Forests—*An Important Farm Asset*

By Leland E. Call
MSA Agricultural Research Advisor
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I am delighted to have the opportunity to participate in today's program here at the College of Forestry. There could not be a more fitting setting for an occasion of this kind than this beautiful campus, where the timbered slopes of Mount Makiling join the rolling cultivated farm land of one of the most productive agricultural sections of this country. Where could there be found a more suitable location in which to discuss the subject that I wish to consider briefly with you to day—Forests, An Important Farm Asset?

When the forest resources of so many countries in the world are depleted, or approaching depletion, it is refreshing to be in a country such as this where forests remain one of the most valuable natural resources. With a total area of slightly less than 30 million hectares, commercial forests cover an area of nearly 11½ million hectares, and non-commercial forests an area of nearly 4½ million hectares, as compared with slightly more than 8 million hectares of cultivated farm land, and about 5 million of open grass land. The total approximate value of the mature timber in the Philippines is estimated to be no less than 480 billion board feet of which approximately one billion board feet is harvested annually. Approximately one-fourth of that harvested is exported, which in 1951 returned a value of more than 32 million pesos to this country.

It has been estimated that if properly developed, managed, and protected, the present output of one billion board feet annually could be doubled without depleting the forest resources of the country. These resources are therefore, in themselves, a most valuable asset and one that is worthy of most careful management, vigorous protection and wise utilization. It is not, however, in lumber production that forests have their greatest value when considered from the standpoint of agriculture. To agriculture, the secondary assets of forests are the more important. It is these assets which I wish to discuss with you today.

The value of forests from the standpoint of the production of lumber is self-evident and usually fully recognized. The indirect value of forests are not so obvious and therefore not so well understood. Frequently, these indirect benefits are not fully recognized until the forests are depleted, and the benefits lost. When this occurs, it is usually too late to reclaim them.

Among the many ways in which forests are beneficial to agriculture, the following are among the most important:

1. *Forests protect the watersheds and help supply a more dependable source of irrigation and farm water.* The extent to which forests serve as a means of collecting rainfall, retarding its flow off the land surface and releasing it gradually through the soil, is seldom appreciated as long as forests are fully preserved to serve in this capacity. It is only after they are destroyed that it is learned that springs ceased to flow, that streams and rivers that had a regular flow under good forestry conditions became rushing torrents following storms and cease to flow during dry periods. Also that dependable wells under good forestation became undependable after the forests are gone. It is

as a regulator of the flow of water from watersheds that forests have one of their most valuable assets from an agricultural standpoint — an asset that is usually not fully appreciated until lost.

In a country such as the Philippines, where water for irrigation is of utmost importance from the standpoint of rice and sugar production and where it is essential that the maximum area of land be irrigated if the country is to become self-supporting from the standpoint of food production, forests have unusual value and their protection and preservation is absolutely necessary to safeguard the water supplies for irrigation.

It is estimated that approximately 670,000 hectares of land are now under irrigation in the Philippines and that this area could be doubled if full use was made of the water now available. To safeguard this water resource, the forests of the country must be protected in order that they may perform their useful function of retarding floods, retaining part of the rain water where it falls, and releasing this water gradually, thus providing a more dependable flow of water throughout the year. In this way, the likelihood of disastrous floods is lessened during wet seasons and more water is available for irrigation and domestic use during dry seasons. This is one of the important ways that forests contribute to the welfare of agriculture.

II. *Forests act to stabilize the soil on slopes too steep for farming.* A second important function performed by forests is to protect the soil and prevent landslides and soil erosions from slopes too steep to farm. Serving in this manner, forests protect lower cultivated farm land and farm improvements that are easily damaged by landslides and deposits of talus washed down from unprotected mountain and hill land. A forest soil cover is also useful in retarding the removal by erosion of soil material from sloping land. This material is often deposited at lower levels in irrigation ditches and other places where it interferes with farm operations. In this connection, it is interesting to observe the plantings of ipil-ipil on the limestone hill lands in the vicinity of Los Baños where this forest cover is not only protecting lower farm land and retarding erosion, but is providing an outlet for farm labor in the form of a marketable product —firewood. Many more plantings of this character should be made in the Philippines under conditions favorable for such development such as on the coral soils of Cebu and other areas where the soils are sufficiently high in lime to support vegetations of this kind.

III. *Forests often provide supplementary grazing for livestock.* Associated with forests are open, extensive areas of grass land suitable for grazing. In the Philippines, forest grazing is an integral part of the activities of the Bureau of Forestry. Grazing in this country is regulated by the Pasture Land Act (Commonwealth Act No. 452, June 8, 1939). This law provides, among other things, that the administration of pasture lands, or lands used as such, rests in the Bureau of Forestry. About 5 million hectares, or about 17 percent of the total area of the Philippines, are open and grass lands. Of this area, perhaps somewhat more than one million hectares is suitable for permanent pasture purposes.

Before the war about half of the agricultural wealth of the country was made up of animals and animal products. At that time, utilization of forestry land as grazing constituted an important asset. The Bureau of Forestry had issued (1941) 1,471 pasture permits covering nearly 119,000 hectares. Since the war the cattle grazing industry has been slow to recover. This has been due to the loss of cattle that occurred during the war when grazing herds were devastated. Sufficient time has not elapsed to permit the rehabilitation of these herds. Another retarding factor has been the failure to maintain peace and order in some sections of the country. This has discour-

aged livestock men from re-stocking. Thus, at present the Bureau of Forestry has outstanding only 685 pasture permits covering slightly more than 66,000 hectares. However, there are pending nearly 1,500 applications for permits covering over 300,000 hectares. It is evident that grazing can become again an important source of material wealth and that with judicious management and proper safeguards, forest lands can be utilized for this without detriment to the forests, with advantage to the grazing lands and with a distinct contribution to the economic recovery of the country.

IV. *Forests are a source of much material essential to the farmer.* Communal forests that have been extensively developed in Europe are being developed to some extent in the Philippines. They will no doubt be developed more extensively as their value becomes better understood, as the need for forest products for farm use increases, and as it becomes more difficult and expensive to secure them from the national forests. A communal forest is forest land, owned, maintained and operated by a community. The products are divided and distributed among the owners. Forests of this kind devoted to the growth of trees provide near at hand a source of supply of firewood, fencing material, construction material for buildings and products for many other uses. Areas of land not well adapted to the production of food crops can be devoted to production of this kind without decreasing income from food and cash crops and with distinct advantage from the standpoint of having readily available for many farm uses and at little cost the products produced from wood lots of this character. In a country where bamboo and other quick-growing forest products may be produced readily and with ease, communal forests and wood lots should occupy a more important position in the economy of the country than they occupy at this time.

V. *Forests provide supplementary off-season labor opportunities for farmers.*

Most farm work is seasonal in character. Many farmers have periods of time during the year when their labor cannot be too profitably employed on their own farms. Where there are forests near at hand, work can often be obtained in the forests by such farmers for those portions of the year when there is not profitable employment at home —thus, work in forests can provide supplementary farm labor and thus lower agricultural under-employment.

Mention has already been made of the ipil-ipil plantings near Los Baños. The harvesting of such firewood can be done at seasons of the year when other farm work is not pressing. A concession for the harvesting of wood of this character might be obtained by farmers living in the community so that work in the woodlot could be done at off-seasons for other farm work. Much bamboo in the country is harvested by farmers when other farm work is not pressing. Greater advantage might be taken of opportunities of this kind than is now being taken by many farmers.

VI. *Forests provide a supplementary food source.*

The development of good game and fish habitat in forests makes possible the production of game and fish that can serve as an important supplementary food supply to farmers. This, however, is not an unmixed blessing to those farmers whose farms adjoin forests where the destruction of crops by wild hogs and deer is altogether too common. However, by taking proper precautions, much of this type of damage can be prevented and forests made a valuable supplementary food source from the game and fish that they may be made to supply.

VII. *Forests provide recreation opportunities for farm families.*

As a country increases in population and becomes more densely settled, and especially as it becomes more highly industrialized,

the need for open spaces where people may go for recreation increases. Forests provide room and playgrounds for this purpose. In the United States and in many other countries, the forested areas are becoming increasingly more valuable for recreation purposes. In some of the more densely settled areas of America, especially through New York and New England, the public forests have been developed into extensive picnic and play grounds where millions of people go each year for recreation and relaxation. Not much use has been made as yet of forests for this purpose in the Philippines but their use for this purpose will increase. It will come as population increases, as the country develops industrially, and as the economic welfare of the lower and middle-income groups of the population improves, so that they have more leisure time and more pesos to spend for recreation purposes.

The extent to which the campus of this College and the park of the Bureau of Forestry is used each weekend by hundreds of people is an indication of the increased use that will be made of the forests of this country for recreational purposes in years ahead. This is a use that will be increasingly appreciated and a use that will be shared by farm folk as well as town and city people. Increased attention will no doubt be given by the Bureau of Forestry to this valuable asset of the national forests.

To summarize, it is well to remember that forests are one of the most valuable assets of the Philippines. While their use no doubt always will be most highly regarded from the standpoint of their major value—that of providing lumber and other forest products, at the same time they have many other valuable assets—assets that are important to the agriculture of the country. Among these assets are the value of forests for the protection of watersheds, for the stabilization of soil on sloping land, for supplementary grazing for livestock, for supplying off-season labor opportunities and for recreation purposes. As time passes, these so-called secondary assets of forests will increase in importance. Every citizen of the Philippines should have a personal interest in the national forests of which he is part owner, to see that conservation practices are followed through judicious use, and that the forests are protected and preserved in such a way as to pass on to future generations both the primary and secondary benefits of well managed forest land.

The red heartwood of Maple seldom begins to develop until the tree is 50 years old, so trees up—to that age have generally solid, white sapwood.

There is an automatic calculator which automatically accumulate lineal feet for each dimension, converts the lineal feet to board feet, and automatically adds and accumulates board feet as the values are being calculated. Also it computes the discount and automatically subtracts it from the total.