

# *Forest Exploitation in Relation To Forest Conservation \**

By

CARLOS SULIT

*Actg. Chief, Administrative Division*

## BUREAU OF FORESTRY

The importance of this First Philippine Conservation and Reforestation Conference, cannot be over-emphasized. It is important because it is in line with the policy of the present administration concerning the development of our natural resources. It is important because it will focus the attention of our people to the part that forests play not only in the economic, industrial, social and agricultural development of the country, but also in the influence of forests on weather and climatic conditions of a locality and their effect on soil conservation, and regulation of floods. It is important in order to restore the forest consciousness which we have developed before the war but which, unfortunately, suffered a serious setback due to the demoralization of the people as a result of the Japanese occupation and the last Pacific war. This conference should make our people realize that our forest is not inexhaustible but a replaceable natural resource, which if properly treated and utilized, could render direct and indirect benefits to our country and our people for generations to come. They should, therefore, be managed accordingly so that the forest can help by providing the necessary raw materials for our lumbering and other wood working industries, give employment to thousands of laborers and develop our export trade. It is, therefore, important that we properly evaluate the basic relationship between forest exploitation and forest conservation.

*FOREST CONSERVATION* has been defined in many ways. However, for our use at present, we might say that it is the wise utilization of our forest resources so that we could get the best and maximum use. Its principal object is to make the forest render the greatest good to the greatest number in the longest time possible. It should not be confused with the notion of the over "sentimentalists" that the forest should be looked from all kinds of uses, including logging and lumbering. This is *FOREST PRESERVATION* which is an economic waste. Neither does forest conservation mean the cutting of forest trees as rapidly as possible without due regard to replacement. This is *TIMBER EXPLOITATION* which has for its object the securing of the highest possible production in the shortest time only to abandon the area later leaving afterwards what are generally known as "ghost towns". It is just as much an economic waste as forest preservation, although it is more destructive. We should, therefore, call the harvesting of trees as *TIMBER UTILIZATION* which if carried out in a rational manner, is not opposed but is essential to forest conservation. For forestry is essentially a business undertaking dealing not only with the raising but also with the harvesting of tree crops. Timber utilization, together with forestry practices like silviculture, protection and management which are complimentary to each other forms an important part of forest conservation.

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But forest conservation has never been popular in any country especially at the early stages of its development. To many, the objectives of lumbering and forest conservation seem to be contradictory. In fact sometime in the past foresters and lumbermen were in a sort of undeclared war, each believing that one exists simply to make life difficult for the other. There were times when a lumberman and the so-called pioneer looked upon the forester as a sentimentalist and dreamer who always talked about forest heritage and in the interest of posterity and future generations that his obsession in life was to delay, obstruct, defeat and otherwise frustrate the purpose and effort of the lumberman to cut timber and make profit, and that the sole object of the Bureau of Forestry is to collect revenue. On the other hand, the forester considers the lumberman as that species of mankind whose one passion in life is to cut as much timber as he can, circumvent all the forest laws and regulations and make the most profit in the shortest time without regard to the perpetuation of the forest. Happily, these are of the past and now both foresters and lumbermen recognize that they could not only exist together, but also are essential in the practice of forestry, and thru the sympathetic understanding of many lumbermen they have come to accept that after all the foresters, for that matter the Bureau of Forestry, have also the best interest of the lumber industry, and whatever rules and regulations the bureau prescribes, which may appear antagonistic to the lumbermen, are for the protection, wise utilization and conservation of our forest.

Our increasing population, with the corresponding increased demand for lumber and the reduction of our forest area due to agricultural development, will require better and more intensive forest management to keep our forest in productive condition. Excessive or unlimited exploitation of our timber resources will reduce the forest capital which will lead to forest depletion. Such a condi-

tion will be disastrous both to the Lumber Industry and to Forestry. We must, therefore, start rational timber utilization through the practice of selective cutting and placing our forests under sustained yield management. Lumbermen will play an important role in this undertaking.

Sustained yield has for its main object the harvesting of the timber crop equivalent to the growth or increment that the forest, as a capital, may produce. This can be partly attained by selective or selection cutting which is the "removal of mature timber, usually the oldest or largest trees, either as single scattered trees or in small groups at relatively short intervals commonly 5 to 20 years, repeated indefinitely, by means of which the continuous establishment of natural reproduction is encouraged." This will result in the maintenance of the stand in continuous production thru natural regeneration by leaving enough residual stand to constitute succeeding economic cuts within reasonable periods of time.

The lumbermen's main objection against the application of this forestry practice is that it is not economically feasible. They maintain that with the heavy investment they have it is necessary that they should get the most from the forest to make their investment pay. However, thru improved management methods and close utilization, it is possible to lower the cost of production and realize reasonable profit, and at the same time have assurance of the stability of the industry in the succeeding years.

History of other countries, especially the United States, showed that at the beginning this forest practice met with persistent and strong opposition on the part of the lumber operators, but later on they were the ones who realized its importance in the stability of the lumber and allied industries so that at present they are strong advocates of sustained yield management not only in the government forests but also in those privately owned.

In view of the peculiar condition of our

forest which in many\* cases are over-matured, the application of this system of cutting should be made gradually and only in areas where it is feasible both from the forestry and economic points of view. At present this system is being practiced voluntarily on the part of the operator in the Bislig Bay Concession in Surigao. It is also being practiced in Basilan Island through the cooperation of the Bureau of Forestry and the lumbermen themselves. In both places it was found to be economically feasible and although it may work hardship on the part of the operators at the beginning, in the long run it will be to their advantage as their heavy investment is assured of future supply for successive cuttings.

In the application of this system of cutting, we have to divide our timber operators into two classes:

(1) Where the operation of a licensee is already going on, and

(2) where the privilege of cutting will be given to new licensees.

The latter will involve less complicated problems than the former inasmuch as the Bureau of Forestry will be in a position to stipulate the conditions under which the operation should be conducted as well as the investment and kind of machinery to be used. It is in the former class that the cooperation of the lumbermen is especially needed as they have already put up a great deal of capital in the form of logging and sawmill machineries. However, selective cutting should be applied on permanent forest lands where conditions and distribution of size classes warrant. In areas that are potentially agricultural or where the trees are over matured, some degree of clear-cutting and logging under the present system of diameter limit may be allowed to continue. Since varying conditions of stand exist in various parts, this cutting system should not be applied uniformly in all areas but should be flexible and varied to suit different conditions. This will require good professional judgment not only on the part

of the Bureau of Forestry but also on the part of the operators who, together with the members of the felling or logging crews, should be indoctrinated to this present day kind of forestry thinking and practice.

Another way in which forest exploitation can help in the conservation of our forest is by reducing or utilizing the wastes in the logging and sawmilling of our trees and in utilizing woods which at present are not well known in the markets. It is figured that about 25% of the tree is wasted in the logging process and 50% in sawmilling. This is shown below:

*Wastes in the forests*

Stumps .....	5%
Tops, limbs and branches ....	14%
Defective and shattered stems .	5%
Miscellaneous .....	1%
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Total .....	25%

*Wastes in lumber manufacturing*

Bark .....	8%
Slabs .....	10%
Sawdusts .....	12%
Edgings, trimmings & choppings	10%
Seasoning .....	5%
Remanufacture .....	3%
Miscellaneous .....	2%
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Total .....	50%

This means that for every 1,000 board feet in a tree about 250 bd. ft. are left in the woods in the form of tops, branches, stumps, etc. and about 500 bd. ft. are lost in the sawmills in the form of bark, sawdusts, slabs, edgings, and trimmings. Through improved methods and closer supervision in logging and lumber manufacture, these tremendous wastes could be made into usable products like wood pulp, wall boards, etc. or thru chemical process they could be made to produce alcohol, tar and other products of wood distillation. At present some companies are utilizing edgings and trimmings in the manufacture of chair stocks and box shooks. Slabs of Benguet Pine are being utilized in the manufacture of picture frames and electrical wire mouldings. With the adoption of

a system of integrated industries, wastes in lumber manufacture could be minimized. In some countries, these wastes has been reduced to about 20%, as compared with our present estimated waste of 75%. By means of wood preservation and using the proper species and dimensions in construction work, a great amount of wood could be saved. This of course requires tests and studies. By prolonging the life of our logs and lumber through the application of preservatives, the drain on our forests could be reduced. Treated Apitong has been found to last 8 to 13 times longer than untreated ones. They are being used now to replace Molave, Yacal and Ipil for railroad ties. The sapwoods of our important trees, like Narra and some of our so-called secondary species in the forests when treated with preservatives can be protected from decay and insect attacks so that their usefulness could be prolonged. The Forest Products Laboratory which is now under construction by the Bureau of Forestry at Los Baños, Laguna could help solve many of these problems.

Of the 464 billion bd. ft. as estimated volume of highland forests, 75% belong to the dipterocarps. The percentage distribution by most common species all over the Philippines, is as follows:

White Lauan .....	19.52%
Apitong .....	12.36%
Tangile .....	9.47%
Mayapis .....	9.11%
Red Lauan .....	8.76%
Guijo .....	5.06%
Yakal .....	3.51%
Benguet Pine .....	2.30%
Mangachapui .....	2.05%
Palosapis .....	1.32%
Bagtikan .....	1.31%
Narra .....	1.18%
Almon .....	1.00%

The other species represent less than one percent.

In our forest are found more than 3,000 arborescent species that attain a diameter of 30 centimeters. However, only about 200 of these have been studied for their wood structure and working qualities. Aproximate-

ly 60 species are handled by the sawmills and only 15 species are generally available in the Manila lumber yards. Many of these 3,000 woody plants are as good or even better than some of the marketed species both for construction work and cabinet making. With the cooperation of the lumber industry and the Bureau of Forestry, the use of these woods, many of which are at present considered as wood species can be popularized. Among the less known species several years ago which at present are in demand in the lumber market may be mentioned Dao and Mangasinoro. After their physical properties and drying requirements were studied they became popular not only locally but also abroad for plywood. This will help in relieving the drain on our important commercial trees, some of which are now difficult to obtain.

One aspect of unrestricted forest exploitation is the unlimited exportation of our logs and lumber. There is a great demand for our logs in Japan. These are manufactured into plywood and lumber and later exported to the United States. In view of the cheap and efficient Japanese labor, close utilization and lower freight rates, these wood products can undersell our lumber and plywood in the United States.

During the last fiscal year our total exportation of logs and lumber amounted to 676,075,795 board feet valued at ₱69,766,439.72. Of these, 516,165,810 board feet valued at ₱51,717,772.50 representing 82.4% and 74.1%, respectively, went to Japan. Only 68,821,679 board feet or 11% went to the United States, our principal market which led to agitation on the part of some people to limit this exportation. This is due to the fact that it does not only deprive the country of the labor employment necessary in processing logs into lumber, compete with our trade on these products in the United States but it also depletes our forests. Since it is not a good policy to stop entirely our export trade, it is suggested that the expor-

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## FOREST EXPLOITATION . . .

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tation of logs to Japan be limited to what that country needs for local use.

In order to help in the conservation of our forest and insure the stability of the lumber industry, it is recommended that (1) selective method of cutting should be applied on permanent forest lands where conditions warrant; (2) reduce and utilize wastes in logging and sawmilling through improved methods of manufacture and by establishing a system of integrated industries; (3) lessen the drain on our forest through the use of less popular but just as good wood and by means of wood preservation; (4) conduct studies on the chemical and physical properties of woods through the Forest Products Laboratory; and (5) limit exportation of logs to Japan to at least what that country actually needs for her local use.

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## TECHNIQUES AND . . .

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still remains to be a serious one. Millions of dollars are spent every year on painting, decorating, maintenance, and repairs, because of disfigurement and damage caused by cold weather condensation.

Another problem which this section has been doing a lot of work in preliminary studies is how to prevent water entering between outside wall sidings caused by capillarity. It has not been only causing failures in paints but has also been the root cause of decay, thereby shortening the life of the building.

Thermal insulation is another study that is considered of great importance because of the peculiarly cold climate during winter and the exceedingly hot weather during summer. To make the houses as comfortable as possible during the period of climatic extremes the houses should be properly insulated.

The inflow of heat through outside walls and roofs in hot weather or its outflow during cold weather has important effects not

## REFORESTATION WITH . . .

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estation projects. It is, therefore, to the best interest of the public if the reforestation projects be removed from the responsibility and supervision of the District Foresters and be placed under the five Supervising Foresters who should devote their full time supervising the projects under them. These Supervisors will in turn be responsible to the Director of Forestry through the Chief, Division of Reclamation and Reforestation. This set-up will reduce the span of control, hence less red tape and better efficiency.

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## EXCERPTS AND . . .

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diameter of the tree above buttress becomes bigger; (2) The damage in felling increases as the tree grows taller; (3) The damage in felling increases with the volume of the tree; (4) The damage in felling increases with the per cent of slope if the trees are felled downslope; (5) The damage in felling largely occurs in the unmerchantable tops with a ratio of 1 per cent damage for every 2 per cent in the unmerchantable top; and (6) The damage in bucking is low and negligible. These findings may not be applicable to all cases since conditions in different places are different.

—P. D. Bautista

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A good reputation; a clear conscience; appreciation of nature; a peaceful heart; the knowledge of having given happiness to others; a trained and well-filled mind; satisfaction from duty well done; faith in the outcome of right; contentment; well-adjusted social relationship: these make for true happiness.

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only on the occupants but also on the furniture and fixtures as well as the building materials of the house. Besides, during cold weather, such heat flow also governs fuel consumption to a great extent. Most structural and finishing materials used in building are low in resistance to heat transmission. Hence, the necessity for the use of insulating materials to be incorporated in exterior walls, ceilings, and floors so as to increase resistance to heat passage.

*(To be continued)*