

**A WORK PROGRAMME FOR THE INTERNATIONAL UNION
OF FORESTRY RESEARCH ORGANIZATIONS' (IUFRO)
SPECIAL PROGRAMME FOR DEVELOPING COUNTRIES (SPDC)
FOR THE PERIOD 1 JULY 1989 - 31 DECEMBER 1990**

International Union of
Forest Research
Organization's Special
Programme for Developing
Countries

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ACRONYMS USED IN THE DOCUMENT

ASEAN	Association of South East Asian Nations
AVRDC	Asian Vegetable Research Development Corporation
BFTF	Bellagio Forestry Task Force
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza (in Turrialba, Costa Rica)
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro Internacional de Agricultura Tropical
CILSS	Comité (permanent) Interétats de Lutte Contre la Sécheresse dans le Sahel
CTFT	Centre Technique Forestier Tropical
dsa	Daily subsistence allowance
FAO	Food and Agriculture Organization of the United Nations
F/FRED	Forestry/Fuelwood Research & Development
IARCs	International Agricultural Research Centres
IBPGR	International Board for Plant Genetic Resources
IBSRAM	International Board for Soil Research and Management
ICIPE	International Centre of Insect Physiology and Ecology
ICLARM	International Centre for Living Aquatic Resources Management
ICRAF	International Centre for Research in Agro-Forestry
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDRC	International Development and Research Centre
IFDC	International Fertilizer Development Centre
IFPRI	International Food Policy Research Institute

Acronyms Used in the Document (continued)

IGADD	Inter-Governmental Agency on Desertification & Drought
IIMI	International Irrigation Management Institute
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Centre for Africa
INIBAP	International Network for Improvement of Banana and Plantain
ISNAR	International Service for National Agricultural Research
IUCN	International Union for the Conservation of Nature & Natural Resources
IUFRO	International Union of Forestry Research Organizations
MPTS	Multi-purpose tree species
RD&A	Research, Development & the Application of research findings
SADCC	Southern Africa Development Co-ordinating Committee
SPDC	(IUFRO's) Special Programme for Developing Countries
TAC	Technical Advisory Committee (of the CGIAR)
TFRC	Tropical Forestry Research Centre
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

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A. INTRODUCTION

1. The Bellagio II meeting at Wiston House on Tropical Forestry Research in November/December 1988, "after examination of eight options presented by the Task Force," for institutional strengthening of tropical forestry research, endorsed Options (1) and (5).

Option 1 suggested:

"Continue the present, essentially informal arrangements comprising a variety of networks, each self-governing and relatively independent, together with increased support for existing national and regional forest research and training institutes, at the discretion of individual donors."

Option 5 suggested:

"Expand the CGIAR's responsibilities but with a new and separate TAC for forestry research. This group would be small but have similar responsibilities to CGIAR's TAC."

2. The Bellagio participants took this dual approach because they recognized that to develop the meeting's main recommendation to incorporate forestry research into the CGIAR system will take time. In the meantime it is essential to maintain and build on the momentum of current research activity.

3. The CGIAR system is currently undergoing a reappraisal of its mandate with the objective of incorporating greater emphasis on research into sustainability of natural resources such as soils, water and forests. Because of the complexity of the issues involved, the number of CGIAR non-associated centres to be consulted¹ and the desirability of integrating forestry closely with this exercise, it is believed that this process will not be completed until the latter half of calendar year 1990.

¹These include ICIPE, IIMI, IBSRAM, AVRDC, INIBAP, IFDC, ICLARM, ICRAF and IUFRO's SPDC.

4. The main purpose of this paper is, therefore, to seek funding by the donor community for continued implementation of research activities which have been initiated by SPDC at least through to the end of calendar year 1990, by which time it is expected that CGIAR's possible role in forestry research will have been more clearly defined.

B. SUMMARY OF MAIN CONCLUSIONS

5. For the last six years the SPDC has been the main international non-associated centre responsible for promoting collaborative research networks in forestry research outside of agro-forestry research (which is handled by ICRAF - the International Council for Agro Forestry Research based in Nairobi, Kenya). Several forestry research initiatives have been started in Asia, Africa and Latin America that require immediate support. Over the period 1 July 1989 to 31 December 1990, SPDC's estimate is that about US\$11.4 million will be needed for the immediate execution of collaborative research networking activities in the Sahel-Sudan zone of Africa for which detailed in-country research proposals have already been finalized.

6. A further US\$1.6 million would enable SPDC to:

- (a) complete proposals for eight research networks that have been carefully identified and reviewed but for which detailed in-country research programmes still need to be finalized;
- (b) maintain its small core staff located in Vienna and Nairobi; and
- (c) respond to regional requests for an additional six networks of high priority topics to be initiated beyond December 1990.

A summary of planned activities with budget estimates for the period July 1989 to December 1990 is provided in Table 1 below. Implementation of this entire programme between July 1989 and December 1990 poses a great challenge to SPDC. Clearly there needs to be some prioritization of activities and an opportunity needs to be given for members of the donor community to indicate their special interest in the various activities outlined below.

Table 1

SPDC/Summary of planned activities and budget for
1 July 1989 - 31 December 1990²

Budget (US\$ 000)

(a) Ongoing research networks

Execution of in-country network research activities in the Sahel-Sudan zone of Africa:

. Genetic improvement of MPTS	8 400
. Management of savanna woodlands	<u>3 000</u>
Sub-total	<u>11 400</u>

(b) Future SPDC activities

Further development of SPDC sponsored collaborative research networks and training activities:

. Finalization of in-country research programmes for eight collaborative research networks	297
. Regional workshops for planning an additional six research networks	365
. Training courses and training materials	320
Overall co-ordination of IUFRO's SPDC:	
. Vienna office/Senior Co-ordinator and a Senior Research Scientist (Deputy Co-ordinator) ³ . . .	387
. Nairobi office/Co-ordinator plus secretarial and support staff	<u>248</u>
Sub-total	<u>1,617</u>
Grand total	<u>13 017</u>

²Annex 1 gives a more detailed breakdown of the above budgetary needs.

³Annex 2 gives Terms of Reference for the Deputy Co-ordinator.

7. This paper summarizes the status and provides further details of the above activities. It briefly concludes by setting out some of the major issues as perceived by SPDC in relation to a possible role within the CGIAR system, assuming that in line with the recommendations of the Bellagio II Task Force Report it were to evolve into an International Tropical Forestry Research Centre.

C. ESTABLISHMENT AND PAST ACTIVITIES OF THE SPDC

1. Origin of SPDC

8. The weakness of national research in tropical forestry has been noted with concern by the major international donors and executing agencies for over a decade. A satellite meeting of the Eighth World Forestry Congress (Jakarta, 1978) discussed the problem. The World Bank and FAO commissioned a study in 1980 and presented their findings at the 17th World Congress of IUFRO in Kyoto in 1981.

9. That Congress recommended greater efforts to enhance the status and effectiveness of forestry research in developing countries. As a direct result, IUFRO's SPDC was created in mid-1983. The financial support that it has been able to secure is summarized in Annex 3.

10. A six-point programme of work reviewed at the 1984 meeting of IUFRO's Executive Board has provided a framework for SPDC activities ever since. The six points are:

- forestry research planning with special reference to mobilizing financial resources for collaborative research networks;
- training in forestry research management;
- training in forestry research execution;
- facilitating information flows to developing country researchers;
- fostering twinning arrangements; and
- mobilizing international funding for forestry research training.

11. More recently the SPDC has been influenced in the direction of its research activities by deliberations of the International Task Force on Forestry Research that led to the Bellagio II conference. That conference recommended concentration of research in five main areas:

- (i) Forestry's role in agroforestry, watershed and arid zone land-use management.
- (ii) Natural forest conservation and management;
- (iii) Tree breeding and tree improvement;
- (iv) Forest utilization and market research; and
- (v) Policy and socio-economic research.

In relation to these five priority areas SPDC has so far been most active in areas (ii), (iii) and (iv), and in the areas of watershed and arid zone woodland management that complement the farming systems oriented agro-forestry research activities of ICRAF, CATIE, IITA, ILCA, CIAT and ICRISAT. Plans are in hand for a Research Workshop on Policy Research to be held in the Asia region in 1990.

12. In the area of research planning and establishment of collaborative research networks, SPDC has so far conducted six regional workshops. These workshops are listed below and details are provided in Annex 4.

- (a) Kandy, Sri Lanka, 1984, for Tropical Asia;
- (b) Manaus, Brazil, 1984, for Southern America;
- (c) Nairobi, Kenya, two workshops in 1986/87, for the Sahel-Sudan zone in Africa;
- (d) Huaraz, Peru, 1987, for Tropical Latin America; and
- (e) Lilongwe, Malawi, 1988, for East and Southern Africa.

13. The following paragraphs briefly summarize the current status of follow-up activity arising out of each of the above research workshops and the immediate financial needs to maintain momentum of these activities. Annex 5 provides details of training courses on research management methods which have been already given by SPDC or which are planned.

- 2. Status of in-country ongoing network activities for which funding is reasonably assured for the period July 1989 to December 1990

14. In Asia there are three functioning networks that relate to the recommendations of the Kandy workshop:

- (a) a USAID-funded initiative, Forestry/Fuelwood Research and Development (F/FRED), co-ordinates and finances the multi-purpose tree species (MPTS) network in two

ecological zones (humid and semi-humid, and arid and semi-arid);

- (b) IDRC funds two networks on bamboo and rattan; and
- (c) there are incipient networks, based at the Faculty of Forestry in Kasetsart University (Thailand), for Azadirachta indica and Albizia spp.

15. Since funding for immediate needs of these Asia regional activities is reasonably assured from USAID and IDRC this paper does not request additional funding at this time.

- 3. Immediate funding needs for two in-country research activities for which detailed research programmes have been finalized and activities can promptly commence

16. By contrast with the Asia situation, the two SPDC-sponsored Nairobi regional workshops in 1986 and 1987 resulted in proposals which are ready for immediate execution, but are not yet adequately funded. The two proposals cover:

- (a) the genetic improvement of multi-purpose tree species and seed production in the Sahel-Sudan zone; and
- (b) the management of natural savanna woodlands.

17. For implementation of the first phase of the genetic improvement project some funding has been secured from France (FAO project FAO-GCP/RAF/234/FRA). Five-year in-country research programmes have now been finalized for each of the nine member countries of CILSS⁴, plus a document for a co-ordination unit to be based at the lead institution, the Forest Ecology Center at CILSS Headquarters at Ouagadougou in Burkina Faso. A meeting convened by CILSS for October 1989 will review the role of the lead institution and finalize detailed work programmes in the light of mobilized financial support. The financial needs for the 18-month period amount to US\$8.4 million (see Annex 6 for details). SPDC will play an active role in setting up the network co-ordinating unit and in monitoring the progress and quality of research.

⁴Burkina Faso, Cape Verde, Chad, Gambia, Guinea Bissau, Mali, Mauritania, Niger, Senegal.

18. In the 18 months of this extension the savanna woodlands project would cover three IGADD⁵ countries (Kenya, Somalia and Sudan) plus Cameroon, Nigeria and Tanzania. A five-year in-country research programme has been prepared applicable for each of these countries, with primary emphasis on upgrading the productivity of existing savanna woodlands, mainly by simple technologies such as manipulation of lopping, early burning and reseedling of canopy gaps. Recent work in other countries has suggested the potential for at least doubling the productivity of such woodlands, which play a vital role in supplying fuelwood and tree fodder and in protecting soil and water resources. Financial requirements for the coming 18 months are US\$3 million and details are provided in Annex 7.

4. Finalization of in-country research proposals for eight other networking activities

19. A large part of the planned SPDC work programme in the next 18 months will be additional work on preparation of country research programmes for eight other networks.

20. Four of these networks, of which two are to be in Latin America and two in Africa, relate to the genetic improvement of MPTS and other tree species, plus seed production. The high level of interest in this topic stems from the spectacular improvements in forest plantation growth obtained through simple provenance and progeny trials. By contrast with agriculture, forestry tree breeding and improvement are still dealing with "wild" populations with potential for major gains in productivity. To ensure that farmers, village communities and industrial agencies have early access to improved planting material requires a major initiative to establish replicated provenance trials in different agro-ecological zones and the development of improved seed collection/storage, and production of vegetatively propagated planting material.

21. Two of the proposed networks, one in Latin America and one in Africa, relate to rehabilitation of degraded forest wastelands with strong emphasis on leguminous fodder shrubs and tree species. Promising results are being achieved with improved provenances of Prosopis, Leucaena, Glyricidia and other species. Reforestation of degraded forest wastelands, the area of which in the tropics already exceeds 100 million hectares, will be an important first step towards upgrading their productivity and paving the way for the reclamation of some of this area as grazing or agricultural crop land.

⁵IGADD groups Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda.

22. A further two networks relate to technology transfer and utilization research. In this area three main types of research activity can be identified:

- (a) forest products research which aims at improved efficiency in timber, plywood, or pulp and paper industrial manufacturing processes;
- (b) basic research into the possibilities for making greater use of the many kinds of secondary hardwood species that occur in tropical forests. (Current utilisation concentrates on a handful of high value species. Increasing the number of species that can be harvested is a key to improved utilization and sustainable tropical forest land-use management); and
- (c) research aimed at improving knowledge and sustained yield management options for the many hundreds and perhaps thousands of plant food, medicinal and wildlife species, that occur in tropical forests - many of which are unknown or under-utilized.

23. To date SPDC has been mainly active in areas (a) and (b) above, but it is under great pressure to move rapidly into area (c) which is a key to meeting the subsistence needs of some 200 million tropical forest dwelling people and to conservation of the biological diversity of the tropical rainforest.

24. In summary the eight networks that need immediate further preparation include:

4. Genetic improvement of MPTS

- (a) The IGADD countries. In-country research proposals need to be completed. A prior meeting is needed to select the lead institution, to agree upon its role, and to discuss the co-ordination required by the network.
- (b) Mexico, Central America, and the Spanish-speaking Caribbean region. The second set of country research programmes will build on the proposal of the Huaraz workshop for regional tree improvement of both MPTS and timber species. A document on the co-ordination unit is required to supplement those for the individual ten countries.
- (c) South America: Argentina, Brazil, Chile, Peru and Venezuela. This project on tree improvement of arid zone species has a complementary component on the management of the natural vegetation to conserve its genetic potential. A document on the co-ordination unit is required to supplement those for the individual

countries.

- (d) East and Southern Africa SADCC countries: Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Zambia and Zimbabwe). A ninth country, Tanzania, was covered by FAO-GCP/RAF/234/FRA. The SPDC Lilongwe (Malawi) workshop was the starting point for this network.

5. Reclamation of degraded forest lands

- (e) South American highlands : Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela. This network was proposed at the 1987 Huaraz workshop. Participation in the various component sub-projects will be ascertained during the preparation of country proposals. Again, a document is required on the co-ordinating lead agency.
- (f) SADCC countries. A network on the rehabilitation of degraded lands through the planting of trees and shrubs has been requested by the SADCC countries. Country research programmes are needed for the nine member states and the co-ordination unit.

6. Transfer of technology in wood utilization

- (g) South America
- (h) South East Asia

Two networks for the transfer of technology on wood utilization, from research to extension agencies and users, have been initiated. Both networks require country research programmes and proposals on the co-ordination units.

For each of the above eight networks SPDC can provide background papers including the findings and recommendations of the six Regional Workshops noted in paragraph 12 above. A list of references including proceedings of the workshops is provided in Annex 8.

25. SPDC will implement preparation of in-country research proposals for the above networks using experienced consultants drawn mainly from its IUFRO research contacts and a roster of research scientists. SPDC's approach to collaborative research networking has been based on the principles for successful networking that are emerging from past agricultural experience namely:

- . The research problem or constraint should be clearly defined and a realistic research agenda drawn up in close consultation with relevant national research agencies;

- . The problem should be widely shared and participants feel that they are likely to gain from the results;
- . There should be strong self-interest;
- . Participants in the network should be willing to commit resources such as personnel and facilities and should possess a minimum level of scientific capability; and
- . For each network there should be a clearly defined network leader with capacity to provide scientific leadership, and to monitor the quality of research.

26. SPDC recognizes that finalization of eight new collaborative research networks over the coming 18-month period is an ambitious target. The purpose in presenting all of these proposals in this paper is to illustrate the range of research networking activities that SPDC has pursued to date and to allow some discussion and prioritization at Canberra and selection by the donor community of those topics and/or groups of countries which most closely correspond to their particular interests.

7. Regional workshops for planning six new in-country research network activities

27. In addition to the activities described in the previous sections SPDC has also been requested to sponsor a further six research workshops over the coming 18 months and beyond. Planning for one workshop in the Caribbean region has already reached an advanced stage. The topics for these new collaborative research networks were selected in consultation with regional research directors and taking into account the five priority research areas emerging from the work of the Bellagio II Task Force. Clearly SPDC will have difficulties in meeting all these requests. The objective in summarizing the full list is to allow for donor participation in its process of prioritization and selection of countries.

28. The six possible new activities are:

- (a) a Caribbean workshop has been planned for May 1990. The priority areas of interest tentatively suggested by research staff in the region are: watershed management, forest ecosystem conservation, management of secondary forest, agroforestry and industrial forest plantations. UNDP has already provided \$145,000 of the \$155,000 required. A first priority is to narrow down this range of topics to focus on those which will most rapidly resolve constraints to sustainable forest resources land-use management;

- (b) two workshops have been requested for Asia:
 - (i) a preliminary survey of the capabilities and interests of institutions concerned with analysis and research on policy and socio-economics in 1989 would be followed by a meeting to discuss the results and to determine the needs for future work;
 - (ii) a second Asia regional meeting would cover the seven countries not actively involved in the multi-purpose tree species network co-ordinated by the USAID-funded F/FRED project. (Since the Kandy workshop in 1984 there have been shifts in the priorities of several countries. A fact-finding mission before the workshop would determine the degree of commonality among these seven countries and in particular examine the possibilities for three new species networks);
- (c) a fourth workshop is proposed for North Africa and the Near/Middle East region to focus on problems and arid-zone land-use, forest-resource management. This meeting also would be preceded by a fact-finding mission to determine interests and capabilities;
- (d) two missions have been requested, both concerned with the management of tropical rain forest for sustainable production and the conservation of genetic resources:
 - (i) IUCN has a seven-country programme in Central Africa which is now in its second planning stage. There is a proposal to establish a research/demonstration project in the Central African Republic, based on the pilot management scheme in the Foret de Yapo in Côte d'Ivoire. The fact-finding mission would determine the possibilities for replicating this work in the other countries. The mission and subsequent workshop would involve continued close collaboration with IUCN; and
 - (ii) a fact-finding mission in conjunction with the ASEAN Institute of Forest Management has been requested for South East Asia. The pressure on those countries of the region, where productive areas of tropical rain forest still exist, is increasing rapidly from many quarters. There is some evidence that a different approach to research and the communication of results is now appropriate.

D. TRAINING COURSES AND TRAINING MATERIALS

29. The need for a massive increase in training in the management and methods of forestry research has been noted repeatedly in the last decade. A small number of courses are offered regularly in developed countries for research staff from developing countries. Occasional courses have been funded by donors in the developing countries themselves, with external instructors. Some R and D projects include a large component of training in research for project staff. All these activities do little more than scratch the surface of the problem, which is exacerbated by the high turnover of research staff in developing countries.

30. The immediate need is to continue and expand the present series of courses and to offer them more widely. Funding agencies can obtain better value for money by insisting that courses are thoroughly prepared so that they can be given repeatedly, with appropriate upgrades and adjustments for different countries and regions. In addition, a major effort needs to be initiated to prepare material for the trainers themselves.

31. During the coming 18 months a SPDC-sponsored training course on management of research is proposed for Latin America. A course on statistical methods for forestry research is also planned. Half of the funding needed has already been secured from the Government of Austria. Similar courses have been requested for research staff in North Africa and the Near/Middle East. The preparation and publication of training materials would be initiated for both management and methods of forestry research.

E. ISSUES FOR THE FUTURE

32. As can be concluded from the previous sections, SPDC's capacity to implement the objectives it set for itself in 1984 and to respond to an increasing number of requests from national institutions has been severely constrained by lack of funding and other resources.

33. As originally conceived, it was intended that given adequate resources SPDC would play a much more active role in planning, monitoring and evaluating the research activities emerging from its workshops. Because of lack of resources, SPDC has had to rely for much of the follow-up work and monitoring of quality research on various bilateral and multilateral financing and/or technical assistance agencies. The results are not always satisfactory because there is no commonality in approach - frequently failure to mobilize adequate funding to ensure that these research networks succeed, and most importantly SPDC has not been able to follow up and monitor the scientific quality of research undertaken and to ensure that research results were being transmitted from the network research institutions to farmers, village communities and

industrial entities.

34. Assuming that in line with the Bellagio II Task Force recommendations, SPDC were now to evolve into a Tropical Forestry Research Centre (TFRC) (or Council) separate from IUFRO (but within the framework of the CGIAR system) its objective would be to consolidate and build on its own experience and that of the CGIAR and other non-associated centres in acting as a focal point within the CG system for promoting collaborative forestry research networks, for contracting with specialized agencies, for implementation of high-priority forestry-related studies, for monitoring financial resources and monitoring the quality of research, and for ensuring adequate training and information systems.

35. In this capacity it would work with both developing and developed country forest research agencies in a continuing evaluation of constraints to forest conservation and sustainable forest land use and resource management. It would assist in identification of problems on which research should be concentrated with special emphasis on opportunities to improve forest productivity, sustainable forest land use and conservation of forest plants and wildlife resources.

36. As a Tropical Forestry Research Centre within the CGIAR system the TFRC would propose CGIAR funding for a programme of forestry research for which it will arrange implementation. The research could be done:

- (a) by network partners in the developing countries;
- (b) by advanced institutions;
- (c) by individuals employed by the TFRC for outposting in national research systems; and
- (d) by the TFRC's own headquarters staff working in partnership with the host country programme.

Effectively to achieve these objectives the TFRC would need to develop capabilities for developing contractual relationships with lead networking agencies or with individual research centres that have a comparative advantage in specialized areas of research.

37. TFRC would propose funding for various kinds of training that would enhance capacity to carry out and manage research and it would vigorously pursue the preparation of data bases for key research topics. Future development of the bibliographic research services already initiated with World Bank and other donors' support will be continued.

38. All of the above proposed functions of TFRC are in line with the recommendations of the Bellagio II Task Force. Whilst greatly welcoming the recommendations of the Bellagio II meeting that forestry research be now integrated into the CGIAR system, SPDC's management, some of IUFRO's Board members and many senior forestry scientists world wide have expressed concern that the Bellagio II recommendations bypassed the critical importance of the need for a strong International Tropical Forestry Research Centre within the CG system.

39. Whilst it is recognized that some existing CGIAR centres such as IITA, ILCA and ICRISAT have already embarked on some areas of mainly agro-forestry-related research and that agencies such as IFPRI, ISNAR and IBPGR could now develop capabilities for dealing with some particular aspects of forestry, it seems unlikely that such IARCs could effectively implement the range of technical, sociological and economic research activities that will need to be put in place if tropical deforestation is to be contained and if forestry is to make a more effective contribution to agricultural productivity, sustainable land use and economic development. To achieve that will require, in SPDC's judgement, specific focal points for forestry and agro-forestry research, such as TFRC and ICRAF, within the CG system.

ANNEX 1Tabular Summary of SPDC's Activities and Budgetary Requirements
for the Period 1 July 1989 to 31 December 1990Estimated
budget
requirements
(US\$'000)A. Execution of in-country network activities

1. Genetic improvement of multi-purpose tree species (MPTS) and seed production in the Sahelian and North Sudanian zone of Sub-Saharan Africa

- (a) 9 CILSS countries plus network co-ordination 8,359 (see Annex 6 for details)

2. Management of natural savanna woodlands

- (a) Kenya, Somalia, Sudan, Cameroon, Nigeria and Tanzania 3,000 (see Annex 7 for details)

Note: other pilot centres will be established in some CILSS countries after December 1990.

Total cost for the execution of in-country network activities for 18 months \$11,359

B. Finalization of in-country research programmes for collaborative research networks already initiated by SPDC but for which to date follow-up action has not been possible because of lack of resources

1. Genetic improvement of multi-purpose tree species (MPTS) and other species, plus seed production

- (a) 6 IGADD countries plus network co-ordination; work to be carried out by project FAO/GCP/RAF/234/FRA. The US\$35,000 is needed for a meeting to agree on leadership and co-ordination . . . 35

Estimated
budget
requirements
(US\$'000)

(b) 10 countries in México, Central American and Spanish-speaking Caribbean, plus project document network co-ordination	67
(c) 5 countries in South America, plus a project document for network co-ordination. The project includes management of natural vegetation for conservation of genetic resources	34
(d) 8 SADCC countries (Tanzania already covered by the Sahelian - North Sudanian network) plus a project document for network co-ordination. This work will be done by the IUFRO/SPDC Co-ordinator for Africa	-
2. Rehabilitation of degraded lands	
(a) 7 Andean countries, plus a project documents for co-ordination of 3 networks	47
(b) 9 SADCC countries, plus a project document for network co-ordination. This work will be done by the IUFRO/SPDC Co-ordinator for Africa	-
3. Technology transfer in wood utilization	
(a) 9 countries in South America, plus a project document for network co-ordination	60
(b) 8 countries in South East Asia, plus a project document for network co-ordination	54
<u>Total cost for the preparation during July 1989 to December 1990 of network activities to be initiated after 1990</u>	<u>\$ 297</u>

Estimated
budget
requirements
(US\$'000)

C. Holding of workshops during July 1989 to
December 1990 for planning of group-country
research

1. Anglophone Caribbean

- (a) watershed management, forest ecosystem conservation, management of secondary forest, agro-forestry and industrial forest plantations. A contribution of US\$145,000 has been agreed already with UNDP; the US\$10,000 is the additional extra cost to mount the workshop. 10

2. Asia and the Far East

- (a) policy/socio-economic research
- . survey of institutions (1989) 15
 - . workshop of results of the survey plus needs (1990) 75
- (b) research planning in countries not covered by project F/FRED, which is funded by USAID
- . fact-finding mission (1989) 25
 - . workshop (1990) 75

3. North Africa and Near/Middle East

- (a) fact-finding mission (1989) 25
- (b) workshop (1990) 75

Total cost for research planning workshops . . . \$ 300

D. Preparatory work during July 1989 to December 1990 for the holding of workshops for planning of group-country research after 1990

1. Management of tropical rain forest for sustainable production and the conservation of genetic resources

- (a) fact-finding mission in 7 countries in Central Africa, in collaboration with IUCN 35

Estimated
budget
requirements
(US\$'000)

- (b) fact-finding mission in 5 countries in South East Asia, in collaboration with the ASEAN Institute of Forest Mangement 30

Total cost of preparatory work for research planning workshops to be held after 1990 \$ 65

E. Training courses and training materials for the period July 1989 to December 1990

1. Training courses on the management of forestry research

- (a) two-week course in Latin America 65

2. Training courses in statistical methods for forestry research

- (a) six-week course in Austria, for participants from least developed countries. Fifty per cent funding has been indicated by the Government of Austria. The US\$55K is the additional amount required to mount the course 55

- (b) six-week course for North Africa and Near/Middle East 100

3. Preparation of training materials

- (a) for management of forestry research (2-week course) 30

- (b) for methods of forestry research (6-week course) 70

Total cost for training courses and materials \$ 320

F. Overall co-ordination of IUFRO's SPDC during July 1989 to December 1990

1. Vienna office

- (a) Co-ordinator (50 per cent full-time) . honorarium (\$60,000 towards which there remains about \$15,000 from the UNDP contribution) 45

	<u>Estimated budget requirements (US\$'000)</u>
. travel (\$30,000 towards which there remains about \$5,000 from the UNDP contribution)	25
. daily subsistence allowance (dsa) (\$30,000, towards which there remains about \$5,000 from the UNDP contribution)	25
(b) Deputy Co-ordinator	
. honorarium	120
. travel	20
. dsa	20
(c) Consultants (legal, accounting, etc.) . .	75
(d) Supporting staff	
. personal assistant (75 per cent full-time)	Govt. of Austria
. data-base assistant (25 per cent full-time)	"
. documentation assistant (25 per cent full-time)	"
. accountant (20 per cent full-time)	15
(e) Office space and related services	Govt. of Austria
(f) Communications (mail, telephone, telex, fax)	18
(g) Information Bulletin for Developing Countries (6 issues in 18 months)	24
<u>Total cost of Vienna office</u>	<u>\$ 387</u>

1. Nairobi office

(a) Regional co-ordinator	
. honorarium	120
. travel	20
. daily subsistence allowance (dsa) . . .	20
(b) Supporting staff	
. secretary	10
. driver/messenger	8
. dsa	20

	<u>Estimated budget requirements (US\$'000)</u>
(c) Office space and related services	18
(d) Communications, stationery, etc.	20
(e) Reference materials and subscriptions . .	3
(f) Newsletter	9
(g) Local transport	20
<u>Total cost of Nairobi office</u>	<u>\$ 248</u>
<u>Total cost of overall co-ordination.</u>	<u>\$ 635</u>

ANNEX 2Terms of Reference of the SPDC Deputy Co-ordinator

In addition to backstopping the SPDC Co-ordinator and acting on his behalf during his absences from duty station, the Deputy-Co-ordinator will be responsible for initiating and fostering the following specific activities:

1. development of contractual documents with the Forest Ecology Centre of CILSS for establishing a network co-ordinating unit for monitoring of the progress and quality of research for the Sahel-Sudanian network;
2. data-base on the subject area preferences of donor agencies;
3. data-base on the rules for submission of grant requests and project proposals to donor agencies for field research;
4. data-base on the rules and formats for submission of requests to donor agencies for scholarships for in-country and external studies;
5. data-base on forestry research programmes in developing countries in co-operation with FAO;
6. data-base on sources of comparative data on tree growth and yield;
7. data-base on sources of free or subsidized literature;
8. data base on consultants with experience in developing countries;
9. computerized accounting systems for the SPDC itself and for networks with which it might be directly associated;
10. contributions to training materials; and
11. widening the scope of the Information Bulletin.

ANNEX 3Past Financial Support to the IUFRO Special Programme
for Developing countries and Current Budgetary StatusEarly Sponsors and Contributions to SPDC

Funding for IUFRO's special co-ordinator and his programme of work has been sporadic, piece-meal, and inadequate. In 1983 the World Bank and UNDP provided US\$65,000 to start work. The following year their second contribution was US\$55,000. Starting in 1984 the Government of Austria provided a forest scientist and a quadrilingual translator plus office space and part of the operational expenses. Other cash came in 1984 to the co-ordinator's office from USAID (US\$12,000) and from the U.S. Forest Service (US\$23,000). Cash contributions for the office of the special co-ordinator have only totaled US\$155,600 between June 1983 and February 1988.

The funds provided have not covered the costs of the co-ordinator and his office. Part of the costs of the co-ordinator and his office have had to be charged to the budget of the planning workshops and other financial sources. This awkward financial position has been aggravated further by delays in transmission of funds by some sponsors.

The World Bank agreed late in 1986 to provide core support for IUFRO's special programme for Africa south of the Sahara. The grant of US\$270,000 each year for three years has been used to appoint a regional co-ordinator and to fund the second regional planning workshop for eastern and southern Africa and a proposed training course or workshop for managers of RD and A in Africa.

IUFRO's special programme, by means of planning workshops and training courses, has attracted substantial contributions for field activities from a number of sponsors. By the end of 1987 cash totalling more than US\$360,000 and in-kind contributions summing probably to a larger amount have resulted. Field activities include:

- . The regional planning workshop at Kandy, Sri Lanka, in 1984 brought forth cash contributions totalling US\$113,500 from four sponsors (ADAB, GTZ, UNESCO/MAB, and USAID), and at least ten sponsors made in-kind contributions.
- . The first regional RD and A planning workshop at Nairobi, Kenya, in 1986 was financed by cash contributions of US\$117,200 from five sponsors (ADAB, GTZ, UNESCO/MAB, UNESCO/ROSTA, and USAID), and in-kind contributions from at least ten sponsors.

Annex 3 (continued)

- . The full cost, US\$87,300 of the second regional planning workshop at Nairobi was met from the contribution of the World Bank for its crash programme in Africa south of the Sahara.
- . The regional planning workshop at Huaraz, Peru in 1987 resulted in cash contributions of US\$10,900 from GTZ and US\$25,000 from USAID plus in-kind contributions from 14 sponsors.

The surveys of needs in forest products research in Southeast Asia and in Latin America were largely paid for by IDRC. The training course in management of forestry research at Nairobi in 1986 was totally financed by the Government of Finland. The training course in statistical methods for forestry research at Gmunden, Austria, was shared by the Government of Austria, FAO, and savings from the first workshop at Nairobi.

All cash contributions to support the co-ordinator and his programme have totalled during four and one half years almost US\$750,000. Contributions in kind, especially those from FAO, USDA Forest Service, and IDRC, have been substantial. These contributions demonstrate strong support for and confidence in IUFRO's SPDC.

SPDC's Current Budget, 1987-1988

On an annual basis the funds in hand (January 1988) AND PROMISED FOR THE SPDC add up to approximately US\$645,000. The continuing contribution from the World Bank provides US\$345,000 for activities in Africa south of the Sahara and some core-support financing for the Vienna office. UNDP is providing US\$150,000 for a two-year period. USAID has provided US\$150,000 for one year to support assistance to networking of forestry RD and A in developing countries. The Government of Austria contributes personnel space, and services valued at approximately US\$35,000 annually. FAO has continued to provide technical and logistical support to the SPDC including direct substantial investment for the workshop at Huaraz, Peru. IDRC and USDA Forest Service are contributing substantial funding and critically needed in-kind services.

At this level of financing the staff of the special programme can include the half-time co-ordinator, one regional co-ordinator in Africa, and the translator and professional forester at headquarters. Activities can include one workshop and a training courses plus some work toward other objectives.

ANNEX 4Workshops Which Identified Research Needs and Approved Proposals
for Group-Country Projects**Workshops Identified Research Needs and Approved Proposals for Group-Country Projects****Kandy, Sri Lanka, 1984**

1. The first regional research planning workshops, for Asia, was held at Kandy in Sri Lanka in July 1984, and entitled "Increasing productivity of multipurpose tree species" (Shea and Carlson 1984; Burley and Stewart 1986).

There were 25 participants from 12 Asian countries. The workshop used the traditional technique of discussions around position papers leading to the identification, for three major climatic zones in Southeast Asia, of priority species among MPTS and supporting thematic projects. The planning group developed a single objective, 7 sub-objectives, 21 goals and 43 activities. The practical end-products were proposals for the creation of 10 research networks, each concentrating on one or a few species. However, these suggestions were not in the form of draft project documents, ready for submission to donor agencies.

2. The 10 networks, with leaders, co-leaders and suggested principal sources of financial aid, were:

2.1. *Acacia* spp.: *A. auriculiformis*, *A. mangium*, *A. nilotica*, *A. senegal*, *A. tortilis*. Leader: India. Co-leader: Malaysia. Sponsors: US-AID and 6 others.

Bamboo. no species mentioned. Leader: Bangladesh. Co-leaders: China and Thailand. Sponsors: IDRC with ODA and US-AID.

2.3. *Albizia* spp. and *Leucaena* sp. Leader: Philippines. Co-leader: Taiwan. Sponsors: US-AID and 4 others.

2.4. *Eucalyptus* spp: *E. camaldulensis* and *E. microtheca* lead by Ind. *E. deglupta* and *E. urophylla* lead by Indonesia. Sponsor: World Bank

2.5. *Dalbergia sissoo*, *Morus alba* and *Populus* spp. Leader: Pakistan. Sponsors: US-AID with World Bank and 2 others.

2.6. *Azadirachta* spp. and *Melia* s. Leader: Thailand. Sponsors: IDRC with US-AID and 2 others.

2.7. Rattan, no species mentioned. Leader: Malaysia. Co-leader: Thailand. Sponsors: IDRC with US-AID and the World Bank.

2.8 *Prosopis cineraria*. Leader: India. Sponsors: US-AID with IDRC and the World Bank.

2.9 *Salix* spp. and *Robinia pseudoacacia*. Leader: India. Sponsors: US-AID with GTZ and the World Bank.

2.10 *Alnus nepalensis* and *Grewia oppositifolia*. Leader: Nepal. Sponsors: US-AID and 3 others.

3. The Kandy workshop has helped to target the Asian component of US-AID's F/FRED (Forestry/Fuelwood Research and Development) Project which is now operating in several countries and is reported to be concentrating on the following species: *Acacia auriculiformis*, *A. mangium* and *Leucaena* spp. for the moist and wet areas; *Azadirachta indica*, *Melia azadirach* and *Eucalyptus camaldulensis* for the arid and semi-arid areas; thus, three species for each of two of the main climatic zones in the region. The F/FRED project was approved in mid-1985 and became operational in 1986. The world budget of the F/FRED project is US\$40 million, with US\$10 million for the 10-year segment in Asia. Winrock International manages the Asia segment for US-AID from a coordination office at Kasetsart University in Thailand. There are three components: research capability enhancement, networking of institutions, and information systems / database management. Progress has been reported by Adams and Dixon (1986).

4. A consultant was recruited by IUFRO in mid-1985 to convert the Kandy recommendations into fundable project proposals and to sustain the momentum generated by the workshop. He visited 12 countries in Southeast Asia and recorded the national commitments to the MPTS networks (Madamba 1985). These 12 countries were: Bangladesh, Peoples' Republic of China, India, Indonesia, (Peninsular) Malaysia, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Taiwan and Thailand. At the time of the visits the following situations were encountered:

4.1 Bangladesh. This country would participate in networks 2.1 to 2.7 mentioned above and provide the regional leadership for 2.2. The frameworks of the programs have been drafted and copies of the documents are archived with the vice-president of IUFRO at FRIM.

4.2 Indonesia. The Forest Research and Development Center (FRDC) of the Agency for Forestry Research and Development confirmed its agreement to lead network 2.4 and its participation in 2.1, 2.2, 2.3, 2.5, 2.6 and 2.7. Frameworks of the programs for these networks had been drafted. Copies of the documents are archived with the vice-president of IUFRO at FRIM. The selection of a national director for the MPTS research program was in process and searches were underway for national managers of the individual networks, plus the regional coordinator for the eucalypt network.

4.3 Malaysia. The Forest Research Institute of Malaysia (FRIM) reiterated its offer to lead networks 2.1 (*A. auriculiformis* and *A. mangium* only) and 2.7, and to participate in networks 2.2, 2.3, 2.4 and 2.6. Program frameworks are archived with the vice-president of IUFRO at FRIM.

4.4 Nepal. An outline of the participation in four networks, out of the seven mentioned as possible during the Kandy workshop, had been prepared and a copy of the documents is archived with the vice-president of IUFRO at FRIM. Shortage of staff and other resources makes it difficult to plan and program research in detail.

4.5 Philippines. The former Forest Research Institute of the Ministry of Natural Resources would be the national lead agency for most of the networks and the regional leader for the *Albizia* and *Leucaena* network 2.3. The Philippines would participate in networks 2.1, 2.2, 2.4, 2.6 and 2.10. Frameworks of the programs for each network had been drafted and the leaders for the national and regional programs had been agreed. Copies of the documents are archived with the vice-president of IUFRO at FRIM.

4.6 Thailand. Kasetsart University and the Royal Forestry Department would share responsibility for MPTS research. Thailand confirmed its agreement to lead network 2.6 and to participate in networks 2.1, 2.2, 2.3, 2.4 and 2.7. Leaders had been suggested. Copies of the documents for network 2.6 are archived with the vice-president of IUFRO at FRIM.

4.7 Plans for MPTS research from the other six countries visited by the IUFRO consultant had not been received by the vice-president of IUFRO at FRIM by August 1985.

5. FAO is executing the GCP/RAS/111/NET regional wood energy development program in Asia. This network is coordinated from the FAO regional office in Bangkok, Thailand, and covers ten countries: Bangladesh, Burma, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. Finance for the coordination comes from funds-in-trust by The Netherlands.

6. Another FAO regional network will cover the genetic improvement of MPTS in hill country, with emphasis on the value for fodder. Four countries will be involved in the project: Bangladesh, Bhutan, Burma and Nepal. Funding will be provided by UNDP for a start in the near future.

7. An FAO proposal to UNDP is "in the pipeline", for large-scale afforestation with MPTS for domestic use in 13 Asian countries. The project is estimated to cost US\$13 million and will include substantial efforts on application of technology and training.

8. Funding for parts of networks 2.2 (bamboo) and 2.7 (rattan) has been assured by IDRC.

9. A regional center for forest tree seed near Bangkok, Thailand, for the ASEAN countries was built with a C\$1.5 million contribution from CIDA/IDRC, and a supplement of C\$0.3 million to the initial operating costs. The center, with additional equipment supplied by JICA, will certainly be useful for the MPTS Asian networks.

10. Australia is funding the ACIAR/ASEAN program in Brunei, Indonesia, Malaysia, Philippines and Thailand. It consists of 9 projects on tree improvement and breeding, 6 of which are equivalent to proposals made at the Kandy workshop: improvement to *Acacia* spp., *Albizia falcataria*, and eucalypts; introduction of species and provenances;

management for the production of improved seed; applied research on the biology of reproduction.

Nairobi I, Kenya 1986

11. The second regional research planning workshop was held in Nairobi, Kenya, in January 1986 and entitled "Increasing Productivity of Multipurpose Lands" (Carlson and Shea 1986). The workshop concentrated on the problems of the Sahelian and North Sudanian zones, and was attended by 35 participants from 15 African countries. In contrast to the preceding meeting at Kandy in 1984, the Nairobi I workshop was organized around seven subject areas. For each area, a draft project document was commissioned from consultants. In practice, the workshop papers tended to be reviews, supplemented by outlines of project proposals (called "topics" in the workshop proceedings) for action within a program (called a "proposal"). The seven subject areas and associated draft projects are listed in paragraphs 12-18.

12. Agroforestry research and development; agroforestry for the solution of food, fodder, and fuel shortages. There were four subprojects:

12.1 Agroforestry fodder species for arid lands, including: biology and reproduction of the family *Capparaceae*, and uses in arid zones of the genus *Atriplex* and the family *Cactaceae* for fodder and food production.

12.2 Agroforestry management for fodder in dry zones, including: management of hedges to produce fodder, management of trees for fodder production, productivity and quality of selected browse species as fodder, and phenology and physiology of leaf growth.

12.3 Agroforestry management for fuelwood and fodder production in dry zones, including: production of fuelwood and fodder by windbreaks, production of fuelwood and fodder on saline lands, production of fuelwood in various agroforestry systems (alley cropping, home gardens, farm woodlots, boundary trees, and intercropping).

12.4 Impact of agroforestry on food production, including: food production by woody plants, and studies of the tree-crop interface.

13. Research and development of techniques for natural regeneration for silvo-pastoral management of existing forest resources. This theme was treated as a single project with several lines of research: bioclimatology, techniques of inventory and photo interpretation, methodology to estimate the volume and the productivity of a stand, stand regeneration techniques, management of stands and their productivity, stand dynamics, development of an agroforestry system based on natural regeneration, development of a pasturing system based on natural regeneration, and bush fires. In addition, five special studies were proposed for research.

14. Management of indigenous trees and shrubs for the rehabilitation of degraded rangelands in the arid zone of northern Kenya. This proposal was essentially for the

establishment of demonstrations of management possibilities, rather than research.

15. Selection and genetic improvement of indigenous and exotic multipurpose tree species including seed collection, handling, storage and exchange. There were four subprojects:

15.1 Exploration, conservation and provenance seed collection of multipurpose woody species.

15.2 Evaluation and selection of genetic resources of multipurpose woody species.

15.3 Quantitative and qualitative improvement in multipurpose tree seed supplies.

15.4 Coordination of species and provenance selection of multipurpose woody species.

16. Developing and using biotechnologies in forestry and agroforestry in the Sahelian and Sudano-Sahelian zones. There were two subprojects:

16.1 Selection and genetic improvement of ligneous material.

16.2 Biotechnology of the symbiotic microorganisms.

17. Research and development of nursery practices and techniques for the establishment and management of fuelwood plantations including water harvesting and distribution. Eight subprojects were proposed:

17.1 Continued training for forestry staff, including: evaluation and preparation of a project document, and establishment and operation of training units.

17.2 Preparation of analytical bibliographies specific to dry tropical regions in the field of nurseries, plantation establishment and management, with triennial revision.

17.3 Directory of forestry research in dry tropical Africa, with triennial revision.

17.4 Directory of forestry development in dry tropical Africa, with triennial revision.

17.5 Nurseries: evaluation of techniques used, dissemination of knowledge, planning of further research, including: evaluation of existing techniques and practices, distribution of technical data sheets and extension manuals, preparation of project documents, and performance of research contracts.

17.6 Plantations: evaluation of techniques used, dissemination of knowledge, planning of further research, including: evaluation of existing techniques and practices, distribution of technical data sheets and extension manuals, preparation of project documents, and performance of research contracts.

17.7 Development of a method for site description, including: theoretical approach and preliminary data

collection, testing of the method through a network of observation areas (a case study), appraisal and final adjustment of the method.

17.8 Hardening under Sahelian conditions of gum acacias propagated by tissue culture.

18. Nursery and fuelwood plantation practices in arid and semi-arid zones of North-East Africa. This document did not propose any particular projects but discussed points to be considered in the preparation of projects. A checklist of topics worthy of further research included the following ten main subjects:

18.1 Sociology and institutions

18.2 Choice of species and provenances.

18.3 Seed handling

18.4 Nursery practices.

18.5 Plantation establishment.

18.6 Plantation management and protection.

18.7 Soil relations

18.8 Tree improvement.

18.9 Economics

18.10 Ergonomics

19. At the close of the Nairobi I workshop participants were asked to state their level of interest in each proposed program and component research projects. Interest was rated subjectively as low, medium, or high. Scores were tallied with respect to replies from representatives of the country or countries involved in a project, donor agencies, and other participants at the workshop. Two proposed programs received high ratings and were discussed at the Nairobi II meeting in early 1987. The other projects await attention of donor agencies.

Nairobi II, Kenya, 1987

20. Two program proposals were carried forward from the Nairobi I workshop to a second meeting in the same city during February-March 1987. The second workshop at Nairobi was organized to develop in depth and detail its subject topics "Tree Improvement and Silvo-pastoral Management of Savanna Woodlands in the Sahel and North Sudanian zones of Africa". An outline for selection and genetic improvement of multipurpose trees and shrubs (see paragraph 15 above) was of high interest to 89 per cent of the African participants and 82 per cent of the forestry advisers of the donor agencies at Nairobi I. Directors of research and tree breeders from 14 of the 16 countries concerned then met to refine the outline. A revised draft project document was presented at the meeting of the Special Program for African Agricultural Research (SPAAR) in Paris, France, in May 1987. France has agreed to fund the

international coordination of this sub-regional project for an initial period of 19 months. FAO is the executive agency and the coordinator has just taken up his appointment, based in Djibouti. Total cost of this project is estimated at US\$32.4 million spread over 5 years; the coordination component is estimated to cost US\$2.6 million.

21. The second highly-rated proposal at Nairobi I was for research and development of techniques for natural regeneration in silvo-pastoral management of existing forest resources (see paragraph 13 above). This proposal was rated highly by 50 percent of the African participants and 70 per cent of the forestry advisers at Nairobi I. The revised project document prepared at Nairobi II was also presented to SPAAR at Paris in May 1987. Each pilot management center has been estimated to cost one million dollars spread over 5 years and 10,000 hectares. Four centers are envisaged, to cover the four combinations of continental versus maritime climate and Sahelian (200-600 mm) versus Sudanian (600-800 mm) rainfall.

22. The proceedings of the Nairobi II meeting are now being printed. However, the coordinator of IUFRO's special program for developing countries prepared a summary in November 1987 giving the gist of the two proposals. This summary differentiates clearly between the international and national financial contributions required for each project. It was circulated to the forestry advisers of the donor agencies at the TFAP meeting in December 1987. Both proposals will be reviewed by the Forestry Working Group of SPAAR in May 1988.

Huaraz, Peru, 1987

23. The fourth of the regional research planning workshops organized by IUFRO's special program for developing countries covered tropical Latin America. It was held in Huaraz, Peru, in July 1987 and titled "The Role of Multipurpose Tree Species in the Life of Rural Communities" (Palmer *et al.* 1988, in preparation).

24. Planning for the workshop began with a region-wide tour by Oscar Fugalli (IUFRO) and Les Whitmore (USFS) in 1984. During 1985 and 1986 consultants funded by FAO and US-AID's ROCAP prepared background papers. These were discussed during a preliminary meeting at CATIE in Costa Rica in February 1986. Pairs of authors (one Latin American and one nonlatino) were identified and invited to contribute to the workshop. Latin America was divided into six ecogeographic zones and one document was commissioned for each zone.

25. In addition, two "umbrella" papers were requested. One paper covered research into the social cultural and economic factors which have tended to be neglected or under-rated in social forestry projects. A second paper covered the role of management information systems. It was not possible to obtain a document in the form of a project proposal for the social factors. However, these factors have been taken into account in some of the other documents.

26. During the preliminary meeting at CATIE, short-lists were prepared of the top priority MPTS for each of the six zones.

The premise was that major advances in productivity would be obtained only by concentrating efforts on a very limited number of species, as has been demonstrated vividly in agriculture. The lists were circulated to the concerned countries and amended by the national forest services.

27. There were 28 participants from 16 countries of Latin America, but donor agencies were much reduced in representation compared with previous meetings in Asia and Africa.

28. Revised versions of the Huaraz papers, when compared with papers from preceding workshops, showed improvement by clearly indicating responsibilities. A criticism of previous proposals had been that they gave too little recognition of preferences among donors for bilateral funding; it was difficult to separate regional from national components of networks. Papers from Huaraz showed what was required to establish the regional office of coordination, as well as the individual national contributions, for each project. There was also more emphasis on diffusion of results and application of technology generated by the projects. Six papers discussed at the workshop are summarized in paragraphs 29-34.

29. A paper covering MPTS in dry zones of Mexico, Central America and the Caribbean proposed 5 projects:

29.1 More widespread application of techniques for MPTS cultivation which were developed during the ROCAP-financed Central American regional fuelwood project (1980-85). The project would help to strengthen the capability of public and private forestry organizations to undertake their own development, as well as extension work.

29.2 Development of agroforestry systems, including living fences, alley cropping, garden orchards, forage production, and improvements to shifting cultivation practices. Diffusion of techniques through in-service training and participation in the research, as well as through formal courses, was included in the project proposal.

29.3 Evaluation and conservation of species and provenances of *Leucaena*. This project would extend: the scope of existing studies on the genus through the establishment of a network of standardized trials and seed production areas; the conservation *in situ* and *ex situ* of species in danger of extinction; and basic studies on taxonomy, natural geographic distribution, phenology and genetic variation.

29.4 Management of secondary vegetation, secondary in the sense of arising naturally on land previously cleared, farmed and then abandoned. The study would concentrate on techniques for degraded secondary vegetation and for management of areas affected by invasive weeds.

29.5 Evaluation of the agroforestry potential of *Crescentia alata*. The basic biology of this definitely multiple-use and quite abundantly fruiting tree is poorly known. Justification for the project is the high potential of the species as a dry-season forage.

30. A second paper discussed at Huaraz for the region of Mexico, Central America and the Caribbean concerned a single project, genetic improvement of MPTS. Work already under way in the region needs to be supplemented by formally designed trials networked through participating countries, to cover more ecological zones. The project would supply certified seed of improved species and develop techniques for their vegetative propagation.

31. An equivalent paper on MPTS in the dry zones of South America proposed two projects, one on genetic resources and one on management of woody vegetation.

31.1 The first project, on the exploration, evaluation and use of genetic resources, included conventional aspects of botanical exploration, taxonomic studies, seed collection and establishment of networks of trials with standardized procedures, together with evaluation of the trials. Provision was made also for conservation *in situ* and *ex situ* of species under study and, as a late phase in the project, establishment of bulk supplies of improved genetic material.

31.2 The second project was closely linked to the first and covered conservation, management and sensible use of existing natural woody vegetation. Executors would compile case studies on existing management methods and evaluate impacts of various land uses on genetic resources. Demonstrations would be established to show possible and sustainable combinations of conservation of genetic resources and continued provision of goods and services.

32. The lowland humid zone of South America was covered by a single project proposal with four components. The original document was more orientated to production of timber than to MPTS, arguing that there was little shortage of forest products for domestic consumption within the humid zone and that the priority was for more and better research on conventional silviculture. Participants at the workshop worked with the author to produce suggestions for a second draft more in keeping with the title of the meeting. Recommendations involved more emphasis on agroforestry and planted MPTS and less on management of natural forest.

33. Two draft papers covering the northern and southern parts of the South American highlands were amalgamated by consensus at Huaraz into a single document. Nine projects were proposed:

33.1 Conservation of genetic resources of MPTS, especially species of *Buddleia* and *Polylepis*, in the high Andes, and their vegetative propagation. This project included preparation of a field guide to identification of species, *in situ* and *ex situ* conservation, and development of techniques for vegetative propagation of shy-seeding species and those in danger of extinction.

33.2 Bulk supply of genetic material for trials and pilot plantations, through identification and protection of suitable plantations. These would be thinned to encourage seed production and improve availability of material for vegetative propagation. Genetic material would be distributed widely.

33.3 Establishment of a network of yield plots and preparation of a field guide to selection of species for different sites, and their silviculture.

33.4 Selection of species and provenances suitable for compacted soils and development of economic techniques for soil amelioration to improve growth of MPTS.

33.5 Documentation of case studies of existing silvo-pastoral systems and development of improved techniques for the northern Andes.

33.6 Socioeconomic evaluation of sample situations selected from a preliminary inventory of reforestation programs. This evaluation would be the basis for development of incentive systems for non-government reforestation schemes. A large number of associated studies are proposed on yields of different products, costs and benefits, marketing, social/financial/ economic analysis of reforestation projects, etc. The ultimate intention is to produce complete packages of techniques and information to help promotion of new reforestation projects.

33.7 Establishment of a regional network for forestry information, through creation of documentation centers, bibliographic databases and printed catalogues and distribution of summaries from selected literature.

33.8 Training of staff in methods of silvicultural research, including application of standard techniques for establishment of trials, their evaluation and processing of the data into a regional database.

33.9 Updating inventories of research activities related to silviculture, sociology, and economics in existing and proposed projects concerning MPTS. This would lead to establishment of coordinated research and wide dissemination of results.

34. The last of the six documents discussed at Huaraz concerned the management information system (MIS) for the ROCAP-financed Central American regional project "Madelena", the follow-on to the regional fuelwood project, and its proposed extension to other countries of the region.

35. The proceedings of this meeting are still in preparation, owing to the long period needed by some authors to revise their proposals after discussions at the workshop.

Manaus, Brazil, 1984

36. The preceding four regional research planning workshops were planned and organized by the coordinator of the special program for developing countries and covered the "growing side" of forestry. The products or utilization side of IUFRO's special program has been covered, through mutual agreement, by IUFRO's Project Group P5.01-Properties and Utilization of Tropical Woods.

37. The first tropically-oriented action by P5.01 was a survey of opinions in South America. The surveyor visited 9 countries to discuss possibilities of improved utilization of trees grown in natural or man-made forests. The report

summarizing opinions of the senior research engineers and technical officers concerning research priorities was discussed at a meeting of the Project Group at Manaus, Brazil, in November 1984, just a few months after the July-August survey. The meeting was attended by 54 research workers, of whom 16 were from Brazil, 16 from other Latin American countries and 9 from 7 countries in Africa, Asia, and Oceania.

38. The survey report was supplemented by discussions at Manaus and issued as a draft Program for Action (Freitas *et al.* 1986). Six subject areas were proposed (see paragraphs 39-44). For each area a lead agency would establish and coordinate a network. Subject areas (called "goals" in the Program for Action) were related, but projects within each could be executed independently. The draft program stressed that the intention is not accumulation of knowledge but use of knowledge for betterment of living conditions of people in the countries concerned.

39. The first subject area concerned housing. The objective is to produce designs of houses to be constructed partly or wholly of wood from presently less-accepted species and to construct prototypes based on structural systems developed in local laboratories. Cooperation of builders, business interests and government or private agencies will be sought to ensure a sound commercial basis. A publicity campaign will be launched to promote the housing and prepare the way for establishment of housing estates using new designs and experience.

40. Wood properties was the second subject area and is basic to all other work. Technological properties must be known with adequate accuracy, particularly for introduction of commercially less-accepted species. An initial quick screening will provide preliminary results for use by other subject areas, followed by more detailed determination, testing and establishment of rules for grading, derivation of design stresses, etc.

41. The third subject area, wood processing, is designed to provide direct assistance to the wood conversion industry in basic processes such as sawing, drying, glueing, preservation and surface finishing.

42. Residues, the fourth subject area, should be minimized in harvesting and processing and if unavoidable should be utilized profitably. Studies will include production of energy, in cooperation with other ventures looking at the fuelwood problem.

43. The fifth subject area is conceived as organized coordination of the whole program through networks, strengthening of institutions, and fellowships. Exchange of research staff and twinning of institutions are also contemplated.

44. Finally, a sixth and key subject area is technology transfer, to bring results of other research to the industry and consumer and to ensure applications and profitable uses.

45. At the end of 1987 IDRC indicated possible support for a "South America Technology Transfer Training Session", as a first step in implementation of the Program for Action.

Southeast Asian Forest Products

46. A similar Program for Action to improve utilization of timber resources in Southeast Asia, has been prepared by IUFRO's P5.01 (Kauman, Tesoro and Wong 1987). Like the program for South America, the proposal for Southeast Asia has been based on a survey by a consultant financed by IDRC. Eight countries were visited in May 1985. The results were discussed at a Project Group meeting during August 1985 at Singapore. Five main and two supplementary subject areas were proposed. These are mentioned briefly in paragraphs 47-53.

47. Light building components are the first subject area. The objective is to assist small industrial enterprises and cottage-type industries in manufacturing building materials and components for low-cost dwellings for under-privileged parts of urban and rural populations. The program would feature using local timbers, particularly lesser-known species, in the form of scantling or derived products. This project would involve work on wood preservation, fire retardants and social acceptability of timber components.

48. The second subject area concerns utilization of plantation-grown timber and of lesser-known species from natural forests. The work will concentrate on those species available in appreciable volumes and for uses primarily in domestic markets.

49. Cottage industries are addressed in the third subject area, use of rattan, bamboo, and rubberwood in products for local markets. More advanced processing to furniture might be considered for rubberwood. Preservation with readily available chemicals would be studied.

50. Stemwood from palms is the fourth subject area, especially from oil palms. Five individual projects proposals have been prepared, for submission to IDRC and UNDP.

51. The fifth and last main subject area concerns residues. Several topics are proposed for possible projects: improved logging techniques to reduce waste left in the forest, collection of unavoidable logging waste for fuel and other uses, improvement of primary techniques of conversion, and adaptation of manufacturing methods for obtaining

secondary products from residues of primary conversion processes.

52. The first supplementary subject area is development of networks for utilization research, to support the networks on MPTS for the "growing side" which were suggested at the meeting in 1984 at Kandy, Sri Lanka.

53. The second supplementary subject area is application of research, mainly through training of extension staff to work with local industries.

54. Apart from proposals prepared in the fourth subject area (utilization of palm wood), the outlines prepared by Kauman, Tesoro and Wong (1987) are quite brief. A meeting has been suggested by IUFRO's P5.01 to prepare draft project documents for submission to donor agencies.

African Forest Products

55. Continue the work of IUFRO's P5.01 to a third continent, Sales (1987) prepared a proposal for another questionnaire survey of research needs on wood technology. The large number of countries in Africa and the limited time available do not allow individual visits. The Project Group decided after the 18th IUFRO World Congress in 1986 to limit the survey to 18 countries. Criteria for choosing sample countries are given by Sales (ibid). The survey may take place during 1988.

Other Workshops Planned

56. Obviously, the coverage of regional research planning workshops is incomplete. The special program for developing countries of IUFRO has draft plans for meetings to cover the dry lowlands of eastern and southern Africa, the "miombo" woodland zone, in 1988 and the anglophone Caribbean in 1989. The Caribbean workshop will take into account outcome of the TFAP mission for the same region and of TFAP's forestry sector review planned for an individual country in the Caribbean. Both are proposed for 1988.

ANNEX 5Training Courses Given and Planned

Two training courses have been organized during 1986 and 1987 by IUFRO's special programme for developing countries. A third is scheduled for 1988-1989 and others are proposed.

Research management, 1986

The Forestry Training Program (FTP), part of the National Board of Vocational Education of Finland, gave training at Nairobi, Kenya, in the management of forestry research to some 20 participants from anglophone Africa. Countries represented were Ghana, Kenya, Nigeria, Somalia, Tanzania, Uganda, Zambia and Zimbabwe. The course ran for 17 days. The papers presented were compiled and published later (Temu *et. al.* 1987). Funds were provided by FINNIDA. The course was given in collaboration with the Faculty of Forestry at University of Agriculture, Tanzania.

Research methodology, 1987

A course on statistical methods for forestry research was delivered at Gmunden, Austria, during September and October 1987. The Government of Austria sponsored 12 participants from 11 of the least developed countries and FAO sponsored nine participants from seven countries. Countries represented were Bangladesh, Bhutan, Botswana, Chile, Ethiopia, Kenya, Laos, Lesotho, Mozambique, Niger, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Turkey and Uganda. the course ran for six weeks and was conducted in English by staff mainly from the Oxford Forestry Institute, United Kingdom.

Research management, Southern Africa, 1988-89

IUFRO's regional co-ordinator for anglophone Africa will organize a workshop on the management of forestry research for 20 countries in the SADCC group, using funds from the World Bank. It may be possible to give the course in both English and French.

Latin America

Negotiations have been started for a course on management of forestry research for Spanish-speaking participants from Latin America.

ANNEX 6

Genetic Improvement of Multi-Purpose Tree Species and Seed Production in the Sudan-Sahelian Zone: Required External Contributions by Country (US\$'000) for the Period July 1989 to December 1990

		<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Total 5 Years</u>	<u>First 18 months</u>
Burkina Faso	1.*	886	1. 1,254	1. 643	1. 605	1. 600	1. 3,988	1. 1,513
	2.	655	2. 482	2. 495	2. 475	2. 470	2. 2,577	2. 896
	T.	1,541	T. 1,736	T. 1,138	T. 1,080	T. 1,070	T. 6,565	T. 2,409
Cape Verde	1.	192	1. 152	1. 136	1. 64	1. 37	1. 581	1. 268
	2.	23	2. 22	2. 21	2. 21	2. 21	2. 108	2. 34
	T.	215	T. 174	T. 157	T. 85	T. 58	T. 689	T. 302
Chad	1.	298	1. 145	1. 115	1. 160	1. 137	1. 855	1. 370
	2.	186	2. 150	2. 164	2. 107	2. 73	2. 680	2. 261
	T.	484	T. 295	T. 279	T. 267	T. 210	T. 1,535	T. 631
Gambia	1.	98	1. 71	1. 61	1. 83	1. 56	1. 369	1. 133
	2.	19	2. 19	2. 18	2. 18	2. 18	2. 92	2. 29
	T.	117	T. 90	T. 79	T. 101	T. 74	T. 461	T. 162
Guinea Bissau	1.	223	1. 187	1. 148	1. 79	1. 43	1. 680	1. 316
	2.	14	2. 13	2. 13	2. 13	2. 13	2. 66	2. 21
	T.	237	T. 200	T. 161	T. 92	T. 56	T. 746	T. 337
Mali	1.	311	1. 132	1. 111	1. 156	1. 133	1. 843	1. 377
	2.	253	2. 168	2. 182	2. 130	2. 91	2. 824	2. 337
	T.	564	T. 300	T. 293	T. 286	T. 224	T. 1,667	T. 714

Annex 6 (continued)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Total 5 Years</u>	<u>First 18 months</u>
Mauritania	Breakdown between 1. and 2. is not available in project document						
	T. 1,041	T. 338	T. 280	T. 350	T. 283	T. 2,292	T. 1,210
Niger	1. 290	1. 150	1. 114	1. 154	1. 135	1. 843	1. 365
	2. 191	2. 155	2. 170	2. 112	2. 79	2. 707	2. 268
	T. 481	T. 305	T. 284	T. 266	T. 214	T. 1,550	T. 633
Senegal	1. 350	1. 157	1. 119	1. 156	1. 161	1. 943	1. 428
	2. 123	2. 83	2. 98	2. 140	2. 104	2. 548	2. 165
	T. 473	T. 240	T. 217	T. 296	T. 265	T. 1,491	T. 593
TOTAL 9 CILSS Countries						T.16,996	T. 6,991
Co-ordina- tion Unit	949	839	798	673	694	3,953**	1,368
			(**of which 2,493 for personnel 357 for training 233 for equipment 354 for office space, translation, transport, etc. 516 for contingencies (15%))				
GRAND TOTAL for CILSS countries plus co-ordination						20,949	8,359

Annex 6 (continued)

*1. Seed unit establishment, exploration, collection and procurement/distribution of seed.

2. Conservation of genetic resources and tree improvement.

T. Total external contribution (1. + 2.).

Annex 7: Management of Savanna Woodlands: Kenya, Somalia, Sudan, Cameroon, Nigeria and Tanzania
Budget Covering the Contribution of the Donor(s) (One 10 000-Ha Centre)
for the period July 1989 to December 1990

Items	COSTS											
	Total		Year 1		Year 2		Year 3		Year 4		Year 5	
	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$
10 Personnel												
11 Technical personnel												
01 Principal technical adviser	36	306 000	12	102 000	12	102 000	12	102 000	-	-	-	-
02 Consultants	3	25 500	3	25 500	-	-	-	-	-	-	-	-
13 Support personnel												
01 Specialists	840	124 400	168	24 880	168	24 880	168	24 880	168	24 880	168	24 880
02 Permanent workers	900	79 200	180	15 840	180	15 840	180	15 840	180	15 840	180	15 840
03 Temporary workers	300	27 000	60	5 400	60	5 400	60	5 400	60	5 400	60	5 400
04 Extraordinary specialists	81	12 150	81	12 150	-	-	-	-	-	-	-	-
05 Meetings & training	-	65 000	-	13 000	-	13 000	-	13 000	-	13 000	-	13 000
Section total	2 160	639 250	504	198 770	420	161 120	420	161 120	408	59 120	408	59 120
40 Equipment												
41 Durable equipment												
01 Site		10 165		10 165		-		-		-		-
02 Calculation & office		7 100		6 000		1 100		-		-		-
03 Transport		88 000		80 000		8 000		-		-		-
04 Building		55 000		55 000		-		-		-		-
42 Non-durable equipment (office, drafting, site)		10 000		2 000		2 000		2 000		2 000		2 000

Annex 7: Budget Covering the Contribution of the Donor(s) (Continued)

Items	COSTS											
	Total		Year 1		Year 2		Year 3		Year 4		Year 5	
	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$
43 Accommodation & training supplies		20 000		20 000		-		-		-		-
Section total		190 265		173 165		11 100		2 000		2 000		2 000
50 Maintenance												
01 Vehicles		139 812		14 000		28 000		30 000		32 000		35 812
02 Office computing		27 500		8 500		5 000		5 000		5 000		4 000
03 Communication		2 500		1 000		-		500		-		1 000
Section total		169 812		23 500		33 000		35 500		37 000		40 812
Overall total		999 327		395 435		205 220		198 620		98 120		101 932
Grand total = US\$1 000 000												

*The calculation of \$3 million of needed donor support is obtained by taking the total budget for Year 1, half the budget for Year 2 and multiply by 6 (the number of countries).

Annex 7: Savanna Woodlands Network (Kenya, Somalia, Sudan, Cameroon, Nigeria and Tanzania)
Budget Covering the Contribution of the States (CFA)
for the period July 1989 to December 1990

COSTS												
Items	Total		Year 1		Year 2		Year 3		Year 4		Year 5	
	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$	h/m	US\$
10 Personnel (including travel)												
11 Technical personnel												
01 Managers	120	36 000 000	24	7 200 000	24	7 200 000	24	7 200 000	24	7 200 000	24	7 200 000
Technical staff	160	28 000 000	24	5 600 000	32	5 600 000	32	5 600 000	32	5 600 000	32	5 600 000
Field staff	320	35 200 000	64	7 040 000	64	7 040 000	64	7 040 000	64	7 040 000	64	7 040 000
02 Consultants												
Pedologist	1	300 000	1	300 000	-	-	-	-	-	-	-	-
Sociologist	2	600 000	1	300 000	1	300 000	-	-	-	-	-	-
Section Total	603	100 100 000	122	20 440 000	121	20 140 000	120	19 840 000	120	19 840 000	120	19 840 000
40 Equipment												
41 Durable equipment												
Buildings & installations	-	25 000 000		25 000 000		-		-	-			-
Section total		25 000 000		25 000 000		-		-	-			-
Overall total	603	125 100 000	122	45 440 000	121	20 140 000	120	19 840 000	120	19 840 000	120	19 840 000

Grand total cost + \$125 000 000 CFA

ANNEX 8LIST OF REFERENCES

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