

Forestry Activity in the United Nations

LATIN AMERICA:

Program in the region:

In this region, the great extent and value of the forest resources make all the more imperative their use to good advantage. The most significant move in that direction was the setting up of the regional FAO Forestry Commission mentioned on page 28. This commission resulted from the Teresopolis Conference mentioned on page 22 which laid the ground for such an organization.

One of the foremost needs in all Latin American countries is for a great deal of research and investigation to get more facts about the real extent of the forest resources of the region, the species of trees, the uses to which the timber can best be put. This kind of investigation lends itself to a regional approach. So does the training and education of forestry people and the building up of the knowledge and skill essential to good modern forestry practice.

To accomplish these ends, the commission decided to establish a Latin American Forest Research and Training Institute and six subregional research centers, for Mexico and Central America, for the Caribbean, for the tropical Andes, for the Southern Andes, for the Parana-Plata-Paraguay area, and for the Amazon area. Final proposals for establishing and financing the institute would be presented at the last meeting of the regional commission in Venezuela in March, 1955.

At the 1954 session of the Latin American Forestry Commission, many countries reported that a good deal of progress has been made in forestry work and the development of national forest policies. For example, Venezuela has a school of forestry;

Chile is starting one with FAO help; forestry training courses are being given in schools of agriculture in Argentina, Brazil, Cuba, Costa Rica, and Peru; research is underway in Argentina, Chile, Puerto Rico, Surinam, and Trinidad; several countries are keenly interested in expanding forest industries or starting new ones.

This ferment of activity is significant not only for Latin America but also for other parts of the world. For in relation to population and rising standards of living, the world's forest resources—and specially those of north temperate zone—have been dwindling. As they grow smaller, the great and under-used resources of the tropical regions assume an increasing importance for all who live outside the tropics.

The region is rich in tropical and subtropical tree species, about many of which very little is known. Certain kinds of trees that grow in these forests, like mahogany, have great value. But these trees are rare and widely scattered, and are expensive to obtain. For the sake of the forests, it would be better not to concentrate on the rare and valuable species, but to take timber of all kinds in accordance with the requirements of sustained yield. But if there are vast quantities of unutilized timber in Latin America, there are also areas where land that should have the protection of trees have been stripped bare and open to serious damage.

A fourth of the world's forests are in Latin America and trees are one of the great resources of the region. Not quite half of the area is woodland, much of it unused in many places but in some scoured by fire or destroyed by shifting cultivation.

Accomplishments with individual countries:

Brazil.—This is a land of many trees and few people. Its immense forests have been tapped only to skim off the cream—the more expensive hardwoods, mainly mahogany. Half the trees of South America grow in this country. The most extensive forests are in the hot, humid Amazon Valley, which covers nearly half of Brazil's area.

The most important work in Brazil so far undertaken by FAO has been to provide help in the early stages of assessing and shaping the potentially vast Amazon program. Three experts, on wood industries, timber marketing, and logging, spent a year making a thorough study of the valley and of possible markets in Brazil, and in other countries that might use Amazon timber.

The experts concluded—

that the development of the Amazon forests presents no insuperable technical difficulties. The problem is mainly one of organization, plus capital, equipment and skills. At present it is not possible to insure a sufficient supply of timber even for the small capacity of existing sawmills;

that as a short-term objective Brazil could treble its timber production from these forests within 10 years through simple improvements and modernization without radical change in the structure of the timber industry; and

that though this achievement would not require much extension of operations, it does involve establishing a forest policy, legislation, and administration for well-rounded and rational development of the Amazon forests.

This country is taking deep interest in the systematic development of this fabulous, almost uninhabited tropical region. Under a new law, three per cent of the national revenue and of the revenue of the states

and municipalities in the area is to be devoted to Amazon Valley development. Since this area provides only one per cent of the national income, it must more than treble production to meet expenses. An Amazon Commission has been set up to plan development and land use.

The future development of a region of this great extent can only proceed on the basis of a forest inventory and the work is presently going on. FAO continuing assistance is being given by experts advising on forest policy, sawmilling and logging. FAO program is now on the first stage of implementation.

In the southern part of Brazil are extensive areas of Parana pine, a fast growing species especially good for pulpwood. An FAO expert surveyed the Parana pine area and estimated that at the present rate of exploitation the trees will all be gone in about 40 years. He suggested methods of cutting, regenerating forest stands, and planting new forests that would maintain the timber supply while continuing to meet the needs of the industry. He also outlined additional research needed to find answers for some of the Parana pine problems. Brazilians have been worried about the permanence of the present stands.

Chile.—One of the important developments carried out with FAO aid in forestry has been the establishment of a forestry school at the University of Chile, in Santiago, with a curriculum based on the experience of the best schools in Europe and the United States. This school should be of great value regionally as well as nationally. A forestry center has been set aside where modern methods of forest management would be demonstrated, and where university students and others could receive part of the training needed for careers in forestry and in wood-using industries. This center plays a vital part in showing the possibilities of a sound forest policy.

The FAO forestry group of eight experts

has also worked on drafting forest legislation, making a forest inventory, drawing up plans for an integrated forest industry. In fact, no important aspect of the development of the forest resources of Chile has been neglected.

Ecuador.—In this country, FAO mission made field work to study prospects of expanding and decentralizing pulp and paper production. The government requested a forestry expert to advise on the conservation and utilization of the country's extensive forest resources.

Uruguay.—Government has so far asked for little direct technical co-operation from FAO. The main work there has so far been participation in a survey mission with the International Bank in 1950 which included nine specialists in fields related to agriculture and forestry.

Paraguay.—This country has had direct technical assistance from FAO only in connection with forestry developments. Some 60% of Paraguay is forested and it is considered that the country's forest resources should be further developed as a source of industrial and commercial raw materials for internal and external markets.

Two forestry experts have advised the Government on forest policy and silviculture. Under the auspices of the FAO experts, a lumberman's association was developed to enable forest industries to maintain direct contacts with government and banking officials.

The mission is also concerned with the development and modernization of existing forest industries, and has advised the Government on modern methods of exploitation and utilization of wood, to provide an increase in output and quality of the products and to prevent the destruction of forests by indiscriminate cutting. The project is being continued by a further team of experts, who advise on the creation of new industries, the introduction of sound techniques of management and explore the possibilities of wider foreign markets for forest products.

Peru.—Peru has so far requested very little technical cooperation from FAO. An FAO mission made field work to study prospects of expanding and decentralizing pulp and paper production.

Bolivia.—In forestry the work has so far been the participation of forestry technicians in a survey mission of the International Bank.

Colombia.—An FAO expert in forestry did a good deal of work and recommended enlarging and improving the forest service, a reforestation project, conducting an intensive campaign against the burning of forests, and the establishment of a forestry school. A forestry industry expert is advising on possibilities for establishing forest industries, especially relating to the increased output of pulp and paper. A further expert is advising on forest policy and on reforestation in line with the recommendation of the joint FAO/International Bank mission.

Venezuela.—In forestry the work has so far been a field work to study the prospects of expanding and decentralizing pulp and paper production.

Mexico.—FAO has an office in Mexico City which services Mexico, Central America, and the Caribbean. The Government has taken an active part in FAO's regional work, and this includes forestry.

In forestry field, cooperation between the government and FAO has been excellent, and a promising long-term program is now well under way. The FAO forestry group in Mexico has been drawn from seven different countries.

A team of six forestry experts has assisted the Government's forestry administration and the technical and economic services of the Banco de Mexico in forest conservation and management, and in the organization of forest industries. Mexico's 1948 forest law is unique; in line with the provisions of the 1917 constitution on land ownership, it provides for a mixture of communal, private, and state-owned forests, and it authorizes state control and regulation

in the public interest, even in private forests. This works favorably for private industries using forest products because the state must guarantee that they will have a sustained supply of timber to meet their needs; but the industries, in turn, may be required to provide certain technical forest services to insure proper management of timber lands. The undertaking is new and the government is understandably anxious to make an outstanding success of forest management.

The experts have assisted and have carried out training of local personnel in drawing up forest inventories both in the pine forests of the north and in the tropical forests of Yucatan. In both temperate and tropical regions advice has been given on management and reforestation, and an expert has assisted in the protection of forests against insect infestation.

For the development of forest industries in the northern pine forests the experts organized *unidades forestales* in which rational exploitation is carried out with the maximum conservation of resources. Demonstration of equipment has been carried out for these organizations, and the basis for considerable extension of forest industries has been laid down, especially for the development of production of pulp and paper in both regions.

Inventories for both pine forests of the north and the southern tropical forests are being completed, and further assistance is being given in the establishment of forest industries and in marketing of forest products. To assist in the establishment of a large pulp and paper factory in the Michoacan forests, an aerial survey has been carried out and on this an FAO expert has based a plan for development and the construction of forest roads. He is being assisted by a pulp and paper expert, who will carry out work on cellulose research.

Honduras.—The forests of Honduras consist of tropical hardwoods in the lower areas and pine occupying the higher ground. The

problem of uncontrolled burning of forests has become increasingly acute, and the Government, considering that a forest service and a sound forest policy will offer the most effective means of conserving this important national resource, requested an FAO forest officer in 1951 to outline the necessary measures for setting up a forest service and for the enforcing of protective measures.

The expert at present assigned has advised on conservation measures and has assisted in establishing a demonstration area for new methods of resin tapping which will increase production and protect trees from damage. A draft of forest law has been prepared.

Guatemala.—FAO forestry experts helped the government to work out a broad program of forest development and forestry training. Entomology drew considerable attention due to infestation of large areas of valuable pine forests by insects, particularly a local species of bark beetle. The results of entomology work are useful to all Central American countries.

Nicaragua.—Before the days of the expanded technical assistance program, FAO sent a mission to Nicaragua in 1949 to survey agriculture and forestry. Proposals given high priority included better forest management.

Costa Rica.—An FAO expert carried out a survey of the possibilities of developing a pulp and paper industry within the country. Except in connection with regional projects, FAO has so far been called on to do comparatively little work in Costa Rica.

Haiti.—In 1954 an FAO expert has completed his assignment begun in 1951 during which he assisted in the reorganization of the forest service, the development of a forest policy, and supervised reforestation and water-shed control measures being carried out by the government. The reforestation of water-sheds, particularly of the Artibonite River, which drains one third of the country, is being carried out at the rate of 1,200

hectares per annum. The control program worked out by the expert is already being extensively implemented. FAO's co-operation is desired in the reorganization of forest industries in the pine forests of the south-east to insure conservation of the resources.

British Guiana.—The country possesses many varieties of commercially valuable timber, and it is felt that improvements in the operation of sawmills would help the government to develop a timber export industry. An FAO sawmill expert undertook a survey of existing sawmills and advised the industry on producing better quality and increased quantities of saw lumber for domestic and export requirements. He also advised on the organization and maintenance of sawmills and on methods of initiating a training system for sawmill operators.

Surinam (Dutch Guiana).—FAO and the International Bank worked here together, as in British Guiana, on economic surveys designed to strengthen the development programs of these two countries. The mission recommended expansion of logging operation and wood-products manufacture to treble the value of timber products from the Surinam forests within ten years.

ASIA AND THE FAR EAST:

Program in the region:

One of the pressing problems confronting almost all countries of the region is the better use of tropical land. To thresh out this problem, FAO convened a conference in 1951 at Nuwara Eliya, Ceylon, mentioned on page 25, on the utilization of land in the tropical areas of Asia and the Far East. The Ceylon conference gave special attention to shifting cultivation.

Shifting cultivation is a practice of burning off the trees and brush; planting a crop for a year or two, or until the heavy tropical rains have washed the plant nutrients out of the upper layers of the exposed soil, greatly reducing its fertility, and sprouting brush has made cultivation difficult; then moving on to another location, leaving the

clearing abandoned for 10 or 15 years or longer.

This practice results in great loss of timber, floods, silting of streams, serious erosion in the hills; and it damages settled farmers who carry on a permanent agriculture in the valleys by eventually cutting down their water supply.

Shifting cultivation has been widely condemned, yet there is a growing recognition that it has a legitimate place in certain tropical rain-forest areas where almost no other kind of crop production is possible. The problem, for which some countries are working out interesting solutions, is to develop methods that eliminate or greatly reduce the damage involved.

Partly as a result of the Nuwara Eliya meeting, consultants and working parties are collecting detailed information about shifting cultivation from countries in the Far East and Africa with a view to recommending possible changes and remedies.

Regional projects are planned by the Forestry and Forest Products Commission for Asia and the Pacific mentioned on page 29. The commission sponsored the FAO Timber Grading School at Kepong, Malaya, in 1951, following recommendation of the Dalat meeting, mentioned on page 24, where seven countries in the region participated. Another commission-sponsored training course on mechanical logging was held in the Philippines in 1952-1953, with eleven countries participating.

Accomplishments with individual countries:

Burma.—The future prosperity of the country depends greatly on the exploitation of its extensive forests, and the establishment of new forest industries to utilize other woods, for which there is very little export demand, and waste products of sawmilling. An FAO expert examined the possibilities of combining extraction, all kinds of forest industry and marketing, into an integrated plan. By this means, a considerable reduction in costs will be obtained, timber sup-

plies will be completely utilized with an increase in quality and variety of the products. Woods, other than teak, as well as bamboo of which Burma has extensive supplies, will form the raw material for pulp and paper industries, while waste products will be used for chemical industries and for fuel.

Work has been continued on the forestry project which was begun in 1951 by a forest officer who, having advised the government on the introduction of modern mechanical logging methods to enable Burma's valuable teak resources to be conserved and rationally exploited, afterwards turned his attention to the utilization of other tropical timbers which make up a large part of the Burmese forests and which previously have been ignored. Making use of this timber would result in economies in the much more valuable teak, which is now over-exploited. The expert arranged for samples of Burmese tropical woods to be sent to Germany to be tested for their suitability for chipboard production. As a result of this work a wide range of chipboards were produced, and two pre-fabricated houses have been constructed which are at present under test in Burma.

The pilot plant supplied by FAO for wood seasoning and impregnation has been operated since January, 1954 with excellent results under the supervision of an FAO expert. Testing has continued of sample house built from chipboards. The government has now adopted a national plan for the development of its forest resources based on extensive recommendations for the integration of forest industries made by an FAO expert. Progress is being made in the mechanized extraction of timber under the supervision of an FAO expert, the government having acquired the necessary logging machinery and equipment.

Ceylon.—Sixty per cent of Ceylon's timber requirements are at present imported, but it is considered that by making available timber from inaccessible regions with modern

mechanical equipment, by the utilization of large number of species, and by large-scale reforestation, the country could become self-supporting in timber.

Demonstrations were carried out by an FAO logging expert, using equipment supplied by FAO, and has instructed forest service personnel in their logging operations and the construction of forest roads. An expert on mechanized reforestation has planned and supervised the establishment of plantations and nurseries in various parts of the country. He trained local staff in the operation of mechanical plant equipment supplied by FAO. A large nursery for teak has been established.

An expert on woodworking machinery has installed equipment supplied by FAO in a demonstration workshop and has supervised the construction of a model sawmill. Crews are being trained in the operation of this equipment and additional woodworking machines are being supplied under the Colombo Plan.

India.—The Government of India is anxious to conserve and develop its forest resources in view of the comparative scarcity of timber in proportion to its population. FAO has provided some co-operation in working out ways to carry on logging operations in the Himalayan Mountains, in the northwest, on a year-round basis.

Large quantities of spruce and other conifers exist in inaccessible areas in the Himalayas. An FAO forester examined these high mountains and found that modern logging and transportation equipment were lacking and that all work stopped with the first snowfall. The fact that at present all wood is transported in summer by porters leads to considerable wastage, almost as high as 50 per cent. The expert recommended the introduction of portable sawmills, modern logging and transportation equipment and sleighs to enable logging operations to be carried on both in summer and winter. Two skyline cranes are being supplied for de-

monstration purposes, one by FAO, and a timber extraction expert has undertaken demonstration in the Himalayas.

A plywood expert has given advice on the selection of timber, its seasoning and processing and on improved layout of plywood factories. India has fairly large-scale plywood industries, but the present Indian plywood, used particularly in the manufacture of tea chests, is inferior to foreign products.

A sawmill technician worked with the sawmills of the Andaman Islands, advised on their re-organization and lay-out, and on the improved treatment of sawblades, so that the output from these forests, which have been worked commercially since 1883, may be substantially increased.

The wood technologist advised on such problems as the utilization of bamboo for paper and fiberboards, on laminated woods and on wood preservation and seasoning. A pulp and paper expert has examined the possibilities of increased production in India, and has given advice to industrial undertaking. The control of advancing sand dunes of the Rajasthan Desert is to be undertaken mainly by reforestation with the assistance of an FAO expert and other interested authorities.

The forest research institute at Dehra Dun is one of the best equipped research institutes in the Far East. Its facilities have recently been expanded to undertake training of students from countries in Southeast Asia. FAO has, however, provided a timber engineer to assist in organizing the timber engineering section of the research institute as it has not yet been fully developed.

Indonesia.—This country's 70 million hectares of productive forests, include valuable stands of teak in eastern Java. Outdated methods of logging and transportation have prevented the establishment of forest industries. FAO has provided an expert in mechanical logging to prepare a plan for mechanized extraction in three typical areas.

Considerable expenditure has been undertaken by the Government in the development of improved forest extraction methods and for the establishment of forest industries. Using a loan from the Export/Import Bank, 3,200 kilometers of forest railways have been constructed in Java mainly for the extraction of teak, and a quantity of tractors and other heavy equipment have been purchased. An FAO expert carried out practical demonstrations of extraction operations, on the site training personnel in the use and maintenance of this equipment. Advice was also given on the organization and management of sawmills and further assistance will be given by an expert in forest industries.

Korea.—A sizeable FAO unit is working with a mission sent by the United Nations Korean Relief Administration. This unit has been concerned, among other FAO activities, with forestry. The United Nations Korean Relief Administration is responsible for reporting on the work.

Nepal.—Nepal is a slice of Himalaya Mountains, sandwiched between India and Tibet. The extensive forest resources of Nepal have never been surveyed thoroughly, but considerable over-exploitation has led to shortage of timber in some areas, and serious soil erosion. An FAO forestry expert carried a general survey of the resources and advised the government on sound forest policy, conservation and management.

Pakistan.—Pakistan has few forests and the areas scheduled for reforestation in West Pakistan will be primarily required for soil conservation purposes and can not make any significant contribution to the country's need for forest products. The chief source of supply is the natural forests of the Chittagong Hills in East Pakistan where there are two areas of reserve forests totalling 1,000 square miles, and 2,000 square miles of "unclassified" forest land. These timber areas are inaccessible and their proper development requires the building of a road sys-

tem. This would serve also to develop the agricultural possibilities of the hill tribe reserve where shifting cultivation is at present practiced.

An FAO expert has carried out a survey of the potentialities of this area, which at present yields only 3,000 tons of timber a year. He found great forest wealth among the tropical evergreen forests of Chittagong, but since there are at present no forest industries in this area, no extraction of secondary species is carried out. Many of these appear suitable as raw materials for such products as plywood, matches and fiberboards, all at present imported at high cost.

Since breakdowns are frequent in all tropical logging areas the expert did not recommend any considerable increase in mechanical logging until a proper organization for repair and maintenance had been built up. The installation of a road system is the first step towards utilizing the secondary hardwoods, thus probably doubling the potential output of the forest. Such utilization is aided by an FAO expert on sawmilling who advised on the organization and management of a sawmill in the Chittagong areas, and by a forest industry expert who advised the government on the integration of forest industries and the production of pulp and fiberboard.

A range management expert is advising on range improvement in Baluchistan. This assignment follows the preliminary study of range and pasture undertaken by joint mission between FAO and the United Nations Technical Assistance Administration to the Kalat States.

Philippines.—Following the Far Eastern Mechanical Logging Training Center which was held from October, 1952 to March, 1953, the expert who assisted in its organization has continued to advise the government on reforestation and on carrying out a forest inventory in the pine region. He is continuing to advise on forest policy and legislation.

A forest research expert is assisting in the installation of equipment provided for a forest products laboratory provided by the US Foreign Operations Administration and is training forestry personnel in its use. A joint FAO/UNTAA pulp and paper mission has drawn up a plan for the development of this industry.

Thailand.—Teakwood is Thailand's third major export. Some 63% of the land area of the country is under forest, the most important commercial species being teak. These important resources are seriously threatened owing to unrestricted exploitation and shifting cultivation. Three FAO experts have completed their assignment, during which they assisted the government in preparing an inventory of forests and in drawing up a program of management and reforestation, while a fourth expert is advising on the modernization of the state-owned sawmills.

A pulp engineer advised on increased output of pulp and paper for which Thailand's daily requirement is 40 tons; the expert also examined the possible establishment of a new mill to supply newsprint, and augment the present production of writing and wrapping paper which amounts to about six tons daily. The expert also examined the relative suitability of bamboo and various kinds of native softwoods for pulp manufacture.

It will take time for all this work to show large-scale results.

NEAR EAST AND AFRICA:

Program in the region:

In this region, neighboring countries have been working together through FAO —

to improve great stretches of range and pasture lands for the better nourishment of herds and flocks;

to stimulate reforestation and better management of forests and woodlands.

Grass and trees are the great conservers of water and soil. In 1951 the Organization for European Economic Cooperation and

FAO sent out a team of grassland specialists to survey grazing and fodder resources in a number of Mediterranean countries. This undertaking is young; the problems are difficult and will require long persistent effort.

The Near East has the most serious and difficult forest problems, and it has also been the last to come around to a cooperative regional approach. Regional forestry commissions had been set up in Europe, Latin America, and Asia and the Pacific for some time when FAO held the first Near East forestry conference in Amman, Jordan, in December, 1952, as mentioned on page 26.

Forest plantings are being made, however, and in many places there are vigorous efforts to improve management and increase production. Though rehabilitation of forest areas will be slow, farm planting of fast-growing species of trees can provide wood rather quickly, and the cash value of tree crops in this region compares favorably with that of the best agricultural crops.

It will not be easy to arouse the public interest required to create vanished forests. The Amman conference was the first step in bringing countries together to develop forest policies in concert. It recommended that a regional commission, mentioned on page 29, be established which would hasten progress and assure continued cooperation. On the part of FAO, the meeting resulted in stationing a forestry officer in the Near East to serve governments in every way possible. *Accomplishments with individual countries:*

Cyprus.—The problems of range management and forest conservation encountered in Cyprus are typical of most countries in the Mediterranean area. Cyprus is one of the few remaining areas in the Mediterranean still possessing natural forest, and the government has successfully carried out protection measures to control village felling for firewood and the destruction of grazing of goats. Marginal land occupies one third of the island and consists of unfenced foothill grazing lands between the cultivated

plains and the forested mountains. An FAO range management expert has been provided and has carried out surveys and experimental work.

Ethiopia.—Ethiopia represents a potential source of timber for the tree-less countries of the Near East, but at the present the lack of roads and transport facilities make the cost and operation of extraction prohibitive. In spite of serious depletion, considerable areas of natural forest remain containing much timber of high commercial value, but these have hitherto been subject to no control, and much damage has been done by burning and shifting cultivation.

An FAO forestry expert has drawn up a plan for the conservation and reforestation of forest areas, and for the introduction of new species. On the basis of his plan, an Imperial Proclamation has been issued to protect the forests from further spoliation, and he assisted in forming a nucleus of a forestry service using personnel trained under FAO Fellowships.

The expert is continuing to assist in the establishment of forest nurseries, where he has carried out demonstrations of modern nursery techniques, introducing seeds of forty timber species and sixty species adapted to dry country, mainly from Australia. Addis Ababa depends entirely for its timber supplies on forests of eucalyptus established some years ago in the neighborhood, and many other fast-growing Australian species have shown themselves highly suitable under Ethiopian conditions.

The development of export trade depends on rational exploitation and protection, but requires also a main highway and feeder roads by which timber can be transported to a Red Sea port. In the development of such a transportation system many obstacles have still to be overcome.

Iran.—FAO has provided forestry experts over the past years to assist the government in setting up a forest service and in intro-

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supervising reforestation operations and sand dune fixation. Under his supervision the government has planted a large number of trees, and demonstration plots for nurseries and dune fixation have been set up. The expert is also planning and supervising terracing in the Gebel area of Tripolitania as a soil and water conservation measure, where trees and other crops will later be introduced.

Forest legislation adapted to the different regions of Libya has been drafted by the expert and adopted by the Government. He has been concerned also with the conservation of esparto grass supplies, which are one of Libya's largest single natural resources. He has carried out preliminary forest inventories.

Syria.—Syria's forests have been reduced during the past few decades by indiscriminate felling during times of acute scarcity of fuel, and by grazing, especially by goats which have prevented natural regeneration. Two per cent, or 422,000 hectares of the land area of the country is classified as forest, but, except for 10,000 hectares in the Latakia region which carries fairly dense pine forests, the stands are of poor quality and are constantly damaged by over-grazing and by fires. The government has requested three FAO forestry experts to advise on the management of the forests; on reforestation in conjunction with programs of soil conservation and range management; and on plantations of poplar, eucalyptus and casuarina outside the forests, in the form of shelter-belts and wind-breaks.

Forest legislation exists, but the lack of definite boundaries for the state forest areas has hindered its enforcement. Since natural regeneration occurs fairly rapidly, protection and management of the forest areas will produce good results over a period of time. The FAO expert is assisting the government on the demarcation of areas to be reserved for forestry purposes. On the expert's recommendation, the Director of Forests has passed decrees for the protection of the La-

takia forest area, and plans for roads and fire posts are expected to be carried out within five years.

STUDY TOURS AND TRAINING CENTERS:

Forest Fire Study Tour in the United States:

In response to requests from many countries concerned at the damage caused by forest fires, FAO, in cooperation with the US Forest Service and ECA, organized demonstrations in the United States in the prevention and control of forest fires. The tour which began in September 1951, was attended by 23 officials from Argentina, Australia, Brazil, Canada, Chile, Guatemala, Honduras, India, Mexico, New Zealand, Pakistan, Philippines, Thailand and Venezuela, sponsored by FAO, and 12 officials from France, Germany, Greece, Italy, the Netherlands, Norway, Turkey, and the United Kingdom sponsored by ECA.

Eucalyptus Study Tour:

Eucalyptus is of particular importance to areas suffering from timber shortage since it can be cultivated on a short (8-10 years) rotation, system, as a multi-purpose timber providing pulp and paper, matches, fuel and sleepers. In cooperation with the Commonwealth of Australia, FAO organized a two-month study tour of Australia. Thirty-four qualified foresters from twenty-four countries (Argentina, Belgium, Belgian Congo, Brazil, Burma, Cambodia, Chile, France, Indonesia, Israel, Italy, Jordan, Kenya, Laos, Libya, Malaya, the Netherlands, New Zealand, Nigeria, Spain, Thailand, Turkey, the USA and Venezuela) took part in the tour during September and October 1952.

Far Eastern Mechanical Logging Training Center:

As the result of a number of requests by Far Eastern countries for the services of experts to advise on mechanized extraction of timber, the Training Center was held from October 3, 1952 to March 23, 1953. Forty trainees, consisting of senior forest officers and selected persons from firms engaged in

logging and lumbering, from 11 countries in Southeast Asia, (Burma, Taiwan, India, Indonesia, Laos, Malaya, North Borneo, Pakistan, Philippines, Thailand, and Viet Nam), attended the course of training. The trainees were based on the College of Forestry, Laguna, near Manila, for approximately two months of the period, which were spent in theoretical instruction, discussions and visits to nearby forest products plants. The remaining four months were spent in the field at centers based on four of the largest logging operations in the Philippines.

Far Eastern Forest Research and Training Center:

Under a special agreement between FAO and the Government of India, a Forest Research and Training Center has been organized at the Forest Research Institute at Dehra Dun. This will serve Far Eastern countries in accordance with the proposals approved by the Forestry and Forest Products Commission for Asia and the Pacific. The Center is being organized and conducted by the government and provides instruction at the Superior Service Forest College for non-Indian trainees for one year.

Far Eastern Training Center on Lumber Grading:

In accordance with the proposal of the Dalat conference and indorsed by the Asia and Pacific Forestry Commission, FAO concluded an agreement with the Government of the United Kingdom for the operation of a Timber Grading Training Center in Malaya for the benefit of Far Eastern countries. The course, which began on January 7, 1952, provided six weeks training on the theory and practice of grading tropical hardwoods for some 25 trainees from the countries of the region; their expenses were provided by FAO. FAO provided two instructors in log grading and teak grading. The course was aimed at securing an international standard of grading for tropical hardwoods.

Pasture and Range Management Course:

In late 1953 FAO collaborated with the Office of American States and the Government of Argentine in the Pasture and Range Management Course which had as its object the teaching of techniques, whose efficiency have been proved by application in other circumstances for studying and managing natural pastures. Thirty-four participants from five countries attended the course.

Pulp and Paper Survey and Training Center:

Following the conference held in Mexico in 1951 FAO has collaborated with the Economic Commission for Latin America (ECLA) in carrying out a survey of pulp and paper in Latin America, the report of which was presented at the ECLA conference held in Rio de Janeiro in May 1953. A training center was held in September 1954 sponsored by FAO and the Government of Argentine to study pulping techniques, national and local plans for the development of pulp and paper production and relative production costs.

FELLOWSHIPS:

FAO's Fellowship Program forms the second line of Technical Assistance, being a direct result of the experts' assignments. Its object is to give to these countries the opportunity of continuing along the lines of work recommended by an expert, by means of their own people.

Fellowships are granted for periods up to one year for advanced study in technically advanced countries to enable the holder to carry on the work begun by the FAO expert in his own country. The number of fellows corresponds for the most part to the number of experts at work in any country.

As of March 1952, FAO awarded 22 fellows in the general field of forestry, consisting of two fellows studying on improvement of government services, 17 on forest conservation and management, and three on development of forest industries. As of this date FAO made a total fellowship awards of 90, 22 being in the field of forestry, 35 in

agriculture, 8 in economics, 21 on nutrition, and 4 on fisheries.

During the fiscal year 1952-1953, there was a total of 267 fellows awarded by FAO but no mention is made of the breakdown as to projects. The total includes Fellows from 1951 who were still studying in 1952, and those who have been appointed but had not yet started to study before June 30, 1953. There were 61 Fellows for Asia and the Far East; 105 for Near East and Africa; 37 for Europe; and 64 for Latin America; 227 were on the 1952 budget while 40 were on the 1953 budget.

There were awarded by FAO 140 Fellows in fiscal year 1953-54, out of which 22 were in the field of forest development, management and industries. Other fields were animal disease control, agricultural institutions and services and rural welfare, farm machinery shop and field services, crop production, animal production, agricultural statistics, etc.

FORESTRY DEVELOPMENTS IN FAO *FAO Conference:*

One of the sources from which to draw an evaluation of the development of forestry in FAO is the proceedings of the periodic sessions of the FAO Conference. The first session of the FAO Conference at Quebec in 1945, aside from being organizational as a whole, was the recipient of numerous recommendations from the different technical committees, one being the technical committee on forestry and primary forest products. These recommendations, after their priorities having been determined, were the bases upon which to work out a program of activities to be followed commensurate with funds and personnel available.

The second session of FAO Conference at Copenhagen in 1946 appears to have merely re-stated the recognized fact that the shortage of woods was serious resulting from basic causes of deforestation, inadequate forest management, failure to develop mature forests, incomplete utilization, and in-

sufficient technical personnel. The Conference recognized that the rehabilitation of the world's forests is a huge task and will take time; and calls for teamwork on an international scale.

In previous sessions of FAO Conference, different questions were referred to committees of experts but this had serious disadvantages — recommendations of the experts hardly gained any attention from the principal delegates of the Conference and still less from their Governments and remained for the most part a dead letter. At the Geneva session of the third FAO Conference in 1947, the Commissions dealt with the items on their agendas in plenary sessions instead of committees to carry out the bulk of the work. In this way the discussion took place in the presence of the principal delegates (who were not specialists) and of the public and the press who were thus obliged to give their attention to problems which they were not used to consider and to appreciate their importance for the world-economy and well-being of the peoples. FAO at this time emerged from the stage of making programs to that of putting them into effect. This Conference paved the way to the calling of regional conferences to study forestry problems in Latin America, Asia and the Far East; and the sending of experts to Mediterranean Area and the Near East.

The fourth session of FAO Conference at Washington, D.C. in 1948 recognized that regional activities constitute the best means of developing regional forest policy by co-ordination of regional programs. This cleared the way to the establishment of FAO regional offices and the formation of regional forestry and forest products commissions.

The 1949 fifth session of FAO Conference laid out programs for forestry and forest products—

- development of national forestry programs
- reduction of loss and waste

increased yields from existing forests

increased supplies from new forests

promotion of regional forest policies

Europe

Latin America

Asia and the Far East

basic services

statistics

publications

technical consultations

commodity problems

A review of developments in forestry as important steps in the direction of FAO's objectives came out of the special session of FAO Conference in 1950 — efforts of first five years —

forest policy — FAO has sought to have each country apply rational principles to its forest management, development and utilization, and to base its activities on a national forest policy founded on law and soundly administered;

forestry development in Europe;

forestry development in other regions — Latin America and Asia established commissions;

Montreal pulp conference — sponsored by FAO;

forestry mission for Austria;

improved forestry and forest products statistics;

basic forestry studies;

technical consultations on forestry and forest products; and

rational utilization of wood.

Cognizant of the world shortage of paper, the sixth session of FAO Conference in 1951 considered lending assistance in long term efforts to overcome this world deficiency. FAO through its technical assistance program was ready to assist governments towards increased production of pulp and paper. One of the Conference documents set out the Forestry Division's field of responsibility —

forest policy and conservation — the formulation of sound conservation policies governing the development and wise use of lands for the production of wood and other forest products; watersheds; grazing; etc.;

research and technology — improvement of forest yields and improved utilization;

forest economics — stimulation of wood production and consumption, with special attention to inventory of forest resources; appraisal of social and economic aspects of forest management; analysis of national development programs; national and international action to bring about levels of consumption of forest products representing adequate housing and general living standards.

The seventh session of FAO Conference in 1953 reviewed forestry activities and programs —

the conference was of the opinion that the activities of the Organization in the very broad field of forestry showed an admirable pattern of useful and positive actions throughout the world. A measure of the stimulus given to world forestry by the Organization was provided by the results achieved in recent years by member countries acting concertedly on the international plane and by the marked progress apparent also in many countries. The degree of international collaboration enlisted by the Organization was commendable.

The eighth session of the Conference of FAO will be held in late 1955.

Technical assistance and co-operation:

FAO acquired valuable experience in technical assistance work before the Expanded Technical Assistance Program (ETAP) of the United Nations and the specialized agencies was launched in mid 1950. As early as 1947 FAO fell heir to

the work then carried on by the United Nations Relief and Rehabilitation Administration (UNRRA) in the field of agriculture in Austria, China, Czechoslovakia, Ethiopia, Greece, Hungary, Italy, Poland, and Yugoslavia. In the China mainland, the planting of millions of seedlings and cuttings was well underway when FAO teams had to withdraw in 1948. In Italy a range management specialist worked on the improvement of mountain pastures and other work done on forestry. A great deal of work was done on forestry in Poland which later withdrew from membership.

FAO undertook three other technical missions in 1947 and 1948, in addition to work financed by UNRRA funds, in Thailand, Venezuela and Poland. Forestry work was done in Thailand only.

When FAO embarked on the expanded technical assistance program it was in a position to move quickly since the proposals on technical assistance were an extension of the work it was already doing. What were done and accomplished are contained in the preceding discussions.

On the other hand, FAO did have problems in the performance of its work. It was difficult to recruit experts of the highest qualifications as they were needed also in their respective countries and FAO had to "borrow" specialists in early years to man the different technical branches of the Organization. This difficulty somewhat eased up when the question of finances came up in later years of the program. Quoting from the official report of FAO's ETAP (1954)—

"In 1954 the Technical Assistance Program entered on its fourth full year. Although in 1953 more countries contributed to the Technical Assistance Fund, the amount available for FAO fell from \$6,355,000 in 1952 to \$6,049,000 in 1953 and to \$5,536,000 in 1954. The financial uncertainty from which the Program has suffered since its inception has caused the Technical Assistance Board (TAB) to take certain mea-

asures to ensure a more secure basis for the continuance of projects and in accordance with the decisions of the Technical Assistance Committee (TAC) and the Economic and Social Council (ECOSOC) the TAB has therefore undertaken to increase the existing Capital Working and Reserve Fund of \$3,000,000 to \$12,000,000 over the next three years. The immediate effect of increasing the reserve has, of course, been a cutback in the amount actually available for projects, amounting in the case of FAO to nearly \$600,000. x x x"

"The Technical Assistance Program is not a pre-determined operation approved in advance and continuing unmodified throughout the year. It is constantly changing. Because of the limited resources available, adjustments may have to be made in one section of the Program to provide for expansions elsewhere. Moreover, changes in world conditions will frequently lead to a change of emphasis in particular programs. These considerations, and the continuing financial uncertainty, while not involving the Program in any fundamental reorientation have caused certain projects originally planned for implementation in 1953 and 1954 to be reduced in scope or postponed to later years. x x x"

Finally quoting the Director-General of FAO, P. V. Cardon, in his Progress Report for 1953/54 —

"The additional resources of the Technical Assistance program greatly increased the useful service FAO can render. As it expired during the past year, however, these funds were less than had earlier been expected, and upon which the program was planned. The resulting necessary postponements and cutbacks in projects were of course, disappointing.

"All of these are operating difficulties which must be encountered in any program. The Member Governments of the FAO Conference, and the members of the Council, have dealt with them as has the staff. They have not prevented a substantial amount of progress in 1953/54 in every division. x x x"

Outlook:

Quoting from the official report of FAO's ETAP (1954)—

"Looking forward to 1955, it can be said that FAO is continuing its part in the world-wide operation of development being undertaken by many governments and agencies. FAO's contribution is necessarily a limited one, and there is room for every kind of developmental assistance. Nevertheless, international technical assistance should provide the best vehicle for related economic aid. It would also be a great advantage, if now the experimental period of the Program is coming to an end, it could be placed on a firmer and more continuing financial basis. Neither governments nor FAO can plan their development programs on the basis of uncertain annual allocations. The Technical Assistance Program has been widely appraised as one of the most useful activities of the UN and the Specialized Agencies, and one which in the long run may bring the greatest benefits to both receivers and contributors. The development of the Technical Assistance Program, and the continued interest and enthusiasm which it arouses, are in themselves a great achievement for it is only by the mutual energy and enthusiasm of both the major contributing and recipient countries that the aims embodied by the founders of the Program will be realized in the coming years."

The future may be judged by past accomplishments. Based on this assumption, it is quite safe to assert that FAO is facing a bright future barring of course serious world disturbance that would hamper or cut short the vigorous pursuit of the objectives of the Program.

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"Now, son," said the father, "tell me what I punished you for."

"That's fine," blubbered the kid, "first you pound the daylight out of me and now you ask me why you did it."