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CADA FORESTRY AND FUELWOOD PRODUCTION INITIATIVES IN SELECTED AFRICAN COUNTRIES

A report on reconnaissance visits to selected countries: Senegal, Upper Volta, Malawi, Burundi and Somalia

by

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Abstract and Summary

At the request of the Bureau for Africa of the U.S. Agency for International Development, Frances Gulick, CADA forestry initiative coordinator, and Kevin Mullally, Forestry Advisor, visited the five selected African countries as well as AID regional support offices in Abidjan and Nairobi, between August 10 and September 6, 1981. The countries are Senegal, Upper Volta, Malawi, Burundi and Somalia.

The purpose of the visit was to describe and discuss with USAID officers and, as desired, other CADA representatives, the objectives, criteria and content of the CADA forestry-fuelwood initiative and to identify existing bases for ad hoc within country technical working groups. In Malawi and Somalia African technical officials were also briefed, as arranged by the USAID missions. (For the substance of the briefings by the U.S. team, reference may be made to the document "Progress Report and Background Briefing Paper", dated September 15, 1981.)

The principal findings of the U.S. team, which were reported to CADA representatives at the second ad hoc technical meeting held in Paris, September 9, 1981, are:

1. Within each country, African plans and planning capabilities appear to be farther advanced than had been expected. All five countries have, or will have in the near future, sector analyses and/or five-year development plans in the forestry-fuelwood sector. These can provide an existing substantive base for more coordinated host country-donor program planning and project support, more closely tailored to fill gaps in the present national efforts.

2. In each country, coordinating points of contact already exist within the African government's own development planning system, at both the overall policy planning level and at the technical forestry-fuelwood sector planning and review level. A useful contribution to the CADA objective--"to help African governments to increase their capacity to undertake . . . . larger scale forestry and fuelwood production programs"--will be to use these host country coordination mechanisms as the primary channel through which future African-donor assessments and forward programming can take place.

3. The CADA concept and process is itself already contributing to an improved understanding of the key elements needed for successful national programs in any country. Each CADA member has, in the course of the past eight months, made significant conceptual contributions that can improve the effectiveness of our own, other donor and African country efforts.

4. Forestry-fuelwood revolving funds are featured in the current program planning of several of the countries. These deserve to have enhanced CADA member attention and support.

For each of the countries visited, findings are described under six topics: National plans and planning; size of the problem; existing coordinating mechanisms; offer of Landsat based map reproduction service; existing base of CADA forestry projects; other donor forestry projects; and overall CADA members official development aid.

The last named item is a significant factor in the evolving CADA process, given the primary objective of the CADA initiative in this sector, namely, that:

> CADA donors should bilaterally and collectively use their influence and overall assistance resources to help African governments to increase their capacity to undertake, as fast as is technically possible, larger scale forestry and fuelwood production programs as part of their overall land use planning and socio-economic development efforts.

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Introduction

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This report presents their general findings and brief summaries for each country visited.

GENERAL FINDINGS

General findings of the U. S. team, which were reported to CADA representatives at the second ad hoc technical meeting held in Paris, September 9, 1981, concern current African plans and planning capabilities in each of the countries, existing in-country coordinating mechanisms, member contributions to the CADA program planning process, and a comment on forestry-fuelwood revolving funds.

1. Within each country, African plans and planning capabilities appear to be farther advanced than had been expected. All five countries have, or will have in the near future, sector analyses and/or five-year development plans in the forestry-fuelwood sector. These can provide an existing substantive base for more coordinated host country-donor program planning and project support, more closely tailored to fill gaps in the present national efforts.

Critical areas, identified at the first CADA ad hoc technical meeting on forestry and fuelwood initiatives, remain unsupported. In selected functional areas, detailed project designs already exist, prepared by expert technical teams requested by the African country. CADA members will want to review these projects to be sure they are adequate in terms of the CADA technical review of priority areas and that they meet each member's internal bilateral aid programming requirements. However, it seems likely that not many new project design teams will be needed in the next stage of CADA supported assistance in each country.

2. In each country, coordinating points of contact already exist within the African government's own development planning system, at both the overall policy planning level and at the technical forestry-fuelwood sector planning and review level. A useful contribution to the CADA objective--"to help African governments to increase their capacity to undertake . . . . larger scale forestry and fuelwood production programs"--will be to use these host country coordination mechanisms as the primary channel through which future African-donor assessments and forward programming can take place.

3. The CADA concept and process is itself already contributing to an improved understanding of the key elements needed for successful national programs in any country. Each CADA member has, in the course of the past eight months, made significant conceptual contributions that can improve the effectiveness of our own, other donor and African country efforts:

French representatives insisted on the possibility of technical success as a major criteria in selecting countries for initial focus, based on availability of adequate land areas receiving rainfall of 800 mm a year or more. It is recognized that rainfed planting must be the primary basis for all national planting programs.

German representatives insisted on a much broader framework for CADA program planning than fuelwood production alone, with enhanced emphasis also being given to meeting environmental needs, such as watershed protection and other anti-desertification programs, better management of natural forests and general land-use development requirements. It is recognized that much greater attention must be given to capitalizing on yields that can be gained from better management of natural forests and woodlands that still exist.

Belgian planning experts in Burundi have developed a forestry planning policy that identifies and differentiates distinctly different strategies, program concepts and distribution systems for (1) meeting urban and commercial fuelwood (and other energy) needs; and (2) for meeting rural energy needs. It is increasingly recognized that different urban and rural fuelwood supply strategies will be needed, tailored to each country's overall land use requirements and local manpower resources.

Canada has financed, through the IDRC and at modest cost, an innovative village and farm-based forestry research project that, in its five years of pilot experimentation, may well prove to be an improved prototype for nationwide forestry research /extension/rural fuelwood production programs, not only in Malawi but also other countries in the initiative.

The United Kingdom is financing training programs in improved charcoal production, including the design of improved kilns, as well as testing of traditional and improved woodstoves. Conservation in methods of fuelwood use is already recognized as a crucial element in any successful national program. UK training facilities and experience can usefully be drawn on by all donors and by the African countries selected for initial

CADA focus. Additionally, among CADA members, the UK has the largest and longest standing experience in manmade plantations. Its Malawi Vipya plantations comprise 54,000 hectares, now matured to seventeen years of growth. Yields and cost data from this project should be useful to other donors who are engaged in or are contemplating new manmade plantation projects.

4. Forestry-fuelwood revolving funds are featured in the current program planning of several of the countries; these deserve to have enhanced CADA member attention and support. A large commercial market already exists for charcoal and fuelwood in all of the CADA targetted countries. Internal prices for both fuelwood and charcoal are already approaching the BTU equivalent for imported petroleum products, the primary source of commercial energy in all of the countries. With timely planning for management of future urban and rural fuelwood supply systems, mechanisms can be worked out so that revenues generated can be recycled through revolving funds to meet both recurring costs and additional capital development requirements. CADA members can profitably explore their own and other donor experiences and approaches worldwide to find and analyse already tested mechanisms which might be adapted in the five initially selected countries.

FINDINGS ON SPECIFIC COUNTRIES

Brief summaries are provided for the following countries:

Senegal

Upper Volta

Malawi

Burundi

Somalia

The findings are described under the following topics:

* National plans and planning
* Size of the problem
* Existing coordinating mechanisms
* Offer of Landsat based map reproduction service
* Existing base of CADA forestry projects
* Other donor forestry projects
* Overall CADA members official development aid

It may be noted that the latter is relevant to the first CADA policy decision for this sector, namely, that:

> CADA donors should bilaterally and collectively use their influence and overall assistance resources to help African governments to increase their capacity to undertake, as fast as is technically possible, larger scale forestry and fuelwood production programs as part of their overall land use planning and socio-economic development efforts.

SENEGAL

The Government of Senegal has already demonstrated a strong commitment to larger and more e-fective efforts in forestry, including assuring regular supplies of wood products without destroying the existing cover. As described below, national sectoral planning is well advanced and Senegalese-donor coordinating mechanisms are already in place. France has agreed to serve as primary in-country point of contact for discussion and development of further initiatives supportive of and consistent with the CADA concept and process in this sector. Pending their recommendations, USAID officials briefed the U.S. CADA forestry initiative coordinator, Mrs. Gulick, on current developments during her reconnaissance visit August 11 and 12.

National Plans and Planning Capability

At the request of the Government of Senegal, the French Ministry of Cooperation has undertaken to finance and assist in the preparation of a comprehensive national reforestation and fuelwood production plan and strategy. The result of nearly two years of effort, this draft Plan has recently been delivered to the Bureau of Water and Forests. Once the report is accepted by the Government of Senegal, it will provide the analytical and planning context in which the size of the problem and the effectiveness of existing programs can be jointly reviewed and discussed. The recently completed Sixth Five-Year Plan of the Government of Senegal, covering the period 1981-1985, provides the larger planning framework within which the relative priorities demanded by the forestry/fuelwood sector can be emphasized and confirmed.

Size of the Problem

Although in common with other Sahelian countries, Senegal faces serious deforestation pressures. The country has sufficient remaining forests and woodlands in areas with 800 mm of rainfall a year or more to make larger scale rural and urban planting efforts possible and to assure a reasonable prospect that they will be successful.

Senegal's central west and river plain areas are classified in the FAO global reconnaissance of fuelwood supply/requirement situations as being already a "deficit situation," where minimum fuelwood needs are being met only by cutting in excess of sustainable supply.

Under the auspices of the CILSS-Club du Sahel, a forestry sector analysis study is planned to be undertaken for Senegal in the near future, with the active participation of Senegalese foresters. This study will enable an additional in-country update and refinement of the preliminary estimates prepared by the IBRD Renewable Energy Task Force in June of 1980, which were as follows:

Fuelwood plantations extant in 1980	2,000
Current annual planting	2,000
Annual planting needed to meet fuelwood needs by the year 2000	15,000
Total needed by 2000	300,000
Area of natural forests	100,000

Existing Coordinating Mechanisms

In part spurred by the rising problem of dealing with recurring local costs associated with development programs financed by foreign investment, the Government of Senegal has recently set up an office to define priorities among future development efforts. Whether this will be established in the Ministry of Plan, Finance or the Cabinet has not yet been finally settled, but it provides a Senegalese-led coordinating point of contact which CADA members could support and use. There has been discussion within the Ministry of Rural Development of appointing an officer with specific responsibility for reviewing relative priorities and local cost implications of current and proposed development costs within that sector.

A GOS and donors meeting is scheduled to be held in Paris October 19-21, 1981 and provides a forum in which the priorities to be accorded to forestry and fuelwood could be discussed in the context of overall longer term development assistance and planning. In order to heighten other donor awareness in this sector and to encourage a coordinated approach, the U.S. is suggesting to the GOS that the afforestation and fuelwood production program be included in the agenda of this meeting.

Offer of Landsat-based Map Reproduction Services

The Government of Senegal has recently signed a project agreement, financed by USAID, which will provide baseline resource data, based on Landsat, scheduled to be available within twelve months after project start-up. This will provide a basic soils/vegetation map, five additional sectorally geared maps, and 15 thematic maps and updates, at a total cost of $1,200,000. This is part of a multidonor assistance effort to increase Senegalese capacity for land use planning and management, with other donors providing technical and other institution-building assistance.

It is possible that some additional CADA-sponsored aid may be useful after the base maps are completed to provide multiple copies of the final product, over and above those provided under the project. For the time being, however, this project serves the purpose intended by the CADA-offered initiative.

Existing Base of CADA Forestry Aid

Four out of the six CADA members are actively engaged in forestry and fuelwood projects in Senegal.

France	Experimental reforestation projects using irrigation: 40 hectares (1980-82, 2.5 MF or about $561,000). Assistance to the master plan for forestry for the nation (1980-81, $538,000, contributions from both FAC and CCCE). And also, Reforestation in the Centre-Est of an area of 1,2000 hectares (three-year program, 1978-81, $1,143,000, provided by both FAC and CCCE as part of the IBRD program).
Canada	Gum arabic production and rural forestry: four years, 1980-84, C$ 332,600, GOS contributing $259,700. Objective: to establish a Sahelian zone of economic forest plantations of gum arabic for the foreign market and tree forage availability to support the food needs of livestock in the dry season, especially in years of drought and scarcity. In the long run, to achieve a woods/forage system taking account of the biologic potential and ecologic conditions

of the Sahel. Specific objectives of the second phase are: (a) continue yield trials of indigenous and exotic accacias to select the best types for gum production and forage; (b) reduce the cost of forestation by perfecting new artificial and natural techniques of propagation; (c) improve the methods of production of gum and forage; (d) continue training of Senegalese researchers in forest research.

CIDA-supported projects include: Senegal Forest Protection: Provide forest and brush fire protection in Casamance area. six years, 1975-81, C$ 1,600,000.

Senegal Dune Stabilization: Brake the advance of the desert along the coast of Senegal to preserve the agricultural protection of the region (three years, 1980-82, C$ 900,000).

United States

Bandia Fuelwood Production, Phase I (Obligated through 1981, $2.8 million, life of project costs estimated at $3,134,000). Village and community woodlots (several projects totalling $888,000 for life of projects so far committed). Secondary wood product production, rural gum arabic reforestation (obligated through 1980 and life of project, $497,000). Proposed reforestation and dune fixation project (3-year, $6.9 million project to plant 3,700 hectares of trees along NW coast funding through Food for Development Program). Well-point plantings, a component of the SODESP livestock production project. (Through 1981, forestry component only, $830,000). National plan for land use, including identification of areas for forestry (obligated in 1981, $1 million, life of project estimated at $1,200,000).

Other donor forestry aid

Other donors include the FAO/UNDP and Switzerland (both providing training assistance), the World Food Program in some forest plantings (1977-1981, $3.5 million) and the World Bank. The Bank's project, initiated in 1981, is being co-financed by France. (Total project costs of $17.1 million are financed as follows: IDA $9.3; FAC (France): $1.8; CCCE $3.4; Government of Senegal $1.8.) The project, which covers five years, 1981-1985, is intended to strengthen the forestry department's capabilities of handling more comprehensive programs, includes studies of better uses of wood and substitutes, benefits of rural afforestation and feasibility of a follow-up project, in addition to several quite large planting and other forest management programs: Establishment of 2,000 hectares of rain-fed plantations; experimental management of 2,000 hectares of natural forests; 1,500 hectares of family plantations, and 1,500 hectares of rural community plantations.

Cada Members' total official development aid ($ millions)

Donor	1978	1979	1968-79
United States	14.0	27.0	89.0
France	79.6	84.3	567.6
Canada	10.5	9.2	63.9
Germany	5.8	11.7	59.3
Belgium	5.0	7.7	24.7

UPPER VOLTA

At the time of the reconnaissance visit, August 12-16, 1981, Germany had indicated a preference to leave development of next steps in the initiative to the U.S. Canada had declined to serve as point of contact at this time because Canadian-Upper Volta negotiations on next-stage overall economic development aid were scheduled. Mission Director has served as interim informal CADA point of contact.

National Plans and Planning Capacity

A national Forestry Policy Paper was issued by the Government of Upper Volta in June 1981. Although this does not yet constitute a long-range plan, it could provide a framework for a review of current and proposed donor efforts, at the policy level, if CADA members wish to engage in a more systematic discussion of policy issues. A Canadian Sector study provides a complementary, comprehensive and up-to-date analysis for joint considerations. This was completed in mid-1981.

Two informal meetings of CADA members in Ouagadougou were held on the invitation of the USAID Mission Director, Mr. Richard Meyer, to brief representatives on the background and suggested in-country processes envisioned for a CADA forestry initiative. French and German representatives (who had not previously been informed) expressed some concern as to the desirability of injecting <u>any</u> new policy initiatives into the current overall development assistance negotiations with the Government of Upper Volta.

It was agreed, however, as a first step, to call an informal meeting of in-country donor technical forestry specialists and others involved in forestry programs to discuss FAO and IBRD recent reports on forestry and fuelwood requirements (see next section).

The Size of the Problem

An in-depth study of forestry and fuelwood requirements for Upper Volta is being prepared in-country by the FAO at the request of the Ministry of Environment and Tourism. It is due to be completed at the end of the year.

Meanwhile, at the informal request of CADA members, an ad hoc technical judgment on the validity of the IBRD estimates of land use requirement implications and projected fuelwood demand is being solicited by a U.S. technician (under contract at the Dinderossa Forestry School) from CADA and other forestry technicians working in the country. He will also undertake to prepare a brief summary of existing host country and donor efforts, following the matrix circulated with the background paper.

Existing Coordinating Mechanisms

The Government of Upper Volta has already set up two coordinating committees concerned with forestry: one dealing with village level efforts, the other with management of forests.

* Village forestry

The Government of Upper Volta has had an informal UV-donor coordinating group concerned with village level planting efforts, including decentralised nurseries, through the "Unite de Bois des Village" since 1979, meeting every three months. This is institutionally a very useful forum and one which deserves to be strengthened by regular and active participation by principal donors. This was formalized in August 1981.

* Management of forests

In early August 1981 the MET formally established a "Unite d'Amenagement de Forets", within the MET, parallelling the earlier established "Unite de Bois des Villages". This includes a GOUV-chaired informal, ad hoc working group composed of the national (and regional) directors of "Amenagement" and the working level donor project directors. The intent is informally to coordinate all GOUV and donor efforts, exchanging experience and engaging in collaborating planning for future efforts, in the field of improved management of natural woodlands and forests. Substantial yields, now lost, can be gained for fuelwood and other purposes, if this is done systematically. (By "substantial", the IBRD estimates in the neighborhood of $7m^3$ per hectare, which may be compared with the yields from the first German tests of its Gonsé eucalyptus plantations, new fast-growing species, of $2m^3$ per hectare.)

The Gonsé tests, which the Germans have just completed, have been received at the technical level, understandably, with shock. The IBRD, French and Germans have concentrated on eucalyptus as the primary choice of fast-growing species for fuelwood. The $2m^3$ per hectare results may be compared with anticipated yields of $10m^3$ per hectare. Such results will obviously influence, for the worse, current estimates of future planting requirements through the year 2000.

Landsat-based Map Reproduction Service

CADA resident representatives will review existing mapping programs and proposals to determine whether, and if so how, an offer of the suggested service should be made to the Government.

Existing Base of CADA Forestry Aid

France	France is financing the establishment of four regional bases of reforestation, with special attention to distribution of nursery seedlings to rural areas. (A four-year program, costing 2.5 MF or about $516,000); a research project in which local and exotic species of eucalyptus will be crossed and multiplied for a seedling production program (2 years, $740,000, financed jointly by FAC and CCCE); eucalyptus plantations in the Wayen forests 7,000 hectares (a five-year program, 1977-82, 14 MF or about $3,140,000, financed by CCCE).
Germany	Germany has a very substantial afforestation program underway, including introduction of improved wood stoves (1974-1981, estimated cost, $5.5 million). The project includes the establishment of 5,000 hectares in six years in the forest reserve area of Gonsé, 25 kilometers from Ouagadougou.

Canada	Canada has completed an overall appraisal of the forestry sector and key issues in the Sahel, including a separate study on Upper Volta. Canada has completed pre-project planning for several new forestry projects, to be considered at the Canadian-Upper Volta Joint Commission in Ottowa in late October, 1981. Among them are three Bois deVillage projects, a forest and wild-life reserve project and decentralized seedling services in 20 sub-prefectures.
United States	The U.S. has a major training project and several small village level pilot projects underway: Aid to the Dinderesso Training Center for lower level forestry agents, and the development of a model management plan for the national forest, in 6,000 hectares adjoining the training center (5 years, 1979-1983, life of project $4,469,000). Small pilot projects include planting windbreaks and micro-catchment constructions, fuel conserving wood stoves, village nursery and woodlot projects, in which Peace Corps volunteers and local villagers are cooperating. A community forestry project is financed as a component of a larger integrated rural development project at Seguenega (Overall project, life of project, $5 million, forestry $170,000).

Other donor forestry aid

A large number of other donors are also active in Upper Volta: The Netherlands, Switzerland, the European Development Fund and FAO/UNDP (from 1975-77), are financing fairly substantial reforestation projects, including both larger plantations and village woodlots. Many non-governmental agencies have smaller, village level projects underway, including the World Council of Churches, the Catholic Relief Organization, OXFAM and Africare. FAO/UNDP is providing three years of technical assistance ($634,000, 1979-1981). This project has been closely coordinated with the training plans under the World Bank.

The World Bank has recently undertaken a five-year, quite comprehensive first phase forestry project (1980-1984, $14.5 million, estimated economic rate of return 14%), with the primary objective of strengthening an expanded Forestry Administration. Local professional and technical staff in Ouagadougou would be increased from 2 to 35, including 20 senior professionals, compared with the present 2. In addition, the project will establish 1,600 hectares of rainfed plantations; conduct management experiments on 1,000 hectares of natural forests; test methods of maintenance of 1,650 hectares of rainfed plantations; establish 325 hectares of rural woodlots. It includes a number of special studies and training.

CADA members total official development aid ($ millions)

Donor	1978	1979	1968-79
United States	20.0	23.0	95.0
France	34.5	38.0	277.0
Germany	16.9	60.9	132.9
Canada	4.5	13.3	28.3

MALAWI

Malawi represents a particularly challanging country as a point of focus for more concerted effort in the forestry and fuelwood sector. On the one hand, the country is already in a deteriorating situation in which minimum fuelwood needs are being met only by cutting in excess of sustainable supply. On the other hand, the climate is, in general, quite favorable for tree growth, the main constraint being the degree of water stress caused by length and severity of the dry season. Most of the country has mean annual rainfall of 800 mm and above. Furthermore, although tree planting is usually carried out on soils which are considered too poor for agricultural use, and thus cannot be expected to produce maximum yields, even these marginal soils are generally sufficiently fertile for successful tree growing. Fuelwood now constitutes 93.5% of total energy consumed.

Although the United Kingdom had been invited to serve as principal CADA point of contact in Malawi (and has since agreed to do so), at the time of Mrs. Gulick's visit, August 19 to 24, 1981, UK representatives had not yet been instructed. The U.S. senior aid official, Mrs. Vivian Anderson, agreed to serve as interim point of contact. The findings below are from briefings by representatives of the Economic Planning Division, Treasury , the Department of Forestry and the Wood Energy Unit, arranged by the Ministry of Forestry and Natural Resources. Representatives of Germany, France and the UK were briefed by Mrs. Gulick on CADA objectives, the concept and proposed processes.

National Plans and Planning Capability

Responsibility for overall development planning lies in the Economic Planning Division of the Office of the President and Cabinet, where final funding decisions are made. The Ministry of Forests and Natural Resources, recently established as a separate Ministry with responsibilities which formerly had been combined with those of Agriculture, has technical responsibility for forward indicative planning in this sector. The Five-Year Plan for 1981/2-1985/6 includes several projects for which fairly detailed project designs exist, but which remain

unfunded. Existing planning capability, already quite sophisticated, is being augmented with British and IBRD assistance.

It may be noted that the Five-Year Plan was drawn up during a period in which government policy concerning the now mature 54,000 hectares of the Vipya plantations, originally intended primarily for pulpwood exports, was, and still is, in question. The pulp and paper market has softened and alternative options as to the use of this valuable standing capital resource are currently being debated. Furthermore, the large-scale Wood Energy Project, involving $11 million in IDA funds and about $3 million in GOM resources, was concluded in 1979. Committed resources dominate pipeline spending in this sector for most of the Plan period.

Consequently, the in-country review process proposed under the CADA concept as a way of determining whether, and if so where, additional resources could increase the effectiveness of existing and future programs comes at an opportune time. Technical officials in the Ministry of Forests and Natural Resources are able and willing to undertake the two tasks outlined in the CADA Background Briefing Paper as precedent to identifying what, if any, additional initiatives could improve the effectiveness of existing programs. The U. S. aid affairs officer has sent a letter to the Office of the President inviting these assessments.

Size of the Problem

The first in-country task identified in the CADA process is to quantify the size of the task, particularly with regard to its land resources requirements and implications. Studies undertaken in 1978 by the Forestry Department are now being refined in studies financed by the Government of Malawi, USAID and the IBRD.

Preliminary findings by the Energy Inventory Group estimate firewood supply and demand for 1980 and 1990 as follows (in thousands of cubic meters of wood):

Demand	1980	1990
Domestic	4,339	6,700
Tobacco	4,667	5,022
Other	419	1,225
TOTAL	10,025	12,947
Supply	8,947	4,877

No firm estimates are available as to the land resource requirements which would be needed to meet current and projected demand from sustained annual yield. A rough projection (assuming that $20m^3$ per hectare could be harvested annually and that demand could be held a the 1990 level) would require planting the equivalent of a total of 647,350 hectares or annual planting from now through the year 2000, of around 32,000 hectares a year.

The Malawi Department of Forestry estimates that without offsetting increases in planting, at present relative rates of growth in demand forest supplies will be totally exhausted in less than 25 years.

Existing Coordinating Mechanisms

The Government of Malawi, at the level of the Office of the President and Cabinet, served as the initiator of donor-government coordination efforts in connection with development of parallel and co-financing of the first phase of the National Rural Development Program, launched in 1978. Among CADA donors, the United Kingdom, Germany and Canada were among principal contributors. That precedent could be followed when the long-range forestry and fuelwood program which is to be developed as part of the IDA-financed Wood Energy Project, is ready for GOM-multi donor discussion.

More informally and at the technical level, the Chief Conservator of Forests serves as point of contact with donors on individual projects and activities, on-going and proposed.

Within the donor community, an informal information exchange on aid and development problems and prospects takes place among nine embassies, including France, Britain and

Germany, whose resident commercial attaches are customarily assigned responsibility for these topics. This serves primarily as an informal coordinating mechanism among representatives whose countries are also members of the EEC and who therefore are called on for recommendations regarding Malawian aid requests to that agency as well as through their own bilateral programs. The U. S. commercial attache is periodically included in these discussions.

Offer of Landsat-based Map Reproduction Service

According to the Chief Conservator of Forests, a major handicap in land use planning for forestry and fuelwood programs is the absence of a country-wide map--whether aerial survey or Landsat-based--which could provide a current baseline inventory of existing forests and woodlands. Such an inventory could be periodically repeated to show in general terms the rate of forest disappearance. Extensive aerial surveys have been flown in the past with UK assistance but are somewhat out of date and expensive to repeat. A project for a Landsat-based inventory is among unfunded requests in the Five-Year Plan.

The Remote Sensing Facility in Nairobi is technically equipped and willing to provide such a service, in color, for Malawi, if officially requested and reimbursed. Photographs adequate to provide virtually full cover are available at the Facility, including some earlier plates for selected areas that show deforestation during the intervening years. At the meeting of the ad hoc technical meeting in Paris, September 9, 1981, the UK representative and an accompanying observer from the Land Resources Development Centre at Tolworth indicated interest in participating in the design of such a project for Malawi should such a request be received.

Existing base of CADA forestry aid

Four of the six CADA members are engaged in forestry and fuelwood programs in Malawi, the most active being the United Kingdom.

United Kingdom

UK assistance to commercial forestry development started in 1963, with aid for the Vipya pulpwood project and the sawn timber plantation project. The now mature plantations cover 54,325 hectares, primarily in pine. About 15% of the cuttings from sustained yield will be used for domestic pulp, sawtimber and board production. Alternative uses are being investigated for the remaining 85% of the resources, including energy and fertiliser production. Another quite large plantation project, growing softwood for sawtimber production, has been financed (£455,000, 1978-80). Began in 1971, the plantations located at Zomba, Dodza and Blantyre covered 11,189 hectares in 1980.

The area of timber plantation required by 2005 was estimated to be 46,417 hectares and an annual planting target of 890 hectares was set in 1976 plus a 486 hectare planting program for 10 years to make up the shortfall in earlier planting. Beginning in 1965, the UK has furnished 16 members to the Forest Department Staff, providing supplemented salaries.

Among other additional projects, UK aid is supporting the following:

Species and provenance trials on sites closer to Lake Malawi for expansion of Viphya project (1978-80); development of rural fuel and pole plantations in forest reserves, through small woodlots to meet local requirements (1979-80, £121,000);

training of forest assistants and foresters, and reforestation projects within the framework of the National Rural Development Program.

Canada

The International Development Research Center (IDRC) is supporting a rural fuelwood research project conducted by Malawi's Forestry Research Institute which will identify: most suitable species for major climatic zones, for afforestation at village and individual levels, best methods of establishing and managing adopted species, and will educate and inform the public on practical afforestation.

Germany

Germany is financing part of Malawi's National Rural Development Program (Phase I), an integrated approach which, in the German program includes a rural forestry component.

Germany is also engaged in the GOM project to produce ethenal from molasses, a possible fuelwood substitute. The DEG (a German Economic Development Corporation) has invested MK 2.25 million (or 18.7%) in the capacity of the plant. Other investors are the Malawi Development Corporation, for which German aid also provides capital funding, so the effective contribution may be larger.

A pilot project for biogas to meet the needs of institutions associated with a cattle feed lot project in the south is underway. The use of the resultant biogas has reduced by 50% the local project's establishment fuelwood uses. Germany is considering financing the extension of the capacity from a pilot stage to a larger size to meet additional community needs.

United States

AID has financed an energy resources inventory, including fuelwood, in cooperation with the World Bank. The inventory will include a review of energy policies and will begin to prepare the foundation for

an extensive search for renewable energy alternatives. This inventory may also identify various energy project possibilities that could be explored later.

Other donor forestry aid

Other donors include the World Food Program (Forestry development on the Viphya Plateau, beginning in 1979, total WFP costs $2,650,000); the African Development Bank (planned participation in the Kasungu Fuelwood Plantation project, total cost estimated at $10,920,000, possible AFDB contribution, $7,280,000); and the World Bank.

The IBRD's five-year wood energy project, begun in 1980 (total project cost $13.5 million, with IDA financing for $13 million, estimated economic rate of return, 14%) includes establishment of 12,000 hectares of fuelwood and pole plantations in district and town council jurisdictions, in forest reserves and in the capital, Lilongwe. Its primary objective is a pilot program for establishing a nationwide network of 88 tree seedling nurseries, sufficient to plant 15,000 hectares.

The key element is providing decentralized seedling services, at cost, directly to farmers, agricultural processing industries and local townships, enlisting local labor and other volunteered resources for the major cost of the planting, which is labor.

The project will also establish a wood energy division within the Forestry Department; carry out charcoal production trials and research into more efficient uses of wood and alternative sources of energy.

CADA members' total official development aid ($ millions)

Donor	1978	1979	1968-79
United States	5.0	3.0	37.0
Canada	47.0	13.3	102.5
United Kingdom	22.5	37.4	247.4
Germany	12.3	57.2	100.6

BURUNDI

The visit to Burundi took place between August 24 and 28, 1981. Belgium had previously informed the U.S. in a letter dated June 17, 1981 that they were willing to assume the role of principal CADA contact point in Burundi. However, Belgian technical assistance officers in Bujumbara were not aware of that decision. Meanwhile, Mr. Mullally was briefed by Belgian technicians on current Burundi plans. The USAID mission will await the recommendations of the Belgian representatives.

National Plans and Planning

The Burundi government (GRB) has made major steps towards rectifying their very serious problem of deforestation and the resulting erosion and decline in agricultural production.

This has been done despite a lack of Burundian expertise in the field of forestry, extension, and soil conservation. With the help of CADA donor members and other assistance the government of the Republic of Burundi has developed and instituted a forestry policy for the country, which became effective in 1979, the "Year of the Tree." This policy makes the very necessary distinction between urban and rural energy and other forest product needs and describes, province by province, how best trees may be utilized with greatest effectiveness.

The present GRB policy includes:

-- establishing up to 240,000 hectares of fast-growing forest plantations as quickly as possible. This objective will meet the needs for pole and construction requirements, most urban needs, and firewood requirements in areas surrounding the plantation.

-- encouraging farmers to plant trees on their homesteads as well as developing communal forests.

-- preserving the small remnants of natural forest.

The government, in its last two five-year plans, has highlighted forestry and natural resources management. In 1979, concurrently with the publishing of the forestry policy, the Ministry of Planning hosted a "table ronde" which secured donor support for a number of projects designed to achieve stated policy goals.

During the past four years, the government has successfully organized and launched programs to attempt to meet these goals. The pace of plantation establishment should exceed 5000 hectares annually, with the assistance of several major foreign assistance projects. This will be sufficient to meet most of Burundi's construction needs. However, the new plantings will only make a small contribution to national fuelwood requirements.

The GRB forestry department, although it contains few qualified foresters, is a committed department, ably complemented by technicians supported by various donors.

The Size of the Problem

The government of Burundi's revised estimate of currently forested lands totals 90,000 hectares, as of January 1981. Burundi's population was about 4,022,000 in the August 1979 census. World Bank estimates a population of 8,000,000 in the year 2000, of which 7,000,000 will live in a rural environment. Extrapolating the number of hectares needed to be planted through the year 2000 (using World Bank assumptions), a total of some 200,000 hectares will be needed to achieve net fuelwood requirements. This is based on a conservative estimate of consumption of .4m^3 per year per person. Under these assumptions, some 10,000 hectares would need to be planted annually to the year 2000 for fuelwood only, a level double overall current planting efforts, and seven times current efforts of planting for fuelwood.

Existing Coordinating Mechanisms

It is vital that effective coordination among forestry activities be assured. The Ministry of Planning continues to be responsible for the coordination of overall donor assistance to the various development sectors. Since many forestry sector activities fall outside the purview of the Ministry of Agriculture, the Ministry of Planning may continue to provide the best forum in which more coordinated CADA assistance to the forestry and fuelwood sector can be achieved.

Offer of Landsat-based map reproduction service

There have been several reports and projects to determine the size and extent of the deforestation problem and to map the country.

In 1972, a topographic map was completed at 1/100,000 scale to estimate the deforestation problem, although the Zaire Nile Coast was omitted. Early this year, under French sponsorship, the entire country was flown and a national topographic map at 1/50,000 scale will be available in 1983.

A soils map for the country is presently completed and will be available before the end of the year. An agro pedological map will follow. In 1979, Multi-National Agribusiness Systems, Inc., (MASI) undertook a comprehensive analysis of the agricultural sector which included forestry.

There was some question, due to the small size of farms and the widely spread, but dense population, whether an overall Landsat-based map would be useful, considering the existing documentation and work in progress. Perhaps simply assisting in reproducing this detailed information would be more useful. The U. S. will await the recommendation of Belgium and the GRB.

Existing base of CADA forestry aid

Three of the six CADA members are engaged in or are planning forestry and fuelwood production projects in Burundi. Both France and Belgium have very substantial projects underway, and in addition, assist in the support of needed expertise for specific positions within the Department of Waters and Forests.

Belgium	Belgium is financing a rural development project, involving a 500 hectare plantation and protection of another 1,500 hectares for natural regeneration of callitris trees (1979-1983, $830,000). In addition, Belgium is financing a 12,000 hectare plantation (with Saudi Arabia) begun in 1980, mainly for sawn timber, with fuelwood as a possible by-product. (Estimated total cost, $12 million; implementation delayed).

The Belgian government is supplying technical assistance at ISABU which is continuing species research, especially with pines and eucalyptus. Belgium is supporting work at AIDR to develop more efficient wood and peat stoves.

France

France has financed a six-year pilot project for improved silvi-culture and forestry plantations in the Mumirwa region, involving 300 hectares of tests at three sites of varying altitudes (1976-1982, $3.4 MF, or about $762,000). Also a 500-hectare protection Kibira project, to establish a 100-kilometer "cordon sanitaire" around the Zaire/Nile crestline natural forest in the north (1979-84, 4 MF, or about $897,000). France is also providing 21% of the total cost of the IBRD Burundi forestry project (see below) primarily for technical assistance in the direction and administration of the project (1979-1984, $1,860,000). The French are preparing topographic maps from aerial photos taken in early 1981 which should be available in 1983. The CTFT (Centre Technique des forets Tropicale) has through its "Mission for the Zaire-Nile Crest," initiated research for species selection, nursery techniques, land preparation, and species improvement work which will be uniquely applicable to the different ecological zones in Burundi.

United States

The United States will obligate funds in FY 198[illegible] for a forestry project in the Bururi provi[illegible] which will incorporate plant production for fuel with watershed protection of one of the last natural forest eco-systems in Burundi. The project will emphasize extension of tree-planting techniques and seedlings in rural areas and the adoption and extension of more efficient stoves, again in a rural area (Life of project costs estimated at $1,144,000).

As an attempt to provide viable alternatives for wood or even conventional energy, the U.S. is supporting a peat development and marketing project. AID is also funding a feasibility study to investigate the possibilities of converting agricultural residues such as coffee pulp to a useable form such as briquets.

Other donor forestry aid

In addition to CADA donors, the FAO/UNDP is providing on-going technical assistance and training to strengthen the Forestry Service (1978, on-going $450,000). The GRB prepared a detailed training program for forestry sector personnel, with the assistance of FAO and ILO, in 1979. A project beginning in May of that year, to partially assist in improving the personnel training situation, is supported by the FAO and will continue for some 38 months. To assist in developing a program for the newly established National Institute for the Conservation of Nature (INCN), UNEP is funding a Belgium expert.

The European Development Fund is financing the IMBO project, providing for wood production plus protection and maintenance of 3,200 hectares of forests in the Mumirwa region ($2,897,000).

With co-financing by the EEC Special Action Account ($1.2 million), France (FAC, $1,860,000) and the UNDP ($700,000) the World Bank is financing a first phase, five-year forestry project, 1979-1984. (Total project cost $8.8 million, estimated economic rate of return is 17.6% to 21.6%, varying for different project components. IBRD (IDA) providing $4.3 million, Government of Burundi, $770,000.) The project objectives are to: Establish 30 seedling nurseries (sufficient for planting 5,000 hectares) to produce eucalyptus and other tree seedlings to be planted by the rural population; establish 2,000 hectares of short rotation eucalyptus plantations for firewood and poles, 5,000 hectares of pine plantations for saw log production; provide management and technical assistance, training, studies of energy, wood stoves, charcoal production methods.

Two other proposed projects contain major forestry and fuelwood components:

A proposed NGOZI III Rural Development Project (IDA) contains a $2.4 million component for forestry and erosion control. The main objective of the forestry component is to provide fuelwood, poles and timber, as well as planting bare mountain tops and shelter belts on grazing land (4,300 hectares) the replanting of existing communal plantations, and planting of private and individual woodlots for farmers (we anticipate that the loan will be authorized in 1981, although negotiations have slowed).

A proposed Kirimiro Rural Development Project has $1.5 million for forestry and erosion control in similar program. Proposal includes: 1,200 hectares of protection plantations, 500 hectares of fuelwood and pole plantations, 200 hectares of timber plantations, 400 hectares rehabilitation of communal plantations, 300 hectares new communal fuelwood pole woodlots and 250 hectares of private woodlots.

CADA members' total official development aid ($ millions)

Donor	1978	1979	1968-79
United States	3.0	2.0	9.0
Belgium	20.9	25.2	158.4
France	7.2	7.5	47.0
Germany	6.3	6.4	25.3

SOMALIA

The United States has agreed to serve as an informal point of contact in Somalia, to encourage more coordinated programming in the host country and to serve as a channel of communication among CADA members on current and future bilateral assistance activities. The visit took place between August 27 to September 5, 1981.

National Plans and Planning

Somalia government planning for forestry and fuelwood production is farther advanced than had been expected.

In Somalia a detailed sector plan and strategy and plan for the next five years, 1982-86, has already been drafted by the State Planning Commission, in close consultation with the National Range Agency which has primary responsibility for forestry-related efforts. This will be circulated informally within the next few months and will be formally presented to donors in December 1981. Tasks identified by our technicians as crucial to the success of any national program remain unfunded. Detailed project designs already exist, prepared by experts requested in the past by the Somalia government.

Five forestry sector projects are included in the proposed Plan which, if promptly funded and executed, would substantially increase Somalia's capability to undertake national reforestation and fuelwood supply programs on a scale more closely geared to the measurable needs. These and their estimated costs are:

* Forestry development and strengthening the forestry department ($2,424,000)
* Improvement of charcoal production methods ($662,000)
* Improvement of frankincense and myrrh production, a source of 3 to 4 percent of foreign exchange earnings in the past ($712,000)
* Village forestry, including fuelwood plantations to be expanded as fast as possible to meet each village's local needs ($846,000)
* Strengthening and intensification of sand dune fixation operations. These have enlisted a significant component of local volunteer labor in planting and the first

stage includes fuelwood, nut and other commercially marketable plantings ($3,076,000). A Landsat-based land inventory request is part of this project. (See page 30 below.)

Together, these five projects would cost approximately $7,720,000 over the next five years.

Meanwhile, however, there have been a number of field activities financed partly by the government budget and largely by food for work through WFP project 719 (which, according to preliminary reports in the field will not be renewed). The former amounted to SoSh 2 million annually and the latter reached an equivalent value of about Sosh 6 million in 1979.

Together with past efforts, these have financed the creation of 38 small nurseries fairly evenly distributed throughout the four regions; 200 hectares of shelterbelts; 2,800 hectares of tree species trials and protective plantations; 5,000 hectares of terracing; 6,200 hectares of sand dune fixation; and 3,000 hectares of forest inventory and survey. In addition, 334,000 hectares have been surveyed for wild life reserves. (See worksheet attached as Tab 1.)

The Size of the Problem

These projects are admittedly small in relation to the size of the problem. That has already been defined in terms of the volume of wood needed to meet rural and urban household and small industry fuelwood needs, charcoal demand for which a sizeable local production and distribution network exists, and rural and other construction timber requirements. (See Tab 2.) The number of hectares which would need to be planted through the year 2000 to meet estimated requirements from sustained needs would be about one million hectares. (This is based on IBRD Renewable Energy Task Force assumptions of $10m^3$ per hectare annually from sustained yield.) This averages out to 50,000 hectares of new fuelwood plantations a year for twenty years, a level reached only in Algeria among sub-Saharan countries to date.

Existing Coordinating Mechanisms

The Ministry of Planning has served as the channel for formal and informal GOS coordination of overall donor assistance to the various development sectors. It can provide the forum in which more coordinated CADA assistance to the forestry and fuelwood sector can be discussed in the context of overall development policy and, as appropriate, further assistance can be negotiated.

French, German and UK representatives resident in Mogodishu were briefed on the CADA background and preliminary findings. The USAID Mission Director, Mr. James Kelly, will serve as contact point for further informal CADA discussions, pending GOS formal distribution of the next Plan.

Offer of Landsat-based Map Reproduction Service

Quite detailed land use studies have been completed (or are nearing completion) of the Northern and Central regions and parts of the Southern region, using older aerial surveys, new ground surveys, and in some segments, Landsat imagery. However, none of these have been collated on a national scale.

The GOS next Five-Year Plan includes, in its sand dune fixation project, a request for a national mapping inventory for the purpose of longer range planning. The GOS has been informed that CADA members will be receptive to a request for this in advance of the formal issuance of the Plan, if they believe this would be useful. The Regional Remote Sensing Facility in Nairobi (of which Somalia is an inactive member) is prepared to undertake this service, if requested. Cost, as estimated in the Plan, is $308,000.

Existing Base of CADA Forestry Aid

Four CADA members have forestry-related projects underway or under preparation in Somalia:

Germany	A program for establishing nurseries and greenbelts around urban centers in the central region of Somalia is in preparation, as a complementary element to the envisaged German contribution to the Central Rangeland Development Program,

	financed largely by the IBRD. Cost, 3 million DM. A project investigating coal resources (which could serve as a possible substitute source for fuelwood) is also underway.
France	A planned project of oasis development to establish date palm plantations along the northern coast is under preparation. There will be provision for interplanting forage crops, principally alfalfa, experimentally.
United Kingdom	Technical assistance in Northern and Central regions land use surveys.
United States	Contract for project design of a Food for forestry project, modelled after the Algerian reforestation CPR project. Consultant to begin work September 20. Several small-scale tree planting projects, by voluntary agencies, in refugee camps.

Other donor forestry aid

IBRD	Technical Assistance for Central Rangelands development. Also establishment of 10 square kilometer shelter belts around three regional capitals. $200,000.
World Food Program	Rangeland development and reforestation. (1979-1982) Costs: Food $13,038,000; total WFP $17,841,700; other $34,042,900.
FAO/UNDP	Has provided technical assistance in anti-desertification and forestry sector planning and project design, 1978-1981.

CADA members' total official development aid ($ millions)

Donor	1978	1979	1968-79
United States	13.0	21.0	69.0
Germany	20.7	11.0	71.9
United Kingdom	1.9	2.8	8.2

Received from Director of Forestry
NRA - September 3, 1981

SOMALIA: CURRENT STATUS OF FORESTRY-RELATED PROGRAMS

Preliminary Worksheet
TAB 1

REGION / ACTIVITY	Nurseries No.	Shelter Belts No.	Timber Plantations No.	Grazing Reserves No.	Grazing Reserves Total Controlled Area (km^2)	Forest Reserves	Charcoal Coops	Sand Dune Area Fixation	Range Coops
Northwest Region	6	2		4	2,700	2	3	-	
Togdheer	2	1		7	4,545	2	1	-	1
Sanaag	1	5		4	3,154	3	1	-	13
Bari	2	1		2	2,590	2	1	-	-
Nugaal	2	2		2	2,770	-	1	-	-
Mudug	1	4		6	11,000	3	-	2	
Gedung	3	1		3	1,900	1	1	-	
Hiiram	3	3		6	14,375	3	1	4	
Middle Shabeli	3	4		4	3,250	2	1	-	
Lower Shabeli	3	3		3	2,050	2	1	2	
Middle Juba	3	2		3	3,000	3	-	-	
Lower Juba	2	3	2	3	4,000	2	1	-	
Gedo	3	2		4	5,000	2	-	-	
Bay	2	4		8	3,200	4	1	-	
Bokool	2	1		4	6,750	2	1	-	
TOTAL	38	38	2			33	14	8	14
No. hectares involved:		200						6,200	

Source: Ministry of Planning

SOMALIA: FORESTRY AND FUELWOOD PRODUCTION NEEDS

Preliminary Worksheet
Tab 2

ITEM / REQUIREMENT	Year: 1980	1990	2000	Expressed as estimated Land area required by the year 2000 (in # of hectares: assuming 10m3 per ha/per year from sustained yield)	Estimated annual planting needed through 200
	Expressed as volume of wood: '000 Cubic meters (m^3)				
Fuelwood for household cooking					
Rural	4,450	5,980	7,960	796,000	39,800
Urban	127	168	228	22,800	1,140
for charcoal production	1,080	1,440	1,940	194,000	9,700
Other industrial demand?	...	...	...	...	...
Other Wood Products:					
Small size poles for rural construction	82	129	172	17,200	860
Roundwood for urban areas	62	62	102	10,200	510
Industrial wood products (pulp/paper/exports? myrrh/frankincense)	...	...	...	...	...
Other Forestry-Related Needs:					
Range land reserves:	not applicable			...	...
Park and wildlife reserves:	not applicable			...	...
TOTAL	5,801	7,779	10,402	1,040,200	52,010

... = Remains to be calculated