

Necessary Balance of Forest Cover

By

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I. INTRODUCTION

(a) *Why Necessary Balance.*—Likened to a balanced budget with appropriate reserves to cover unforeseen deficits, there should be also in any country the necessary balance of soil cover. In order to strengthen and stabilize the economic structure of the nation, said necessary balance including **FOREST COVER** must be consistently maintained.

(b) *Scope of this Paper.*—As stated in the title, this dissertation is mainly concerned with the necessary balance of forest cover in the Philippines which according to official figures is about 12,500,000 hectares or 42% of the 29.74 million hectares land area of the country. It is within this area where the Bureau of Forestry will implement sustained yield management, forest conservation, soil and watershed protection, range management, parks and wildlife, reclamation and reforestation of denuded and cut-over areas. In short, the art, science and business of forest and forestry can be practiced from now and forever in said permanent forest cover.

It should be borne in mind, however, that it is impossible to apply the 42% allocation for forest purposes in every province, because of the various existing conditions like watersheds, topography, soil, season, population, social economic expediency, method of cultivation employed as well as the peculiarity of crops raised in each locality. Thus, in some provinces or regions, the allocation is much less or much more than the 42% figure for the whole Philippines.

II. PHILIPPINE FOREST POLICY

(a) *Constitutional Mandate.*—The conservation and utilization of our natural resources, of which forests and forest lands form a significant part, is expressly stipulated in Article XIII of our Constitution. It has a background dating back as far as 1863 when the Spanish Government then organized a Forest Service wherein among other things, the delimitation of public lands for disposition was aptly provided. This stipulation accounts for the almost exclusive ownership of forests and forest lands by the Philippine Republic to the extent of approximately 97.5%, leaving only 2.5% under private ownership.

(b) *Forest Laws, Acts, Rules and Regulations.*—Upon occupation of the Islands on August 13, 1898 by the United States, the policy of forest conservation was made potent by creating the Bureau of Forestry on April 14, 1900. A series of Acts of the U.S. Congress and that of the Philippine Commission followed like the Spooner Amendment (March 2, 1901), the Philippine Bill (July 1, 1902), and the Forest Act (May 7, 1904). Pursuant to the Philippine Bill, the Philippine Legislature enacted the Administrative Code on February 24, 1916 which was revised in 1917. This is still our basic Forest Law as amended by subsequent Acts of the Philippine Legislature, the National Assembly and the present Congress. Special forest laws have also been passed to promote forest conservation and more efficient forest administration implemented by appropriate

rules and regulations. Among these special laws may be mentioned the Game and Fish Law (Act 3983), Grazing Act No. 452, Reforestation Law (Act 115) and the recent creation of the Parks and Wildlife Commission.

III. BASIC FOREST ADMINISTRATION

(a) *Revised Administrative Code of 1917.*

—The principle underlying the forest administration ever since 1863 has been the proper protection, delimitation, conservation and utilization by wise use of the forest resources of the nation. The Spanish laws were exceedingly conservative and embraced provisions which were far reaching particularly in the way of conservation and protection against human destruction and unwise utilization. Practically same were adopted in the inauguration of the Forest Service under the American Regime wherein the same was carried with little modifications to the Commonwealth Government and later on to the Republic. Thus, ever since and by law, the Bureau of Forestry is given the priority of determining which portion of the public domain should be retained for forest purposes and to segregate such from the rest to be alienable and disposable or lands not needed for forest purposes.

(b) *Implementation.*—The implementations of the necessary balance as blueprinted by the Bureau of Forestry was and still is progressively carried on along with land classification work which is practically being executed all over the Philippines. Land classification is simply the zonification of the land areas into the various essential economic uses which will redound to and promote the best interest and well-being of the people not only for the present, but also for the generations to come. The work was rather slow due to lack of trained personnel to undertake the delimitation and necessary funds for expenses. However, the passage of Commonwealth Act No. 2874 in 1919, known as the Public Land Law aided much in aug-

menting funds for land classification. Later, Commonwealth Act No. 141, the amended Public Land Law was passed which classifies the public domain into three categories — (1) alienable and disposable, (2) timber lands and (3) mineral lands. The phrase then in use in releasing the land, GOOD FOR AGRICULTURE, is outmoded, instead, NOT NEEDED FOR FOREST PURPOSES is adopted.

(c) *Land Classification under PHILCUSA-FOA.*—Then land classification was further accelerated upon the availability of the PHILCUSA-FOA joint aid effective February 1, 1952. This enabled the Forestry Office to organize 40 field parties of three forest officers each team which have been assigned to execute land classification in different parts of the Philippines as follows: 25 in Mindanao, 9 in Luzon, 4 in Visayas, and one each in Mindoro and Palawan. As of June 30, 1954, of the 29,740,972 hectares area of the Philippines 10,632,500 hectares or 35.75% has been classified alienable-disposable lands, 2,043,761 hectares or 6.87% timberlands, leaving a balance of 17,064,711 hectares or 57.38% still unclassified.

IV. SOIL UTILIZATION AND CONSERVATION

(a) *Utilization.*—As already mentioned the Bureau of Forestry is charged to classify first publicly owned forest lands to determine the best permanent use, whether for forestry or for agricultural purposes. The proper utilization of lands in order to achieve the most effective use is, therefore, very important in any economic planning for developments of a country. Countries which have misused their lands have suffered tremendous misery, privation and sufferings. Outstanding examples of abuse in the use of forest lands are found in many countries, which are not only suffering from destructive floods but also spending enormous sums of money to reforest the barren areas and to control rivers, which had been unmanageable partly on account of deforested river banks

Deforested areas in reserved forest lands

are being reforested and the work is being pushed through as funds for the purpose become available. Deforested watersheds of destructive rivers are given preferential attention, in order to minimize floods as much as possible and to reduce soil erosion.

The work of correcting torrents in this country is not as yet given the attention it deserves. Reforestation of hillsides along torrential streams is the only one being done, which will ultimately effect the correction with irrigation projects on agricultural lands.

Soil conservation is under the charge of a newly created Bureau of Soil Conservation, which is doing a great deal of work along this line. The Bureau of Forestry, in its reforestation activity and in its general work of forest conservation, cooperates closely with this Bureau in conserving the soil resources of the country.

The greatest enemy of our forest conservation is the clearing of forest lands for temporary cultivation, known locally as "kaiñgin" making. Through this process, big volume of timber worth thousands of pesos have been destroyed annually. The destruction was greatly increased during the Japanese occupation of the country, because the people not only took refuge in the forest, but also made clearings to produce food crops. The Bureau of Forestry has been exerting efforts to protect the public forest from said pernicious clearing.

Clearing of forest lands for temporary cultivation is not entirely prohibited by the Bureau of Forestry. After great calamities, such as storms destroying agricultural crops, famines, etc., small areas in public forest lands are allowed for cultivation after watersheds, soil condition, topography, etc., have been thoroughly examined without endangering soil erosion. For the use of forest lands for temporary cultivation, the permittee pays a nominal rental for the land.

(b) *Protection*.—Forest protection is very essential in any forest management. Fortunately in the Philippines, we do not have devastating forest fires, like the United States

except at times in the Mountain Province, to which the coniferous forest (Benguet pine) is susceptible. Insects and diseases as enemies of our forest do not come to alarming proportions because of the nature, type and composition of our forests, consisting many species growing in mixed stands, not like the pure forests of the temperate regions. Consequently, the protection of our forests from insect pests and diseases is not a big problem. Control of pests and diseases is sometimes needed in our forest nurseries, where seedlings are raised for planting purposes.

Although forest fires do not occur in our broad-leaved forests, grass fires are inimical to reproduction, especially during the dry season when the fires encroach upon newly planted areas. Surface fires on newly logged-over areas cause considerable damage to existing forest vegetation. Grass fires may be controlled by constant patrol and organized fire fighting crews so that the damage may be minimized.

Illegal clearing caused by man is, of course, the greatest enemy of our forest. To control and to stop illegal kaiñgin-making, a law is in effect, which has increased considerably the penalties imposed on the violator according to the kind of forest destroyed.

V. WHAT SHOULD BE THE NECESSARY BALANCE?

(a) *Factors*.—The idea underlying the implementation of the necessary balance of soil cover is based on the result of observations all over the world that forest trees and other plant growths when undisturbed in their natural conditions are the best protective cover of the soil. Regions, therefore, which are susceptible to accelerated soil erosion should be kept under the protective cover of trees or some form of vegetation.

In the directive for land classification, it is considered conservative to use 10 degrees (18%) as the maximum gradient of slope for lands to be released as alienable and disposable, but in many instances we find exception as in the case of areas devoted to

the planting of coconuts, orchards where 30 or more degrees are the prevailing gradients. This condition is also true in many places in the Mt. Province where the prevailing practice of natives is the use of terraces in cultivating their farms on steep slopes. In other words, the objective is to designate and assign area to which it is inherently capable of producing the maximum return with the least expense possible. Generally, even the area is slope from level to 10 degrees provided not sandy or stony, neither is reached by salt water, said area is suited for general farming purposes.

If still forested, as soon as the commercial timber therein is utilized, it would be more advantageous and beneficial to have the land dedicated to farming. However, if it is covered with climax forest, like the towering dipterocarps, much more if it contains beautiful and unique scenery or inhabited with wild life especially rich flora and fauna, such land should be kept and maintained for forest purposes. In addition, areas with steep slope even the soil is rich same may be tentatively demarcated for cultivation provided terracing is to be resorted. This practice is prevalent along the Baguio-Bontoc Road. Therefore, areas that have a slope higher than 10 degrees or 18 per cent should be kept for permanent forest purposes, because such areas are inherently adapted to the raising of forest crops and not only to maintain soil fertility and to conserve moisture, but also to prevent soil erosion and to minimize the effect of climatic extremes.

Summarizing, the factors to be considered in maintaining the necessary balance of forest cover are as follows:

- (a) Watershed
- (b) Topography
- (c) Soil Fertility
- (d) Economic exigencies, like production of special timber species and minor forest products, as well as protective forest springs, game refuges, grazing areas and/or recreational areas.

(b) *Multiple Uses of Forest Lands.*—Since forestry embraces the art, science and business of whatever can be produced from the forest for the use of man, its multiple uses appear unnecessary to enumerate. Suffice it to mention here, that aside from the conservation and utilization of forest products, forests mitigate the effect of destructive floods, prevent soil erosion, temper extreme weather conditions, preserve aesthetic values and unique scenery as well as forest grazing areas both for wild life and domestic animals. Land uses under special use permits will be discussed more under Section 1838 of the Administrative Code as one of the appendices.

Trends in Other Countries.—The 42% figure for the necessary forest cover is the minimum requirement for the entire Philippines. The objective is to make it more rather than less. In other countries like Canada and Japan, the percentage of the necessary balance for forest cover is over 50%. The latest report shows, however, that Japan is already 60% compared to 42% in the Philippines as necessary balance of forest cover.

VI. CONCLUSIONS, REMARKS, AND RECOMMENDATIONS

(a) *Conclusions.*—As of June 30, 1954, of the 29,740,972 hectares area of the Philippines 10,632,500 hectares, or 35.75% has been classified alienable and disposable lands; 2,043,761 hectares, or 6.87% as timberland; leaving a balance of 17,064,711 hectares, or 57.38% unclassified. It should be noted in this connection, that barely 7% has so far been classified as permanent forest areas, while more than 50% to be exact about 57% is still unclassified. These figures are broken down into 52 provinces and cities including 12 sub-provinces.

That our forest resources have been destroyed to a level resulting in lower than the safe minimum requirements, and that many provinces suffered, especially during the Japanese occupation. This includes established

forest reserves proclaimed national parks, communal forests and communal pastures which are already classified as permanent forest areas.

That immediately after the war, and up to the present, our lumbermen and other forest users have been asking the question as where to cut and operate after their present licensed areas have been already operated. In other words, our formerly inexhaustible forest resources are no longer there. As a matter of fact, the history of forest and forestry is characterized for the last 50 years, by the reduction of our forest cover from 70 to 50%. In area, this is equivalent to 20.8 to 16.5 million hectares, respectively, and that they are no longer ideally distributed throughout the Philippines as they should.

(b) *Remarks.*—As can be gleaned from the foregoing facts and figures, it is very clear that something should be done. This is described by former Department Secretary Araneta, as published in newspapers that our forest resources are no longer inexhaustible. *“If we are farsighted, if we understand the problem fully in all its gravity, and implications, we must act boldly and fast to change the course of events in the administration, protection and conservation of our forests.*

The problem must be tackled from the two angles of conservation and reforestation.”

Thus, it is believed that the holding of the First National Conservation and Reforestation Conference this year, is very timely. And as already mentioned *something must be done* to change the course of events in the administration, protection, and conservation of our forest resources.

(c) *Recommendations.*—

(1) That the permanent forest areas as necessary forest cover (42%) should be determined as soon as possible. Bearing in mind that barely 7% only has been so far, demarcated as timberland.

(2) Likewise, in order to provide land for the landless, more alienable and disposable lands should be classified and certified because at present, of the 56% earmarked for agricultural lands, barely 36% has been classified.

(3) Our 33 national parks throughout the country set aside including forest reserves, should be *re-examined* because during the Japanese occupation many of them were practically cleared and/or squatted and even exploited by sawmill operators and illegal cutters.

(4) The necessary balance both soil and forest cover of the Philippines is as follows:

Vegetative Cover		
	Area in Hectares	Percent
Under Bureau of Forestry (Forests & Forest Lands)	(12,515,200)	(42.08)
Production Forest	6,935,200	23.32
Production-Upland	3,976,400	13.37
Reforestation	1,390,600	4.68
Forest Grazing	955,500	3.21
Lowland	612,700	2.06
Fresh Water (Marsh)	(169,300)	(.57)
Salty (Mangrove)	(443,400)	(1.49)
Protection Forest	5,580,000	18.76
From Commercial	4,775,800	16.06
From Non-Commercial	804,200	2.70
Under Bureau of Lands (Non-Forest Lands)	(17,225,772)	(57.92)
Cultivate-Alienated	8,180,072	27.50
Potential-Unclassified	9,045,700	30.42
From Commercial	3,559,500	11.97
From Non-Commercial	2,759,000	9.28
From Cogonal	2,727,200	9.17
Grand Total	(29,740,972)	(100.00)

Because of the disturbances of our forest resources, the bringing up-to-date of the actual SOIL COVER of the Philippines including **Forest Cover** is strongly recommended before revising the blueprinted NECESSARY BALANCE OF FOREST COVER as presented in this paper.

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Manila

The Area in Hectares of Each Province in the Philippines With Its Actual Necessary Balance of Forest Cover for the Purpose of Utilization and Protection
(Computed as of June 30, 1953)

Province	(Actual Necessary Production Forest Area)		Balance of Forest Protection Forest Area		Cover) Area Percent Total		Area Total Land
	Area	Percent	Area	Percent	Area	Percent	
Abra	84,900	22.29	68,400	17.95	153,300	40.24	380,989
Agusan & Butuan City	205,400	19.25	463,600	43.44	669,000	62.69	1,067,102
Albay & Legaspi City	43,200	16.75	12,600	4.89	55,800	21.64	257,905
Antique	92,300	34.32	43,600	16.21	135,900	50.53	268,927
Bataan	63,800	47.65	25,300	18.89	89,100	66.54	133,900
Batanes	8,000	40.44	1,600	8.09	9,600	48.53	19,780
Batangas & Lipa City	42,400	13.74	17,800	5.77	60,200	19.51	308,587
Bohol	128,200	31.43	15,600	3.82	143,800	35.25	407,837
Bukidnon	236,100	29.37	154,500	19.22	390,600	48.58	803,840
Bulacan	52,100	19.70	74,300	28.09	126,400	47.79	264,439
Cagayan	199,700	22.21	239,500	26.65	439,200	48.86	898,813
Camarines Norte	34,500	16.07	51,100	23.81	85,600	39.88	214,663
Cam. Sur & Naga City	75,300	14.11	58,300	10.93	133,600	25.04	533,605
Capiz & Roxas City	100,100	22.69	65,600	14.88	165,700	37.57	441,011
Catanduanes	8,100	5.64	32,900	23.01	41,000	28.65	143,084
Cavite & cities of Cavite & Tagaytay	16,200	12.57	7,100	5.51	23,300	18.08	128,858
Cebu & Cebu City	106,700	21.91	38,200	7.85	144,900	29.76	486,850
Cotabato	405,800	17.67	553,700	24.11	959,500	41.78	2,296,791
Davao & Davao City	489,800	25.12	311,400	15.97	801,200	41.09	1,949,895
Ilocos Norte	91,800	29.35	61,700	18.22	153,500	45.32	338,679
Ilocos Sur	102,300	38.10	18,100	6.74	120,400	44.84	268,535
Iloilo & Iloilo City	80,500	15.18	43,500	8.20	124,000	23.38	530,449
Isabela	256,400	24.33	250,700	23.78	507,100	48.11	1,053,986
La Union	28,400	20.68	5,300	3.87	33,700	24.55	137,290
Laguna & San Pablo City	22,500	18.69	15,600	12.96	38,100	31.65	120,375
Lanao & cities of Dansalan & Iligan	146,700	21.37	200,500	30.70	347,200	52.07	666,809
Leyte & cities of Ormoc & Tacloban	126,500	15.85	109,000	13.64	235,500	29.49	798,690
Marinduque	13,000	14.12	7,600	8.26	20,600	22.38	92,027
Masbate	143,200	35.18	27,200	6.69	170,400	41.87	407,001
Mindoro Occ.	164,800	30.66	105,200	19.57	270,000	50.23	537,550
Mindoro Or.	144,200	30.67	92,000	19.56	236,200	50.23	470,243
Misamis Occ. & Ozamis City	43,500	20.96	35,400	17.04	78,900	38.00	207,651
Misamis Or. & Cagayan de Oro City	92,100	23.52	97,700	24.94	189,800	48.46	391,681
Mt. Prov. & Baguio City	426,300	30.15	292,700	20.71	719,000	50.86	1,413,622
Neg. Occidental & Bacolod City	178,200	23.02	136,400	17.62	314,600	40.64	774,064

Negros Oriental & Dumaguete City	153,600	28.89	70,400	13.24	224,000	42.13	531,640
Nueva Ecija & Cabanatuan City	100,000	18.21	76,800	13.98	176,800	42.19	549,168
Nueva Vizcaya	193,800	28.48	176,000	25.87	369,800	54.35	680,393
Palawan	262,600	17.81	359,700	24.39	622,300	42.20	1,474,576
Pampanga	73,800	34.46	9,400	4.38	83,200	38.84	214,193
Pangasinan & Dagupan City	65,100	12.43	38,800	7.42	103,900	19.35	523,383
Quezon	286,900	24.00	276,100	23.09	563,000	47.09	1,195,658
Rizal & cities of Manila, Pasay & Quezon	26,900	12.90	39,200	18.79	66,100	31.69	208,575
Romblon	33,500	25.24	19,400	14.62	52,900	39.86	132,704
Samar & Calbayog City	236,500	17.19	177,700	12.93	414,200	30.12	1,375,098
Sorsogon	18,000	8.77	19,900	9.68	37,900	18.45	205,450
Sulu	86,500	30.75	32,700	11.62	119,200	42.37	281,321
Surigao	235,500	29.52	120,900	15.16	356,400	44.68	797,583
Tarlac	104,200	34.25	20,700	6.80	124,900	41.05	304,232
Zambales	158,900	43.59	73,600	20.19	232,500	63.78	364,558
Zamboanga del Norte & Zambo. City	228,000	26.45	171,100	19.84	399,100	46.29	862,167
Zamboanga del Sur & Basilan City	218,400	26.45	163,900	19.85	382,300	46.30	825,750
TOTAL	6,935,200	23.32	5,580,000	18.76	12,515,200	42.08	29,740,972

Note that the 42.08% for the whole Philippines is grouped into Production (23.32%), and Protection (18.76%) forests. The former is divided into Upland, Reforestation, Forest Grazing and Lowland Forest. The last covers Marsh and Mangrove areas.

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The percentages by provinces under two groups (A-Above 42%) and (B-Below 42%). They are listed from the highest (67%-Bataan) to the lowest (18%-Cavite).

A. Above 42%

1. Bataan	67
2. Zambales	66
3. Agusan	63
4. Nueva Vizcaya	54
5. Lanao	52
6. Mt. Province	51
7. Antique	51
8. Mindoro Oriental	50
9. Mindoro Occidental	50
10. Cagayan	49

11. Bukidnon	49
12. Batanes	49
13. Misamis Oriental	48
14. Isabela	48
15. Bulacan	48
16. Quezon	47
17. Zamboanga del Sur	46
18. Zamboanga del Norte	46
19. Ilocos Norte	45
20. Ilocos Sur	45
21. Surigao	45
22. Sulu	42
23. Palawan	42
24. Negros Oriental	42
25. Masbate	42
26. Cotabato	42

B. Below 42%

1. Davao	41
2. Tarlac	41
3. Negros Occidental	41
4. Abra	40

5. Camarines Norte	40
6. Romblon	40
7. Pampanga	39
8. Misamis Occidental	38
9. Capiz	38
10. Bohol	35
11. Nueva Ecija	32
12. Rizal	32
13. Laguna	32
14. Samar	30
15. Cebu	30
16. Leyte	29
17. Catanduanes	29
18. Camarines Sur	25
19. La Union	25
20. Iloilo	23
21. Marinduque	22
22. Albay	22
23. Batangas	20
24. Pangasinan	19
25. Sorsogon	18
26. Cavite	18

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