DEMAND, TRADE HEAVY FOR FOREST PRODUCTS, 1964

The expansion in Europe's economic activity during 1964 — an aggregate rise in industrial output of about seven percent across the continent — led to a considerable rise in the aggregate consumption of forest products. Home production met the larger part of this increase, but the volume of net imports in 1964 rose by no less than 30 percent above the previous record level of 1963 to nearly 32 million m^3 (roundwood equivalent). Part of this massive increase, however, went to swell stocks in importing countries. These are conclusions contained in the supplement to the "Timber Bulletin for Europe" No. 4.*

The following table, giving the value of trade of those forest products covered in the Timber Bulletin, shows clearly that each of the main product groups contributed to the rise in the value of European net imports to an estimated US$ 1,200 million in 1964. The biggest increases in the value of net imports occurred in the roundwood and sawnwood groups.

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Value of European Trade in Forest Products
(Million US $)

	Exports (F. o. b.)			Imports (c. i. f.)			Net trade[a]		
	1962	1963	1964 (prov.)	1962	1963	1964 (prov.)	1962	1963	1964 (prov.)
Roundwood	205	190	195	535	545	620	330	355	425
Sawnwood	765	790	890	1185	1280	1500	—420	—490	— 610
Panel Products	250	275	315	275	305	365	— 25	— 30	— 50
Woodpulps	635	715	830	780	890	1020	—145	—175	— 190
Paper and Paperboard	1015	1100	1245	910	990	1165	+105	+110	+ 80
Total	2870	3075	3475	3685	4015	4670	—815	—940	—1195

[a] + net exports — net imports

Information received from a cross-section of countries indicates that industrial roundwood removals in Europe in the calendar year 1964 were as much as 10% higher than in the previous year and nearly 6% more than the previous record level in 1962.

Sawn softwood

The sharp increase in north European export prices at the start of the 1964 buying campaign had the effect of stimulating the production of sawn softwood. Europe's total output is estimated to have increased by more than half a million standards in 1964 to a new record high level of twelve and a quarter million standards. For the third year in succession Europe's sawn softwood trade in 1964 reached a new post-war level. Export (excluding those of the USSR) at 3.8 million standards were up by 6% and imports at 5.7 million standards by 12% compared with 1963.

Sweden's exports in 1964 reached a new all-time record level at 1.2 million standards slightly exceeding the previous high peak in 1929. Finnish exports showed a rise for the first time in four years, but were still substantially below the average exports of 1960-62. Poland's exports rose for the seventh consecutive year to reach a new post-war

record level in 1964. Another relatively large rise in exports was that of Portugal which attained an all-time record level. On the other hand, there was a marked drop in exports from Austria and Yugoslavia as a result of reduced Italian demand.

The expansion of Europe's imports of sawn softwood in 1964 to the new peak level of 5.7 million standards was more remarkable than that of exports in as much as the rise of nearly 600,000 standards (12%) was over and above what had been an all-time record level of imports in the previous year. The sharp increase in Europe's demand in 1964 was, once again, mainly satisfied by arrivals from outside Europe.

Compared with average arrivals in 1959-61 Europe's imports from Canada in 1964 had risen by 116%, those from the USSR by 81% and from other extra-European sources by 63%. In the same period imports from European countries increased by only 8%.

Europe's total apparent consumption of sawn softwood is estimated to have increased by about 900,000 standards in 1964 to pass the fourteen million standards mark for the first time. About half of Europe's total increase of apparent consumption last year took place in the United Kingdom and the Netherlands.

Forward buying for 1965

At the Timber Committee's session last October Europe's import requirements for 1965 were estimated to be about 6% below those of 1964. Generally speaking, however, the market for 1965, which opened very firmly in the early autumn of last year, has not yet shown any marked decrease of import demand.

Total sales by Sweden and Finland up to the end of January at 1,255,000 standards were little changed from the total of 1,230,000 standards at the same time a year ago. Sales by the USSR to Europe up to the end of February were also thought to be little changed but those of Canada to Europe were about 100,000 standards higher by the end of February this year than by the same time last year.

By the spring of 1964 north European export prices for sawn softwood had fully recovered from the drop that had occurred at the end of 1961. Since then prices have continued to advance strongly. By far the greatest rise has occurred in the prices of whitewood and the cheaper qualities of redwood and the gap between redwood and whitewood prices has now been considerably narrowed.

Hardwoods

European production of sawn hardwood in 1964 is estimated, on the basis of incomplete data, to have continued its almost unchecked post-war expansion to the new record level of 15.1 million cubic metres, about 4½% more than output in 1963. Exports of sawn hardwood from European countries in 1964 rose by 7% to about 1.81 million cubic metres. European imports of sawn hardwood in 1964 at 2.58 million cubic metres were also an all-time record.

While European exports of hardwood logs rose by only some 50,000 cubic metres to 990,000 cubic metres in 1964 and remained well below the peak exports of 1960, imports expanded by some 750,000 cubic metres of 12% above the 1963 record level to approximately 7 million cubic metres, made up of about 5.6 million cubic metres of logs of tropical origin (including re-exports from European countries) and the remainder of temperate-zone origin.

The reduction of Italian demand, coupled with the heavy stocks of imported logs in some other countries and the slight fall in plywood production in western Germany, led to some weakening of prices for tropical hardwood logs in the second half of 1964, and in the early months of 1965. The elimination of tariffs as from 1 January 1964 (initially for two years) on tropical hardwoods by a number of European countries seems the probable reason for a noticeable broadening of the pattern of imports in 1964, particularly of those of the two countries, France and the United Kingdom, which previously had tariffs on hardwood imports which offered some protection to the imports from their respective ex-territories. Particularly striking increases took place in France's imports of hardwood logs from Ghana and sawnwood from Malaysia and Ghana and in the United Kingdom's imports of both from the Ivory Coast.

Pulpwood and pitprops

After falling sharply between 1961 and 1963, Europe's exports (excluding those of the USSR) of pulpwood in 1964 at 5.7 million cubic metres were about 650,000 cubic metres higher than the level of the previous year. Imports of pulpwood also recovered last year to reach a new record level of 9.9 million cubic metres an increase of 1.8 million cubic metres or 23% above those in 1963. With imports exceeding exports by 4.3 million cubic metres the deficit in Europe's pulpwood trade was the biggest of all time.

European pulpwood imports from the USSR are estimated to have risen by about 35% in 1964 to a new record level of 3.45 million cubic metres.

Finland and Norway between them accounted from 713,000 cubic metres out of the total European incresae of roughly 900,000 cubic metres from the Soviet Union. European imports from Canada also expanded strongly in 1964, by about 38% to an estimated 1.14 million cubic metres.

Pulpwood prices, which had not followed the upward trend of sawn softwood prices in 1963, advanced strongly in 1964 with the increase in demand especially in northern Europe. European exports of pitprops declined sharply in 1964 for the third year in succession and at about 960,000 cubic metres were less than half the volume exported in 1961.

Panel Products

European output of panel products continued to expand in the fourth quarter of 1964 at about the same rates as in the first three quarters and the totals for the year attained the all-time record levels foreseen in the previous review. In trade, the past year was most notable for the increase in plywood exports from Canada and Finland to Europe. In both cases, the growth was mainly attributable to heavy import demand for exterior grade plywood. This was particularly the case in the United Kingdom where total imports rose by 23% to 864,000 cubic metres (by far the highest ever imported). Particle board output in Europe rose in 1964 by approximately half a million tons to over 2.8 million tons.

Production of fiberboard reached nearly 2½ million tons in Europe in 1964, an increase of more than 200,000 tons from the 1963 level. The faster-than-average rise in non-compressed fiberboard was noteworthy, while that of compressed fiberboard was similar to the average rate of European expansion recorded in recent years. European exports of fiberboard in 1964 increased by 7% and imports by 13%. The improvement in the supply/demand balance of the fiberboard market is indicated by the recovery in prices as exemplified by the c.i.f. cost of United Kingdom imports, the average unit price of which in 1964 was 6.7% higher than in 1963 in the case of hardboard. These prices movements were in contrast to those for plywood, which despite strong import demand remained relatively stable. Inland prices for standard particle board in western Germany, for example, fell on average by nearly 4% in the twelve months to December 1964.

Pulp and paper

It is tentatively estimated that European production of woodpulp (mechanical and chemical) in 1964 reached approximately 21 million tons and of paper and paperboard 28 million tons, increases over the record levels of 1963 of about 8% in each case. Prices for pulp and paper were generally stable during 1964 at levels on average still somewhat below the peak levels attained in 1957-58. Despite the strength of demand, Nordic export prices for pulp were held throughout the year at levels to which they were raised for first quarter shipments, but in the autumn price increases of 3% to 5% were announced for first quarter delivery in 1965. With supply and demand for most pulp grades in better balance than for several years, the northern producers were able to remove the restrictions on production operating ratios, originally introduced late in 1961. Excess world capacity still exists for such mass-produced paper grades as newsprint and kraft, for which in consequence prices remained under some pressure during 1964.

Prospects

It is almost inevitable that after a period of rapid growth in the production, consumption and trade of forest products such as took place in Europe between the second quarter of 1963 and the end of 1964, certain imbalances should emerge. In the case of sawn softwood and of tropical hardwood logs, for example, one major cause for concern at the present time is the volume of stocks in some importing countries which is excessive both from the point of view of the cost of stock-holding in the current period of higher interest rates and in relation to the likely levels of consumption in 1965.

An attempt to assess with reasonable accuracy the prospects for consumption this year, however, runs into more than the usual number of difficulties. In the first place, there are the variety of economic trends in different parts of Europe. In some countries — Italy and France — where growth has more or less come to a stop, it may be necessary to introduce measures to stimulate activity again. Indeed, in Italy an emergency programme has been drawn up, with measures aimed at reducing unemployment, in the building sector by means of a heavy public building programme and tax relief and credit incentives to private enterprise. On the other hand, official economic policy in the United Kingdom is likely to remain disinflationary for some time.

Taking Europe as a whole, however, there appears to be still enough work in hand in the form of houses and other buildings under construction or authorized, outstanding furniture orders and so on, to ensure deliveries from producers and importers continuing at high levels for some months, thus relieving the present over-stocked position.

But later in the year, if interest rates remain high and credit tight, consumers and stockholders may need to restrict replacements in order to reduce stockholdings. Consequently the rate of forward purchasing may now ease back, with the result that towards the end of 1965 imports would fall below the record levels of the corresponding period of last year.

In spite of the uncertain economic climate, however, it does not seem unduly optimistic to expect that for some months to come consumption of forest products will in general continue at last year's record level.

BEATING THE WOOD SHORTAGE WITH MAN-MADE FORESTS TEN MILLION ACRES PLANTED IN 20 YEARS

New man-made forests are springing up all over the world. During the past twenty years more than ten million acres of quick-growing trees have been planted by developing countries to meet the growing demand for more wood.

These new forest plantations are tended in much the same way as agricultural crops. They are, in fact, tree crops and as much attention is paid to planting and cultivating the trees, plying them with fertilizer and water and protecting them against pests and diseases, as would be if they were stands of corn or beans.

In many parts of the developing world these plantations are changing the look of the landscape. High, waving, leafy layers of poplar trees, running alongside ditches and canals, sheltering the field-crops from the wind have become a part of the Turkish scene.

One can drive for miles through plantations of broadleaved teak trees in Indonesia and Burma, or green-needled pine forests in Kenya. Braizl has become as much a home of the eucalyptus as its mother-country, Australia.

But what do we mean by quick-growing species? How does a planted pine forest differ for instance from a naturally-regenerated tropical rain forest?

It is now currently accepted that quick-growing species should be capable of at least 150 cubic feet per acre (or 10 cubic metres per hectare) of new growth each year, indicates a report presented by the Food and Agriculture Organization's Forestry Division at a recent UN meeting in Paris. Visualize a five-foot cube of wood standing in the middle of a football field. This is approximately the amount of extra wood which trees, planted in rows roughly ten feet apart, must grow on this amount of land in one year to be identified as 'quick-growing'.

There are many tree species which are capable of growing as fast as this when planted in good sites and given persistent and skillful attention. Eucalyptus plantations grown for fuelwood in Africa have even produced wood at more than five times this rate. More realistic experience would be South American eucalyptus pulpwood and pole plantations growing at two to three times this rate or pines and cypresses grown for timber in Africa producing over 200 cubic feet per acre per year.

In comparison, the average growth of the useful species of natural broadleaved forests is not likely to be more than a fifth of this fast-growing rate, certainly no more than a third even for natural pine forests.

Natural forests certainly contain fast-growing tree species but these can be outnumbered 100 to 1 by the many other kinds of trees found in such forests. And even these few trees do not come under the definition of 'quick-growing'. They may be excessively shaded by other trees, they are too crowded together, and do not receive the attention that is given in man-made plantations.

Natural forests have many other limitations too, the FAO report says. The hundreds of different species are of differing ages and characteristics. This makes harvesting, transporting and processing difficult and expensive. Relatively few species have the desirable technical and economic qualities needed for forest industries. Again, naturally forested areas are often remote from railways, ports and towns.

Man-made forests, on the other hand, can be planted near to transport or towns. Many more useful trees of the same age with similar characteristics, can be grown much more quickly and in much less space than is possible naturally, even though these same factors do increase the chances of pests and diseases quickly assuming plague proportions. Natural forests rarely yield more than a thousand cubic feet of marketable timber per acre, whereas man-made forests average many times this total, all of which may be long-fibred wood suitable for pulp or sawnwood. This timber, however, should not be regarded as a substitute for the slow-growing, quality timber essential for furniture making and other very exacting uses.

Man-made forests need a good deal of labour. This gives an economic advantage to the developing countries with underemployed-population at low wage

levels. In Indonesia, for instance, plantations cost one-tenth of the European figure to operate, the report states.

The total area of forest land in the developing countries is about 5.5 billion acres, according to FAO statistics, of which less than one-fifth, containing the most accessible productive areas, is being used for timber production.

These same developing countries consume over 100 million cubic metres or 30 million cords (roundwood equivalent) of industrial wood per year, and some six times that figure of fuelwood. Demand for industrial wood is expected almost to double by 1980 yet much of this is already imported. For instance, more than $150 million worth of pulp and paper is imported into Africa each year.

Forest production is being increased in most of the developing countries, but quick-growing plantations offer a short-cut to needed wood supplies. Such plantations can start producing acceptable saw logs from twenty-year-old trees, and pulpwood from ten-year old trees, according to the FAO report. Natural forests need at least five times as long to mature.

By the end of 1964 over ten million acres of fast-growing plantations representing an investment of almost $2,000 million, had been established in the developing countries: 38 per cent in the Asia-Pacific region, 37 per cent in Latin America, 22 per cent in Africa and 3 per cent in the Near East. Some 800,000 additional acres are being planted each year. Even if this current rate of planting could be maintained for the next 25 years, entailing a planting program over more than 20 million acres, and if all these plantations were successful and produced at optimum yield, the expected rise in demand could hardly be met, the FAO report says.

Many of the developing countries are facing the challenge and going ahead with more man-made forests, following the successful example of the southern United States, New Zealand and Australia, Spain and other European countries.

More than a million seedlings are being distributed each year by Turkey's Poplar Institute, a UN Special Fund project set up with the assistance of FAO to improve poplar cultivation and to aid the Turkish forest industries.

Chilean pine forests are being extended to produce more raw material for Chile's growing pulp and paper industry. In ten years Chilean newsprint production alone has increased seven times. The Chilean Institute for Forest Development is a Special Fund project, executed by FAO, and helping the country to grow more wood and to use it more efficiently.

Acacia and pine plantations in the south and west, and a green forest belt around Khartoum are two of the aims of another UN Special Fund project being carried out in the Sudan by an FAO/Sudan team. Altogether, FAO is carrying out projects in seven Asian countries, a dozen African countries and some eighteen countries in Latin America which, in one way or another, assist these countries in going ahead with their programs of planting quick-growing species.

* * *

NUCLEAR ENERGY FOR FORESTRY RESEARCH

— IAEA/FAO International Training Course in Germany —

An eight-week international training course on the use of radioisoptopes and radiation in forestry research will be conducted under the auspices of the International Atomic Energy Agency (IAEA) and the Food and Agriculture Organization with the co-operation of the Government of the Federal Republic of Germany, the local government of Lower Saxony and the Technical University of Hanover, from 11 May - 3 July 1965.

The course is intended to provide intensive training in isotope and radiation techniques in the field of forestry; emphasis will be given to provision of a thorough background review and coverage of the principles and practices of modern techniques of radioisotope utilization with the particular objectives of indicating the kinds of investigations in which these techniques can most profitably be used and their relationship to other research techniques.

The following main fields of research will be covered:

1) Physiology of Nutrition (including mycorrhiza)
   a. Absorption by roots
   b. Foliar absorption
   c. Stem absorption
   d. Transport, nutritional requirements, photosynthesis
2) Pedology and Soil Fertilization
3) Biochemistry
4) Forest Pathology and Entomology
5) Forest Tree Breeding and Genetics
6) Radiobiology and Radioecology.

Twenty-four trainees from as many different countries (Argentina, Austria, Australia, Brazil, Bulgaria, Canada, Czechoslovakia, Finland, Federal Re-

public of Germany, Hungary, Iran, Israel, Italy, Japan, New Zealand, Pakistan, Philippines, Poland, Sweden, Syria, Thailand, Ukraine, United States of America, and Viet-Nam) will attend the course under the general direction of Prof. H. Glubrecht, Director of the Institute of Radiobiology, Hanover Technical University. The Associate Director will be Dr. D.A. Fraser, Department of Forestry, Canada. While most instructors will be German, lecturing staff will also include experts from Greece, Romania, Sweden and members of the Joint FAO/IAEA Division of Atomic Energy in Agriculture.

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WORLD PULP AND PAPER CAPACITY REACHES RECORD LEVEL

The world's capacity to manufacture paper and paperboard has passed the 100-million ton mark, the Food and Agriculture Organization's Advisory Committee on Pulp and Paper reported today, following its sixth meeting held here from May 10-11 under the chairmanship of Mr. R. M. Fowler.

The industry had grown from a world capacity of 83 million metric tons in 1960 to 106 million tons in 1965, said Mr. Fowler, who is President of the Canadian Pulp and Paper Association. New machinery installed during that period had increased capacity by five percent per year, and this rate of expansion was likely to continue up to 1968.

The committee noted that the trend in paper and board capacity appeared to be matching closely the continuing steady rise in paper and board demand. An examination of the most recent capacity estimates, however, indicated that pulp capacity was currently rising somewhat faster than paper and board capacity. Thus a short-term excess of pulp capacity might arise in 1967-8, particularly for bleached kraft market pulp in the North American region.

In opening the meeting, Dr. B. R. Sen, FAO's Director-General, said the recent Cairo Conference on pulp and paper development in Africa and the Near East had shown that many developing countries were intent upon expanding — or creating — pulp-and-paper industries. He felt that FAO needed the advice of the committee, which is made up of representatives of the world's leading pulp and paper industries, more than ever before.

The committee discussed the findings of the Cairo conference and noted that demand for paper and paperboard in Africa and the Near East was expected to more than double by 1980, but that it would be possible for new pulp-and-paper industries to be established in the region capable of meeting four-fifths of this demand.

The committee discussed ways and means of educating and training technicians from the developing countries who will be needed for these new mills, as well as ways of financing such expansion. It also discussed papers presenting the preliminary results of a new study being prepared by the Institute for International Economic Studies, in Stockholm, in co-operation with FAO. This study, expected to be ready for publication before the end of the year, examines Western Europe's future pulp and paper needs and likely sources of fibre to meet these needs.

* * *

CHILEAN ORANGE BOXES

Rome, 30 June—Chile's pine forests will provide nearly two million boxes for Israel's citrus fruit experts this year, a Swedish forester said today.

Mr. T. S. Hederstrom made the announcement upon his return from Israel, where he had been negotiating delivery arrangements. Mr. Hederstrom has been working in Chile for the Food and Agricultural Organization, which helped the Chilean government to set up an Institute for the Development of Forest Resources and Industries. The Institute, with funds from the government and the United Nations Special Fund, is helping to develop new forest products and to find new markets for Chile's forests.

Mr. Hederstrom said an agreement recently signed by Israel and Chile covers lumber and possibly pulp and paper as well as the boxes. The Israeli Citrus Board had agreed in principle to buy increasing quantities of Chilean boxes over the next five years. The first shipment would include some $450,000 worth of boxes.

Chilean factories were currently producing some 20 million boxes yearly, and could produce half as much again. Mr. Hederstrom said there was a tremendous demand in Israel for boxes for its citrus fruit, and that next year 30 million containers would be needed for the orange crop alone.

He said the boxes must be of precise dimensions, since Israel uses machine assembly methods. An inspector of the Israeli Citrus Board would go to Chile to inspect factory facilities and the quality of the finished product.

* * *

FORESTRY IN A CHANGING WORLD

Rome, 5 July — "The role of forestry in a changing world economy" has been announced as

Lebanon, November 1964. In the Lebanon, FAO and the UN Special Fund are engaged in a project which is aimed at the rehabilitation and reforestation of the country's mountains and hill lands, which together occupy 1½ of the 2½ million acres of the total land surface. This program forms a part of the country's "Plan Vert", a ten-year development plan started in 1963. The most famous of the Cedars of Lebanon are those at Boharre in the north of the country, inland from Tripoli. A nursery has been started within this group of very large and ancient trees which can provide 75,000 seedlings each year for planting out. Other sites where the project is operative include Barouk, above Sour (biblical Tyre), and close to the airport at Beirut. Here, and at various other places the project is terracing the land for watershed development and protection, planting eucalyptus and other tree species, as well as investigating the possibilities of citrus orchards and forage crop improvement.

The picture above shows the men potting cedar seedlings at Boharre Nursery. 150,000 *plants can be grown here.* — FAO photo by V. U. Contino.

Workers on terraces above Lala in the Bekaa. Terracing and planting for watershed protection. FAO photo by V. U. Contino.

the theme of the Sixth World Forestry Congress, to be held in Madrid almost a year from now, from 6-18 June 1966.

The Congress is sponsored by the Food and Agriculture Organization and is being held under the auspices of the Government of Spain. More than 2,000 foresters from all over the world are expected to gather at Madrid's International Congress Hall, facing the Prado Museum.

In charge of the nine preparatory committees is Dr. D. Salvador Sanchez Herrera, Director-General of the Spanish Forest Service. Secretary-General of the Congress will be Sr. Manuel Pratz Zapirain, who is also Secretary-General of the Spanish Forestry Service. National, or liaison, committees are being formed in many countries to carry out preparatory work. The Congress will feature the first presentation of FAO's world-wide appraisal-by-regions of world wood resources and future requirements, and will emphasize the problems of the developing countries.

More than 100 formal papers, and many informal contributions, will be presented during four plenary sessions and ten technical committee sessions. The plenary sessions besides dealing with world trends in wood resources and requirements will also cover: planning the case of forest potentials; the institutional framework for forestry development, and the financing of forestry and forest industries development.

The final plenary session will be attended by banking interests and representatives from the various development agencies. Discussions will cover investment problems from four points of view, the bankers', the owners' and the industries'. It will point out the financial implications of world timber trends and problems related to the financing of forestry and forest industries in the developing countries.

The ten technical sessions will be devoted to: afforestation techniques and tree improvement; forest protection; forest management methods and silviculture; wood harvesting, logging and transport; the human factor in forestry; forest questions specific to tropical regions; forest industries, national parks, forest recreation and wildlife; forest influences; and forest economics and statistics.

A special feature, and the first time such an event has been held at the Congress, will be the International Festival of Forestry Film. Some 200 film entries (maximum of four entries per country) are expected. These will be viewed by an advisory board at FAO's Rome headquarters, and the best 25 films will be selected in two categories — instructional and informational — for final showing during the course of the Congress at Madrid.

Many study tours will be carried out both before and after the Congress in France, Portugal and Morocco, in addition to numerous field trips throughout Spain.

A forest equipment exhibition will take place, featuring equipment in two main categories: afforestation and seeds; and harvesting, particularly of small sized wood.

This will be the first World Forestry Congress to be held in a Spanish-speaking country. The proceedings will be simultaneously translated into English, French and Spanish. Previous Congresses were held in Rome (1926), Budapest (1936), Helsinki (1949), Dehra Dun, India (1954) and Seattle, U.S.A., (1960).

HELPING THE HIGHLANDERS OF THE MEDITERRANEAN

The tiny country of Lebanon sits at the opposite end of the Mediterranean to the Gibraltar Straits, at the crossing point between Europe, Africa and Asia.

The Lebanese economy is based on trade and services. There is probably no other country in the world with as a high ratio of services to goods. More than a million and a half Lebanese, almost as many as those in the mother country, work as traders and businessmen in Africa, Asia and Latin America.

Each year millions of tons of merchandise pass through Beirut harbour to and from the Middle East, while more than a million passengers annually use the international airport. Luxurious hotels to accommodate these tourists dominate the city.

Beirut is like a piece of the Riviera set down in an Arab world. The snow and water skiers, the business-men on expense account watching the belly-dancers, the tourists wandering around. Biblos and Baalbeck are the life-blood of Lebanon.

Helping the Peasant Farmer

Not more than a fifth of the national income comes from agriculture. But half of the population depends upon it for their livelihood.

Lebanon holds a leading place in the region for fruit cultivation: bananas and citrus on the coast; olives, grapes and figs on the slopes; apples, pears, peaches and cherries higher up.

Above these fruitful slopes lie the arid stony wastes of the Lebanon Mountains, duplicated on the far side of the Bequaa, the rich farming valley separating the two ranges, by the Anti-Lebanon Mountains which form the frontier with Syria. These twin ranges, together, cover most of the country.

On the lower slopes of the Lebanon Mountains, farmers scratch a subsistence living from vineyards, olives and the pocket-sized cultivation of cereals. Above, from 18,000 to 3,000 metres lie eroded slopes, covered by deep snow in winter. Here can be found a few scattered pines, cypresses and cedars, the only remnants of Lebanon's once-famous forests.

The Anti-Lebanon Mountains, rearing up to the snowy peak of Mount Hermon, form an eroded plateau covered with juniper and scrub oak, the haunt of nomadic herdsmen with their flocks of goat and sheep.

These gaunt grey mountains harbouring poor farming families spread a threatening shadow over the prosperous sea-coast.

Not only is there constant emigration from Lebanon but there is also a drift from the land. Rural families, as almost everywhere in the world, tend to leave the farms for the cities.

Two aims were uppermost in the minds of the Lebanese Government when they asked for international technical assistance in rehabilitating the highlands. Firstly, to improve the lot of the small peasant farmers and to slow down this drift to the cities, by improving the water resources, reducing soil erosion and increasing forest and agricultural production generally. Secondly, to build up the region as a tourist attraction, centered around the ages-old cedar forest.

The mountain areas, covering some three-fifths of the land, are being renovated under Lebanon's 'Green Plan', helped by a United Nations Special Fund project being carried out by the Food and Agriculture Organization (FAO). Lebanese technicians are working side-by-side with FAO foresters, agronomists and land-use experts from other countries. Maurice de Coulon, a Swiss forest economist, is FAO project manager. With him as co-manager is Malek Basbouss, the Lebanese director of the Green Plan organization.

The five-year Special Fund project is helping the Lebanese to renovate the highlands, using the newest techniques of reforestation and watershed management. Lebanese tchnicians are being trained so that they can carry on this work after the project has finished.

Once a Vast Cedar Forest

Until recently, a few groves of cedars were all that remained of a once-mighty forest. The cedar tree has close historical links with ancient Egypt to which it was exported from Lebanon as long as five thousand years ago. Cedar-oil was injected into the corpses of the dead, and cedar-resin was used with bandages in preparing the mummies. The Temple fo Karnak sports a bas-relief showing prisoners-of-war from Syria felling Lebanese cedars.

Even in Roman times the mountains were still shaded with trees, though the Emperor Hadrian caused a series of rock inscriptions to be cut protecting certain trees from excessive cutting. Today, these inscriptions are found on bare eroded slopes.

For centuries, the cedars and pines of Lebanon have propped up the naval ambitions of succeeding civilizations. Two world wars ushered in the last stages of decline with timber being used as fuel and sleepers for the railways. A few years ago, four small groves remained from some half-million hectares of cedars. In the whole country there existed only some 75,000 hectares of scattered forest.

These four small groves, however, for the first time in centuries, are now on the increase. Beneath the remaining cedars hundreds of young seedlings are taking root, protected from the goats searching for fodder of any kind. Beneath the ancient cedar grove at Bcharré, thousands more seedlings are being produced in a tree nursery.

All along the Lebanon range, terraces are being carved from the rocky hillsides and holes blasted out with dynamite to receive the millions of young trees, cedar and pine, which will re-establish the forests once more. On the plains, plantations of quick-growing species, eucalyptus and poplar, are being established to help meet Lebanon's growing demand for more wood. At least four times as much wood is imported into Lebanon as is produced in the country.

Terracing and Tree Planting Underway in the Mountains

Surveys of the soil, water, livestock and vegetation resources have been completed. Forest nurseries have been established. Special studies on wood consumption, torrent control, construction and fish stocking of hill lakes, and the growing of cash-crops have been carried out.

In six selected areas terracing and road-building is underway, often in conjunction with the plant-

(*Continued from page 90*)