

# The Contribution of Forests to Agriculture\*

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Forests contribute heavily to the welfare of agriculture. The contributions of the past have been many, principally in providing protective cover to the soil in regions of heavy rainfall and thereby furnishing conditions favorable for the formation of productive soils. Without the cover provided by forests, destructive erosion would have been so rapid under most humid conditions that a productive agricultural soil could not have been formed. Furthermore, without the aid of forests in providing conditions conducive to the accumulation of organic matter, soil forming processes would have proceeded less rapidly and soils of less value to agriculture would have been produced. It is, however, the purpose of this paper to discuss the contribution that forests are making to modern agriculture rather than to stress the contributions of the forests of the past.

The primary value of forests to produce lumber and other forest products useful to agriculture is self evident and usually fully recognized. The secondary values of forests are not so obvious and therefore less well understood. Frequently these indirect benefits are not fully appreciated until the forests are depleted and the benefits lost. When this occurs, it is usually too late to reclaim them completely.

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 irriga-*

*tion 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 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 most of Southeast Asia where water for irrigation is of utmost importance from the standpoint of rice production and where it is essential that the maximum area of land be irrigated if these countries are to produce sufficient food for the increasing population, forests have unusual value and their protection and preservation is necessary to safeguard water supplies for irrigation. When the forests are properly protected they 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 destructive floods is lessened during the wet seasons, and more water is available for irrigation and domestic use during dry seasons. This is one of the most important

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ways that forests contribute to the welfare of agriculture.

2. *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 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.

3. *Forests often provide supplementary grazing for livestock.* Associated with forests are open, extensive areas of grassland suitable for grazing. When properly safeguarded, this land can make a valuable contribution to the economy of the country through the production of livestock products. Before the war, about half of the agricultural wealth of the Philippines was made up of animals and animal products. At that time utilization of forest land for grazing contributed appreciably to this asset. 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.

It is evident that the grazing of forest land can become again an important source of material wealth, not only in the Philippines but throughout much of Southeast Asia and that with judicious management and proper safeguards, forest lands can be utilized for this purpose without detriment to the forests, with advantage to the grazing land and with distinct contribution to the economic welfare of this section of the world.

4. *Forests are a source of much material essential to the farmer.* Communal forests have been extensively developed in Europe.

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.

5. *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 reduce agricultural under-employment.

6. *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 supplement.

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suggests that grassland research including those for the tropics as well as for the Philippines is progressing along broad lines. The five factors each interacting which in turn determine grassland productivity are: (1) productive capacity of the soil, (2) species and strains of plants available, (3) type and genetic constitution of animals to be raised, (4) management, and (5) social relations—each and all of them are not only discussed individually, but consider also their interesting relations. Papers on breeding and selection of plants, soil improvement, management, and other phases, suggest that empirical methods of procedure are giving way to more specific techniques.

From the foregoing, it is very clear that the Philippines may be able to learn and adopt whatever is applicable to our present needs. In short, we have to be practical and follow only those that are of value to our conditions and/or circumstances. I thank you.

**THE CONTRIBUTION . . .** (*Con't from p. 4*)  
tary food source from the game and fish that they may be made to supply.

7. *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 recreational 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 playgrounds 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 most Southeast Asian countries, but their use for this purpose will increase. It will come as the lower and middle-income groups of the population improve so that they have more leisure time and more money to spend for recreation purposes.

To summarize, it is well to remember that forests are a most valuable asset. 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 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 should have a personal interest in public forests of which he is part owner, to see that conservation practices are followed through judicious use, and that the forest 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.

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