry land-use practices,
- The systems approach
- Aspects of plant science applicable to the management of agroforestry systems
- Poster papers

Four working groups were created to consider and give recommendations on the following subjects:

- the analysis of plant-to-plant interactions
- ecological considerations
- plant types for agroforestry
- plant management considerations in agroforestry systems.

Two field excursions to study various uses of trees in the local land-use systems were arranged, one to the Kiambu District (wet, high potential highlands) and one to Machakos District (semi-arid, low-to medium potential uplands).

The proceedings from the meeting will be published during 1982.

A "Workshop on Agroforestry in the Afirican Humid Tropics" was held in Ibadan, Nigeria, April 27-May 1, 1981. It was jointly organized by UNU and IDRC and cosponsored by ICRAF, IITA, the University of Ibadan and the Federal Department of Forestry, Nigeria. The meeting was attended by Dr. Filemon Torres, representing ICRAF. A paper entitled "An identity and a strategy for agroforestry" by Prof. Howard Steppler was presented. The proceedings of the Workshop will be published by UNU in 1982.

The proceedings from the "Kenya National Seminar on Agroforestry" (jointly organized by ICRAF and the University of Nairobi 1n November 1980) were edited by Louise Buck on secondment from the Beijer Institute (with advice and assistance from Dr. P.A. Huxley). It came from the press in December 1981. The 300 copies of the 630 page publication are already committed to seminar participants and various institutions and organizations in Kenya. Due to the high demand for the proceedings ICRAF has applied for money from a donor to print another 1000 copies for wider distribution. In the meantime, ICRAF, together with the Beijer Institute, is planning to produce a small booklet on "Agroforestry in Kenya" (approx. 100pp) based on the presentations to the seminar.

In the very closing days of the year, ICRAF finally got a confirmation from DSE of Germany that they will co-sponsor the "International Workshop on Professional Education in Agroforestry". This workshop, which has been planned since late 1979, will now be held in December 1982.

4.3. Diagnostic methodology development

In view of the strategic importance attached by ICRAF to the development of an understanding and capacity on how to deal with agroforestry as a land use system in research and development, a somewhat more detailed account is given here of the work done during 1981 on the development of a Diagnostic Methodology. This project is the major exponent for the focus developed by ICRAF and much of our resources during 1981, including staff time, have been diverted to it.

This work can be divided into four roughly chronological phases:

1. Conceptual Development phase (January-April)
2. Early Implementation phase (March - October)
3. First Ex-Kenya Applications (August-November)
4. Programme Development phase (September-December)

1. Conceptual Development Phase

The concept of a diagnostic approach to agroforestry was first formally expressed in Howard Steppler's paper on "*A Strategy for the International Council for Research in Agroforestry*" in January 1981. This was preceded by intensive staff discussions of a draft version of the strategy prepared in late 1980, followed by several in-house papers dealing with general conceptual issues relating to the approach, including disciplinary contributions to a checklist for survey of land use systems (see separate list of in-house documents on the development of a Diagnostic Methodology).

The two principal elements of the approach, as initially formulated, were a) the need for a multidisciplinary team of scientists to deal adequately with complex AF land use systems, and b) the concept of the "cycle of technology development" which emphasised the need to base the design and development of AF technology on a sound diagnostic analysis of constraints and associated AF potentials in existing land use systems.

There then followed a series of implementation flowcharts and working papers which explored various tactical approaches to implementing the strategy. Out of this emerged a more-or-less coherent approach which received official sanction from ICRAF's Board of Trustees in April, 1981, followed closely by a public presentation of the diagnostic strategy in a paper presented to the Consultation Meeting on Plant Research and Agroforestry in April (Steppler and Raintree, "*The ICRAF Research Strategy in Relation to Plant Science Research in Agroforestry*").

2. The early implementation phase

Planning for the initial development of the diagnostic methodology centered around the identification of a suitable field research site in Kenya. After intensive staff discussions and field visits, the Eastern Kanzala area of Northern Division, Machakos, was selected and survey activities were initiated. As a follow-up to field research activities by two students from the Agricultural University of Wageningen (cf. page 20), Remko Vonk joined the ICRAF diagnostic field team 1n October 1981 on an arrangement with Wageningen University. To take advantage of the AF data base generated in the area by the Wageningen students, the Kathama site was selected as the focus of diagnostic research activities in the Kanzalu area.

Plans were also made during this period for an expansion of the number of field sites for further development of the methodology through application to five sites 1n Kenya for agroforestry demonstrations selected in connection with the MazIngira Institute's "Agroforestry Plots for Rural Kenya Project". Additional funding and collaborative support for an adjunct "Agroforestry Tree Seed Project" were successfully solicited from CIDA and CARE Kenya, and arrangement were made to hire Louise Buck as Seed Project Co-ordinator on a consultancy basis to coordinate ICRAF's diagnostic inputs to these projects (beginning in November 1981).

3. The first Ex-Kenya Applications

Meanwhile, following up on visits to Venezuela by Drs. Huxley and Torres in 1980, Dr. Torres attended a seminar on agroforestry held at Agna Santa Venezuela 1n August 1981. At this seminar he presented the ICRAF diagnostic approach and organized a second seminar to be held in November to apply the diagnostic methodology to four case study areas in Venezuela in collaboration with participating Venezuelan Institutions.

In November 1981, Dr. Torres returned to Venezuela with Dr. Ralntree to participate 1n a series of field research activities leading to a seminar at Merida. At this seminar a set of diagnostically-based

designs for AF technology research and development efforts at the four case study sites were identified (to be carried out by Venezuelan institutions).

Drs. Torres and Raintree also visited the Pucallpa area of the Peruvian Amazon and conducted a preliminary "project identification diagnosis" in collaboration with a Peruvian institution (INIPA). Talks based on this diagnosis, with representatives of the institution in Lima followed by further discussions with representatives of CIAT in Cali, Colombia, resulted in a decision to formulate a project to develop AF land management technologies appropriate to the Peruvian Amazon (cf. Section 4.5).

The South American mission contributed significantly both to the development of a workable collaborative approach to diagnostic methodology applications and to the wider professional acceptance of the ICRAF strategy. Subsequent methodological developments have benefited a lot from the practical experience gained in this mission. The mission also aided the goal of diagnostic team integration and firmly established the diagnostic approach as the basis for formulation of collaborative projects.

4. Programme Development Phase

In September, 1981, discussions were initiated leading to the development of a full programme of work for the short and medium term activities of the Council. In the new Programme of Work the diagnostic approach is institutionalized as a Project within the AF Systems Research and Evaluation Programme coordinated by Dr. Raintree (cf. section 5, page 26). The various diagnostic and design activities carried out in Kenya are organized as subprojects under the overall project leadership of Dr. Raintree. Ex-Kenya diagnostic applications will henceforth mainly fall under the Collaborative and Special Projects Programme coordinated by Dr. Torres.

The major differences in the overall conception and application of the diagnostic approach at the end of the *year* as compared with the beginning of the year are as follows:

- a) While the strategy emphasis on the development of widely extendable *methodologies* remains paramount, there is greater explicit acceptance, in response to feedback from both donors and collaborators, of ICRAF's Inevitable *technology* development role vis-a-vis the diagnosis *and* design of relevant AF technologies and technology development projects.
- b) The "cycle of development" concept has been preserved In essence as the cornerstone of the ICRAF diagnostic methodology, but It has been modified somewhat in detail to create scope for more explicit recognition of necessary *diagnostic, design, farm trials* and *field station* phases Implicit in a full implementation of the "cycle of development" strategy.
- c) The focus of team integration efforts (and difficulties) has shifted from the level of abstract discussions of theoretical issues to the working out of a team approach to the solution of actual diagnostic and design problems in the context of concrete field application projects. While 1981 has seen real progress 1n the development of a workable diagnostic methodology, the effort has been severely constrained by the delayed arrival of seconded staff to roundout the multidiscipHnary field research team.

As we more into 1982, the prospect of achieving the stated goal of developing and publishing a working manual of diagnostic procedure by the end of the year seems reasonably bright. The success of this effort will be largely determined by the successful recruitment and integration of a full interdisciplinary team.

4.4. Field Station Development

Although ICRAF is a Council/Secretariat type of organization with neither a mandate nor resources to carry out Its own large-scale field research, it has been felt necessary for a long time to have a small field station for limited trials and for demonstration purposes.

In the early part of 1981 discussions were therefore initiated with appropriate Kenyan authorities to identify and to obtain the right of use of a piece of land for this purpose. Through the generous

cooperation from the Government of Kenya a 40-hectare plot was subsequently released to ICRAF 1n August for such development.

The land is situated in the Machakos District, 70Kms south-east of Nairobi. It is appropriately located in a rural area with many land-use problems suggesting an important role for agroforestry. It is a semi-arid (700mm rain/annum) highland environment with moderately good but erodible soils. Thorny bushes and small trees dominate the vegetation. The station occupies a slope from ridge down to valley bottom which gives It* in view of Its modest size, a rich array of micro-env1ronments.

A special grant of Can\$40,000 from the Canadian International Development Authority enabled a quick initiation of the development of the station.

Mr. P.N. wambugu of Kenya was employed as a Fam Manager in August 1981. An area of 3 hectares was cleared, fenced and planted with various multipurpose tree species (see below). A temporary shed was erected and construction of a small permanent office/field laboratory was started. Both drinking water and irrigation water have been made available and electricity and telephone connections to the site are expected to be ready in early 1982. A detailed soil and vegetation survey has been carried out prior to any other developments.

The station will be used mainly for the following purposes:

- to develop methodologies for agroforestry system and component evaluation,

- to test limited technology components, identified as promising in our diagnostic methdology work in Machakos,

- to establish agroforestry demonstration plots for training and information activities.

One research project was initiated already in 1981, "Evaluation of multipurpose tree species for agroforestry". A number of plots were planted with potentially useful multi-purpose tree species. These were:

Group A

Aoacia atbida
Atriplex nummularia
Balanites aegyptia
Leuaaena leucocephala (Peru)
Leuaaena leuaoaephala (K-8)
Prosopis juliflora;

Group B

Aaaaia cyanophylla
A. elata
A. nilotica
A. Senegal
Ca88ia eiamea
*Ex*ythvina abyssinia*
Grevillea robusta
Leuaaena leuoocephala (Cunningham)
Parkinsonia aauleata
Persia ameriaana
Prosopis pallida
Simmondeia chineneis

&

Plants of 'Group A' are in macro plots at uniform espacement along the rows, but progressively varying distances between the rows with a total of 5-8 such rows. Plants of 'Group B' are at a uniform 4x5 m espacement, 12 plants of each species.

A further range of species will be planted out, according to the availability of seeds in the early part of 1982.

The initial observations and measurements on these species will include:

- 1) survival
- 2) early growth characteristics (form, height, growth, foliation pattern)
- 3) phenology
- 4) nodulation (for the leguminous species)
- 5) mycorrhizal association
- 6) rooting characteristics (non-destructive observations on a sample).

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Further information could be gathered on responses to various management factors as the plants mature.

Or. P.K.R. Nair is responsible for the overall coordination of the Field Station development.

4.5. Ex-Kenya project planning

During the year, several trips were made by ICRAF staff members outside Kenya with the aim of identifying the feasibility and scope of joint agroforestry research projects with various research institutes, both national, regional and international. With the development of the new Programme of Work, a long term aim and a structure were identified for this type of projects through the establishment of a separate "Collaborative and Special Projects" programme which is being coordinated by Dr. F. Torres (cf. section 5). This programme aims at the building up of an ecologically and geographically well stratified network of collaborative agroforestry research projects. Institutions with an interest in and a professional and infrastructure! capacity to carry out agroforestry R & D will be identified. Together with these institutes ICRAF will then *carry* out a diagnostic survey and, based on this, design relevant research projects which the local institutes implement. It is envisaged that in three to four years time about 20 such projects will have been initiated with active ICRAF participation in the design and project planning, phase. From case to case, and if requested to do so, ICRAF will assess whether to have an input in the Implementation of the projects.

The following summarizes what has been done in 1981.

On the African continent most efforts have been concentrated on discussions with IITA and ILCA on the development of a joint project in Nigeria. A possible project was initially discussed by representatives from ICRAF (Dr. Torres), IITA and IDRC at the UNU Workshop on Agroforestry in Ibadan in April/May 1981. The original idea was to follow-up on an agroforestry research project supported by IDRC at IITA in 1978-1981. Two subsequent meetings were held in Ibadan, in June (attended by Drs. Nair and Torres) and October (Drs. Lundgren and Torres), during which the Lowland Humid Tropics group of ILCA based at IITA became involved and a tripartite cooperative memorandum was worked out. By the end of the year, ICRAF respectively IITA/ILCA worked out project

proposals with the aim of reconciling them into one proposal to be submitted to IDRC for funding in early 1982.

Several contacts have been established in Latin America. Dr. Torres visited EMBRAPA in February to discuss the reinitiation of activities leading to a cooperative effort. It was concluded that such activities would be, in principle, focused in the Cerrado region (Savannah) and that an ICRAF mission could come to Brasil in November, 1981, to initiate the planning process. EMBRAPA suggested later that the mission be postponed for 1982.

To explore the possibility of establishing relationships which could enhance the development of cooperative projects, *Dr. Torres* in August visited three institutions based in Latin America: IICA, CATIE and CIAT. Based on discussions held with their leadership, independent documents were drafted with each of them, defining objectives and scopes for interinstitutional cooperation. In the case of CIAT a basis was also established for a joint endeavour in the Peruvian Selva in cooperation with INIPA and IVITA.

Drs. Raintree and Torres subsequently visited Peru in October to discuss with INIPA's/IVITA's authorities the possibilities for collaborative projects, as well as to survey the Pucallpa area in the Peruvian Selva as a potential site for IVITA/CIAT/ICRAF research project. Based on the potential role for agroforestry in the Selva region and on the interest of the Peruvian institutions it was agreed, in principle, that ICRAF would cooperate in the formulation and eventual implementation of projects in two areas (Pucallpa and Yurimaguas), in cooperation with CIAT and, possibly, the North Carolina State University.

Dr. D. Nygaard, Leader of the Fanning Systems Programme, and Dr. B. Somar Leader of the Forage Improvement Programme, from ICARDA visited ICRAF in October to discuss the scope to which formal cooperative projects can be established. Potential project regions were discussed and it was agreed that an ICRAF mission would go to Aleppo to look into the suggestions that emerged at the meeting.

At ICRAF's Programme Committee in Nairobi in November, a discussion was held with Dr. J. Madamba, Director-General of SEARCA, on the development of the Collaborative Programme in the SE Asian region. It was agreed that activities could be initiated in 1982 on the basis of SEARCA's Institutional Infrastructure in the ASEAN region. In principle, an ICRAF exploratory mission will go to Manila in April or May 1982 to participate along regional Interested Institutions in a Workshop to discuss the Diagnostic and Design Methodology. Case-studies, which will become potential project sites, will then be worked out and presented at a Seminar on Agroforestry organized by SEARCA, which will take place in August, 1982.

4.6. Other programme activities

Several projects and activities to be started in 1982, for which funding has been secured or reasonably safely indicated, were actively planned during 1981.

The Ford Foundation Regional Office in Nairobi has agreed to sponsor two young East African scientists or development officers in 1982 to spend six months with ICRAF for on-the-job training. The idea is that the students, by actively working together with ICRAF's multidisciplinary team of scientists, will acquire an understanding of how to identify agroforestry potentials and land-use problems, which they then can use to increase the efficiency of research and development in their "home" Institutes. Applications were invited from Institutions in Kenya and Tanzania and by the end of the year, five prospective candidates had announced their interest. Early 1982 the selection of two students will be made and they are expected to extend the last six months of 1982 with us.

In October, a meeting was held with representatives of the British American Tobacco Co. (Kenya) Ltd, - BAT. It was agreed that a joint ICRAF/BAT Workshop on cash-crop based agroforestry systems should be arranged in 1982. The problems of end potentials to improve, combined production of food, fuelwood and tobacco by small and medium scale farmers will be the main theme.

Preliminary planning was carried out for the establishment of international networks of scientists to work, through correspondence and "mini-workshops",

on the development and assessment of research methodologies in agroforestry. Three initial topics for such networks have been identified, viz.

- on field experimentation and data handling in AF research
- on tree/crop interactions
- on methods for economic analysis of AF systems.

In January/February 1981 two Dutch students from the Agricultural University of Wageningen completed their field work in Machakos. The work was supervised by Dr. Huxley, and it involved "The role of trees in farming systems in Machakos" (by Hans Gielen) and "An inventory of trees and shrubs in N. Division of Machakos District" (E. Fliervoet).

At the "UN Conference on New and Renewable Energy Sources" in Nairobi]
in August, ICRAF circulated two papers on its activities at the NGO
forum. A poster display was arranged and 500 copies of ICRAF's
Newsletter No. 5 were distributed. Drs. Nair and Raintree participated
in various conference activities and meetings.

Drs. Stepler and Huxley took part in a short review committee on the
report prepared by IDRC/Ugandan Government on the restructuring of the
Ugandan Agricultural Research Services.

Dr. Huxley took part (1 day) in the Kenya Government/ISNAR Working Group
to propose revisions for the Kenya Agricultural Research Services.

A number of display boards were assembled during the year for use as
training materials and at meetings.

4.7. Staff travel and participation in meetings

ICRAF staff made several important duty trips outside Kenya during 1981.
Professional meetings were attended, both inside and outside Kenya.
This is summarized below:

<u>Staff member</u>	<u>Time</u>	<u>Activity</u>
1. Mr. K. Gatamah	Feb/Mar	Familiarization visit to and discussions with IDRC and CIDA in Ottawa, and IIE in New York.

Staff member	Time	<u>Activity</u>
2. Dr. W. Hetsch	Mar.	- Participation in CATIE/GTZ Agroforestry Seminar for GTZ field personnel in Turrialba.
3. Dr. P. Huxley	Oct.	<ul style="list-style-type: none"> - Meetings at FAO, Rome with ADG's Agriculture and Forestry. - Participation in <u>National Academy of Science's "Fast-Growing Nitrogen fixing Trees"</u> organizational meeting in Washington, D.C. Oct. 5-7. - Meeting with USAID officials (together with Dr. Lundgren). - Visits to and discussions at the Commonwealth Forestry Institute and the Land Resources Development Centre UK.
	Nov.	<ul style="list-style-type: none"> - Participation in <u>"FAO/IAEA Consultants Meeting on the use of Nuclear Techniques in Improving Fertilizer and Water Management Techniques for Tree Crops"</u> in Vienna, Nov. 9-13. <p>Visit to and discussions at the International Institute of Applied Systems Analysis, Laxenburg, Austria.</p>
	Dec.	<ul style="list-style-type: none"> - Participation in USAID <u>"Workshop on Energy, Forest and Environment"</u> in Nairobi, Dec. 7-11 (together with Dr. Lundgren).
4. Mr. R. Labelle	Aug.	- Visit to various information centres in the UK, France and The Netherlands (cf. page 8).
5. Mrs. L. Majisu	Aug/Sep.	- Participated in <u>"FAO Course in Agricultural Librarianship"</u> in Wales, Aug. 8-Sep. 5.
6. Dr. B. Lundgren	Aug.	- Visits to and discussions With GTZ (Eshborn) and SDC (Berne), and with Board Members von Maydell (Hamburg) and Bosshard (Zurich) on way to Nairobi.

Staff member	<u>Time</u>	<u>Activity</u>
	Oct.	<ul style="list-style-type: none"> - Visits to and discussions with Dutch Min. of Development Cooperation in The Hague, USAID (with Dr. Huxley) and the World Bank in Washington, D.C., IDRC and CIDA in Ottawa, and IITA (with Dr. Torres) in Nigeria. - Participation in USAID "<u>Workshop on Energy, Forest and Environment</u>" in Nairobi, Dec. 7-11 (together with Dr. Huxley). - Visits to and discussions with various Ministries (Research and Technology, Cooperation, and Foreign Affairs) and research organizations (ORSTOM, CTFT, IEMVT) in France, and to SDC in Berne.
7. Dr. P.K. Nair	Jun.	Visit to and discussions at IITA, Ibadan, Nigeria (together with Dr. Torres, cf. page 17).
	Aug.	Participation in " <u>UN Conference on New and Renewable Sources of Energy</u> ", Nairobi, Aug. 10-21.
	Nov.	Visit to GTZ-sponsored "Project Agropastoral" in Rwanda (trip sponsored by DSE).
8. Dr. J. Raintree	Aug.	<p>Participation in "<u>UN Conference on New and Renewable Sources of Energy</u>", Nairobi, Aug. 10-21.</p> <p>Participation in discussions of possible collaborative projects with Peruvian institutions (with Dr. Torres).</p>
	Oct.	Project identification mission to Pucallpa in the Peruvian Amazon (with Dr. Torres).
	Nov.	<p>Diagnostic mission to four project areas in Venezuela to prepare case study materials for Venezuelan Agroforestry Seminar (with Dr. Torres).</p> <p>Participation in <u>MARNRICRAF Agroforestry Seminar</u> at Merfda, Venezuela, Nov. 16-19 (with Dr. Torres).</p>

Activity

- Discussion at CIAT on possible collaborative activities following Pucallpa diagnosis (with Dr. Torres).
- Discussions with NORAD (Oslo), ODM (London), IDRC and CIDA (Ottawa), and with French Belgian and Dutch Aid Agencies.
- Participating in ISNAR Board meeting, discussing with UNDP representative
- Meeting with EMBRAPA (Brazil) to discuss reinitiation of collaborative activities.
- Participation in NCKK Conference on "Irrigation Development in Arid and Semi-arid Areas of Kenya", Limuru, Kenya, 24th
- Participation in UNU Workshop on "Agroforestry in the Humid Tropics" held at Ibadan, and discussion with IITA and IDRC on collaborative projects, Ibadan, 27 Apr. - 1 May.
- Meeting at Ibadan to formalize tripartite collaborative agreement with IITA and ILCA (together with Dr. Nair).
- Visits to IICA, CATIE and CIAT to explore possibility of establishing collaborative relationships.
- Participation in Workshop on Diagnosis of Land Use Systems organized by MARNR in Agua Santa, Venezuela, 25-28.
- Participation in 32nd Annual meeting of the European Association of Animal Production, Zagreb[^] Yugoslavia, 30 Aug. - 1 Sep.
- Discussion with Peruvian institutions (INIPA, IVITA and INFOR) on possibilities for developing collaborative projects (with Dr. Raintree).
- Identification Mission to the Pucallpa zone in the Peruvian Selva (with Dr. Raintree).
- Diagnostic Mission to four zones in Venezuela, as preparation for a National Agroforestry Seminar (with Dr. Raintree).

Participation in MARNR/ICRAF Agroforestry Seminar held at Merida, Venezuela, 16-19.

Discussion at CIAT, Colombia, on avenues for institutional cooperation in research project at Pucallpa, Peru (with Dr. Raintree).

4.8. Visitors to ICRAF

During 1981 several persons called upon our office in Nairobi to discuss matters of mutual interest. It would take too long to enumerate all casual visitors - below *are* listed only those who came from outside Kenya on official *or* pre-arranged visits to discuss concrete topics, or to request specific information:

Prof. K. Adeyoju	Addis Ababa, Ethiopia
Dr. S. Briceñom	MARNR, Venezuela
Dr. G. Dion	CIDA, Canada
Prof. J. Fries	University of Agriculture, Sweden
Dr. G. Gritzner	National Academy of Sciences, USA
Mr. L.F. Guerrero	MARNR, Venezuela
Mr. T.J. Goering	World Bank, Washington, D.C., USA
Mr.P. Henry	ODA, United Kingdom
Dr. J.N.R. Kasembe	Tanzania Agricultural Research Organization, Tanzania
Mr. R. Kemp	ODA, United Kingdom
Dr. G. Lessard	IDRC, Canada
Mr. E.M. Mnzava	Forestry Division, Tanzania
Prof. F. Mergen	Yale University, U.S.A.
Dr. B. Nestle	Private Consultant, U.K.
Dr. D. Nygaard	ICARDA, Syria
Mr. Pan Chih-Kang	Chinese Academy of Sciences, China
Dr. B. Somaroo	ICARDA, Syria
Mr. J. Spears	World Bank, Washington, D.C., U.S.A.
Dr. E. Terry	IITA, Nigeria
Dr. C. Weiss, Jr.	World Bank, Washington, D.C., U.S.A.
Dr. R. Williams	CIDA, Canada
Dr. H. Zandstra	IDRC, Canada

ICRAF also received visits by teams from various organizations, e.g.:

- Agricultural Division of the Swedish International Development, Authority (SIDA - 8 persons).
- International Fund for Agricultural Development, (IFAD - 5 persons).
- Thai/HAMP/UNDP - project in Thailand {4 persons}.

5. PROGRAMME PLANS AND PROSPECTS

From November 1981, ICRAF gradually started to adapt its work to the structure proposed in the new Programme of Work. It was in principle approved by ICRAF's Programme Committee in late November and, although formal approval will have to await ICRAF's Board of Trustees' meeting in March 1982, it is appropriate here to outline the structure and main ideas.

The following were considered when developing the programme:

- how ICRAF, in relation to its size and mandate can most efficiently make a significant contribution to initiate, promote and professionally support research for development of agroforestry land use systems and technology,
- the need for a logical framework for the Council's medium term work (3-5 years) which guarantees continuity and consistency while at the same time allowing flexibility,
- the possibility for "recipients" of ICRAF's "products" and donors to assess the relevance of our plans to their needs and policies.

Based on these considerations, and on the focus and strategy described in section 2 of this report, three major objectives were identified for the Programme of Work over the coming three to five years:

- the development of an interdisciplinary capacity and methodology to assess land-use systems' constraints and to identify agroforestry potentials to solve these constraints,
- the systematic collection and evaluation of knowledge and experience of agroforestry technologies, and the development of methods on how to study them,
- the building-up of an efficient programme for dissemination of information, methods and capacities to scientists, development planners and institutions in developing countries.

To achieve these objectives a Programme of Work comprising seven work programmes has been created:

<u>Programme</u>	Co-ordinator	Areas of activities
1, Management & Administration	Director Secretary/Treasurer	Programme planning and coordination Fund raising Administration
2. Information Services	Mr. R. Labelle	Information request service Documentation Library Publications
3. Training and Education	Dr. P. Huxley (until Training Officer is recruited)	Training courses in AF research and technology Development of training material Fellowships and on-the-job training Curricula development for AF education
4. AF Systems Research and Evaluation	Dr. J. Ralntree	Development of interdisciplinary methods to study and develop AF Systems Inventory and evaluation of existing AF systems
5. AF Technology Research and Evaluation	Dr. P. Huxley	Reviewing the potential role of AF technologies to satisfy basic needs and contribute to social and economic development Development of methods to study and evaluate AF technologies and components of AF systems.
6. Field Station	Dr. P.K.R. Nair	Mainly for support of other programmes, e.g. field research to develop methods, demonstration plots for training and PR.
7. Collaborative and Special Projects	Dr. F. Torres	Creation of an international network of agroforestry research and development projects in collaboration with research Institutions in developing countries Dissemination and testing of ICRAF's interdisciplinary diagnostic methodology,

Under each programme, a number of projects and activities have been formulated, each with its own aims, budget, time-plan and project responsible scientist.

ICRAF does not have growth of the organization as an aim in itself but rather quality of the work and efficiency in disseminating our results. In order to carry out our Programme of Work to achieve these aims we do, however, need increased resources over the coming years. It is envisaged that an optimum level of operation, to guarantee impact quality and continuity would require a core staff of senior scientists and administrators of around 12-15 people, or, expressed in financial terms, an annual budget of about US\$2.5-3 million (approximately double the present). With the concrete Programme of Work now available ICRAF has reasonably high hopes of achieving this within the coming few years.

SCIENTIFIC AND SUPPORT STAFF - 1981

NAME	POSITION HELD	DATE OF RECRUIT-MENT	DATE OF COMPLE-TION
(a) SENIOR STAFF			
Dr. G. Lundgren	Director	Sep. 1981	
Dr. H.A. Steppler	Interim Director-General	Sep. 1980	May 1981
Dr. P.A.Huxley	Senior Research Scientist	Mar. 1979	
Dr. P.K.R. Na1r	Senior Research Scientist	Nov. 1978	
Dr. F. Torres	Senior Research Scientist	May 1979	
Mr. R. Labelle	Information Sciences	Jul. 1981	
Mr. K. Gatamah	Secretary/Treasurer	Dec. 1980	
Dr. J.B.Raintree	Post Doctoral Fellow	Jan. 1981	
Dr. W. Hetsch	Research Scientist	Jan. 1981	Apr. 1981
Ms. t. Buck	Project Consultant	Nov. 1981	
(b) SUPPORT STAFF			
Ms. L. Majisu	Librarian/Documentalist	Mar. 1979	
Mr. P.M. Wambugu	Research Farm Manager	Aug. 1981	
Mr. P. Kouko	Accountant	Oct. 1979	Dec. 1981
Mrs. F. Mboya	Executive Secretary	Nov. 1978	
Ms. A. Nderitu	Secretary	Jul. 1978	
Ms. C. Kanyeki	Secretary	Apr. 1980	
Ms. W. Kuria	Secretary	Oct. 1979	
Mrs. B. Kibe	Secretary	Jun. 1981	
Ms. J. Ngeene	Receptionist/Telex Operator	Mar. 1980	
Mr. F. Gitau	Clerical Officer	Jul. 1981	
Mr. P. Waweru	Driver/Messenger	Jan. 1979	
Mr. D. Mwendwa	Messenger	Feb. 1979	Jul. 1981
Mr. T. Ivati	Messenger	Jul. 1981	
(c) OTHERS			
R. Vonk) Dutch students from Wageningen University		
H. Gielen			
P.M.M. Fliervoet)			

PUBLICATIONS BY ICRAF AND ICRAF STAFF DURING 1981

- Huxley, P.A. (1981). Agroforestry - developing a new research discipline, pp. 56-68 In L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF, Nairobi.
- Huxley, P.A. (1981). Experimental work with trees and shrubs for use in agroforestry systems, pp. 75-80 in L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF, Nairobi.
- Huxley, P.A. The place of fast-growing nitrogen-fixing trees in agroforestry - discussion paper presented to National Academy of Sciences Programme Planning Meeting, 5-7 October, 1981, Washington. ICRAF, Nairobi.
- Huxley, P.A. Some critical topics for plant research in agroforestry, pp. 85-92 In L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF, Nairobi.,
- Huxley, P.A. Phenology of woody perennials and annual crop plants with reference to their management in agroforestry systems, in P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Huxley, P.A. The role of trees in agroforestry. In P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Huxley, P.A. Some characteristics of trees to be considered in agroforestry In P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Huxley, P.A. Woody plants and landuse. Paper presented to FAO/IAEA Consultative Meeting for the use of Nuclear Techniques in Improving Fertilizer and Water Management Technologies for Tree Crops, 9-13 November, 1981, pp. 17, Vienna (to be published in IAEA/FAO Tech. Doc.)
- Huxley, P.A. (ed.). Proc. of Consultative Meeting on Plant Research and Agroforestry, 8-15 April, Nairobi (in preparation). (Mimeod report available) ICRAF, Nairobi.
- ICRAF, International Council for Research in Agroforestry (ICRAF), pp. 13. ICRAF, Nairobi (Mimeod.) 1981.
- ICRAF, Fuelwood or food? Why not have both? Paper submitted to U.N. Conference on New and Renewable Sources of Energy; 10-21 August, 1981. Nairobi 100/NG0. pp. 5. appendix, ICRAF, Nairobi, Mimeod.
- Nair, P.K.R. Soil management in agroforestry, pp. 251-277 in L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF* Nairobi.
- Nair, P.K.R. Plant association and agroforestry landuse practices with coconuts and other tropical plantation crops in P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Raintree, J.B. Conservation farming with multipurpose tree legumes: an under-developed branch of tropical agroforestry research, pp. 107-122 | In L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF, Nairobi.

- Raintree, J.B. Bioeconomic evaluation of agroforestry cropping systems in P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Steppier, H.A. An Identity and a strategy for Agroforestry. In Proceedings from IMF Workshop on AF In the African Humid Tropics, Ibadan, April, 1981. (In preparation).
- Steppier, H.A. and Raintree, J.B. The ICRAF research strategy in relation to plant science research in agroforestry in P.A. Huxley (ed.) "Plant Research and Agroforestry", ICRAF, Nairobi.
- Torres, F. The role of livestock in small agroforestry systems, pp. 443-472 in L. Buck (ed.) "Kenya National Seminar on Agroforestry", ICRAF, Nairobi (1981).
- Torres, F. 1981. Metodologia para el analisis de sistemas de uso de la tierra. In: Informe del Taller de Trabajo sobre Agrosilvicultura. MARNR, Venezuela: ODEPRI/IT/T53, pp. 17-26.
- Torres, F. 1981. Principios y Conceptos de Agroforesteria. In; Memorias del Seminario sobre Aplicaciones de la Agroforesteria en Venezuela organized by MARNR and CIDIAT in Merida (Venezuela), November, 16-19.
1981. Proceedings of the Kenya National Seminar on Agroforestry 12-22 November, 1980, Nairobi (Ed. L. Buck) pp. 638. ICRAF, Nairobi.

IN-HOUSE WORKING PAPERS RELATING TO THE DEVELOPMENT OF THE DIAGNOSTIC
METHODOLOGY

1. Classification of plant aspects of agroforestry systems, P.A. Huxley, 1979.
2. An agroforestry "logic" diagram (for optimising plant components in AF systems). 1979.
3. Research in agroforestry systems: a discussion paper. F. Torres, October, 1980.
4. Draft strategy for ICRAF. H.A. Steppler, September, 1980.
5. Aide-memoire for planning agroforestry in terms of land resource development. P.A. Huxley, February, 1980.
6. Preliminary checklist of major diagnostic variables for survey of Indigenous farming systems and agroforestry practices. J.B. Ralntree, November, 1980.
7. Livestock related checklist. F. Torres, January 1981. |
8. Checklist of the role of trees in farming systems. W. Hetsch, January, 1981. 1
9. Survey of Indigenous farming systems and agroforestry practices (checklist). P.K.R. Nair, January, 1981.
10. A strategy for the International Council for Research in Agroforestry. H.A. Steppler, January, 1981.
11. Flowchart of proposed Implementation scheme for ICRAF research strategy. (Working Paper No. 1). J.B. Ralntree, January, 1981.
12. ICRAF field research methodology (Working Paper No. 2). J.B. Ralntree February, 1981.
13. The role of trees in agroforestry. P.A. Huxley, February, 1981.
14. Explanation for the "Agroforestry logic" diagram (1979), P.A. Huxley, February, 1981.
15. ICRAF diagnostic methodology: some additional suggestions to the flowchart of P. Huxley. W. Hetsch, February, 1981.
16. ICRAF diagnostic methodology (Working Paper No. 3). J.B. Ralntree, February, 1981.
17. ICRAF diagnostic methodology: diagnostic evaluation of agroforestry-related constraints and potentials. (Working Paper No. 4). J.B. Ralntree, March, 1981.
18. Machakos diagnostic report No. 1. F. Torres and J.B. Ralntree, March, 1981.
19. The ICRAF research strategy in relation to plant science research in agroforestry. Paper presented to the Consultative Meeting on Plant Research and Agroforestry. Nairobi. H.A. Steppler and J.B. Ralntree, April, 1981.

20. Some characteristics of trees to be considered in agroforestry. Paper presented to the Consultative Meeting on Plant Research and Agroforestry. Nairobi. P.A. Huxley, April, 1981.
21. Bioeconomic considerations in the design of agroforestry Intercropping systems. Paper presented to the Consultative Meeting on Plant Research and Agroforestry. Nairobi. J.B. Ralntree, April, 1981.
22. Some observations about landuse and agroforestry In Machakos District: a first step diagnostic concerning the role of trees. W. Hetsch, April, 1981.
23. Preliminary checklist to describe the structure and function of existing landuse systems (step 2 of strategy's flow diagram). F. Torres, May, 1981.
24. Exploratory survey of household landuse systems. J.B. Ralntree, May, 1981.
25. Preliminary diagnosis of agroforestry related landuse constraints and potentials in the eastern Kanzalu area of Machakos: 1. household food and cash subsystems. J.B. Ralntree. July, 1981.
26. Checklist for diagnosis of existing landuse systems pliable to an agroforestry approach. F. Torres and J.B. Ralntree. July, 1981.
27. Elaboration de una metodologla comun para el analisis de los casos de estudio. Taller de Trabajo sobre Agrosilvicultura. Proceedings of a seminar held In Agua Santa, Venezuela. F. Torres, August, 1981.
28. Agroforestry problem Identification survey. J.B. Ralntree. September, 1981.
29. ICRAF agroforestry tree seed project proposal. J.B. Ralntree. September, 1981.
30. Implementation flowchart for comparing agroforestry development possibilities with existing landuse. P.A. Huxley. September, 1981.
31. Preliminary diagnosis of landuse problems and agroforestry potentials in northern Mbere Division, Embu District, Kenya. J.B. Ralntree. October, 1981.
32. Agroforestry systems research and evaluation programme paper. J.B. Ralntree. October, 1981.
33. Diagnostic methodology development and application project paper. J.B. Ralntree. October, 1981.
34. ICRAF Programme of Work. B. Lundgren and ICRAF staff. November, 1981.
35. Preparation phase report. Agroforestry Plots for Rural Kenya Project. Mazngira Institute. L.E. Buck. November, 1981.
36. Woody plants and landuse. Paper presented to FAO/IAEA Consultative Meeting on the Use of Nuclear Techniques In Improving Fertilizer and Water Management Techniques for Tree Crops. P.A. Huxley. November, 1981.

37. Agrosilvlcultura: principios y conceptos. Seminario sobre Aplicacion de la Agrosilvlcultura en Venezuela. Merida. F. Torres. November, 1981.
38. Metodologia para el diagnostico y diseno de sistemas agrosilvopastoriles. Seminario sobre Apllcacion de la Agrosilvicultura en Venezuela. J.B. Ralntree. November, 1981.
39. Some considerations on soil productivity under agroforestry landuse systems. P.K.R. Nalr. November, 1981.
40. An Inventory of trees and shrubs In the Northern Division of Machakos District. Kenya, 1981.
41. The role Of tree*1n farming systems 1n the Northern Division of Machakos District, Kenya, 1981.
42. Revised agroforestry problem Identification survey. R. Vonk. January, 1982.
43. Progress report on agroforestry farm trials at the Kathama field research site Machakos. R. Vonk. January, 1982.

INTERNATIONAL COUNCIL FOR RESEARCH IN AGROFORESTRY

FINANCIAL REPORT

FOR THE YEAR ENDED 31 DECEMBER. 1981

FINANCIAL STATEMENTS

BALANCE SHEET AS AT 31ST DECEMBER. 1981

(1n U.S. Dollars)

	<u>1981</u>	1980
Bank Balances	215,100	373.200
Prepaid Expenses	24,600	18,000
Total	239,700	391,200

Liabilities and Surplus

Liabilities

Accruals and other payables	102,900	135,800
Surplus	136,800	255,400
	239,700	391,200

Funds available
for the year ended 31 December. 1981

(In U.S. Dollars)

CORE SUPPORT:	1981	1980
Funds carried forward from previous year	176.100	204,800
Ministry of Foreign Affairs - Netherlands	125,000	125,000
Cooperation au developement et aide huntanitaire - Suisse	101,204	152,700
Canadian International Development Agency - Canada	121,237	87,500
International Development Research Centre - Canada	242,915	262,600
	590,356	627.800
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RESTRICTED SUPPORT:		
Project/Activity Support		
Funds carried forward from previous year	79.300	3,400
Cooperation au developement et aide humanitaire - Suisse		
- Kenya Seminar - 1980	-	8,400
- Plant Aspects Seminar	-	71,500
Canadian International Development Agency - Canada		
- Capital Development Grant - Field Station	33,840	-
- Mazingira Project Support	13,475	-
- Agroforestry Tree Seed Project (CIDA/CARE)	13,666	-
- Kenya Seminar	-	20,000
Agency for International Development - Norway	1,584	-
Rockefeller Foundation	-	6,210
Deutsche Gesellschaft Technische Zusammenarbeit	-	3,590
Deutsche Stiftung fur Internationale Entwicklung	-	5,400
World Bank	-	2,300
United Nations Environment Program	-	7,500
	62.565	124,900
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SENIOR STAFF SECONDMENTS:		
International Development Research Centre - Canada	24,000	.
Rockefeller Foundation - United States	24,000	-
Deutsche Gesellschaft Technische Zusammenarbeit - Germany	18,000	-
	66,600	-
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OTHER RECEIPTS:		
Agency and Office Fees	25,255	-
Interest Earned	12,370	11,200
	37,625	11,200
TOTAL FUNDS AVAILABLE DURING THE YEAR	1,012,546	972,100

NOTE: The Government of Kenya contributed various facilities including land for development Of Field Station, waiver of customs duties & taxes etc. and offered to grant land for development of parmanent headquartes.

EXPENSES FOR THE YEAR 1981

	<u>1981</u>	<u>1980</u>
Board and Committees	43,300	22,900
Administration Services	264,800	218,180
Scientific Programme Activities	454,300	435,822
Information Services	73,400	21,938
Equipment, Furniture & Fittings & Vehicles	38,100	
Consultancies	1,800	17,860
	875,700	716,700

FUNDING, EXPENSES AND SURPLUS

(in U.S. Dollars)

	<u>1981</u>	<u>1980</u>	
Funds available during the year	1,012,500	972,100	
Expenditure during the year	875,700	716,700	
Surplus	136,800		255,400