

2.10 Forest-Based Industries and Forest Products Utilization Sector

2.10.1 Importance to the country (economic, environment, etc.)

The Master Plan for Forestry Development (MPFD) indicated that for almost two decades prior to its formulation, agriculture, logging, mining, and fisheries together contributed annually almost P15 billion to the country's gross value added. This was almost doubled in 1988 (P25 billion). The share of logging was 12.5% in 1970 but dramatically plummeted to only 2.3% in 1988 (MPFD,1990).

Table 2.22 shows the gross national product (GNP) and gross value added (GVA) in forestry as well as the share of forestry to the GNP both at constant and current prices. The GVA and percentage share of forestry in the GNP has been declining since the 70's. The percentage share of forestry in GNP dropped from 2.48% in 1975 to 0.83% in 1990 and further dropped to only 0.10% in 2000 (PFS,2000). This indicates the decreasing importance of forestry as an economic sector in the country.

In 1980 three processed wood products were among the top ten principal exports of the country, namely lumber (US\$175 million) which occupied the sixth position followed by plywood (US\$110 million) at eighth and logs (US\$87) at tenth. Together (US\$372 million) they occupied the fifth position following semiconductor devices (US\$492 million) (PFS,1980). In 1990 forest products were no longer in the top ten exports. In 2001, among the forest based export products furniture was number one with an export value of US\$209.95 million, lumber occupied sixth position (US\$15.96 million), while plywood and other veneered panels was eighth (US\$3.16 million), (PFS 2001).

Table 2.22. Gross national product (GNP) and gross value added (GVA) in forestry (mil. pesos).

Year	At Constant Prices			At Current Prices		
	GNP	GVA in forestry	%Share to GNP	GNP	GVA in forestry	%Share to GNP
2001	1,051,157	913	0.09	3,853,301	2,323	0.06
2000	1,016,131	1,372	0.14	3,496,863	3,383	0.10
1999	968,334	1,704	0.18	3,136,168	4,056	0.13
1998	931,127	897	0.10	2,794,068	2,215	0.08
1995	825,164	1,527	0.19	1,958,932	2,746	0.14
1990	720,058	7,320	1.02	1,075,056	8,907	0.83
1985	87,867	706	0.80	597,743	10,865	1.82
1980	92,532	1,386	1.50	264,532	6,743	2.55
1975	68,280	1,265	1.85	114,438	2,833	2.48

Source: Philippine Forestry Statistics, FMB, DENR, 1998

The estimated forest charges from 1990 onwards to 2001 are shown in Table 2.23. The amount of forest charges in 1991 (P806.15 million) was almost double that of 1990 (P460.55 million). However, the forest charges started to decline from 1996 (P288.07 million) to 2001 when the forest charges were estimated to be P164.30 million. This reflects the continuing reduction in the volume of logs harvested from the natural forest which was recorded to be only 0.160 million cu m in 2001.

Table 2.23. Estimated forest charges on logs harvested ('000 pesos)

Year	Charges
1990	460,550
1991	806,154
1992	466,688
1993	497,385
1994	544,564
1995	574,500
1996	288,069
1997	189,659
1998	190,760
1999	165,200
2000	135,100
2001	164,301

Source: Philippine Forestry Statistics

2.10.2 Profile of the Forest-based Industries

2.10.2.1 Number of license agreements and area covered

In 1990 more than 4 million hectares of forestlands were under agreements of various kinds with the private sector. Close to 3.7 million ha were under TLAs, while IFMA/ITPLA had 0.30 million ha, 0.11 million ha were under agro-forestry farms, and 0.013 million ha under tree farms (Table 2.24). In that year there were 97 TLAs, 81 IFMA/ITPLA holders, 101 tree farms and 94 agro-forestry farms. Since then, there was erosion of the number of TLAs and a corresponding decrease of forestlands covered by them. In 1995 there were only 41 TLAs covering 1.6 million ha. This further decreased to 19 in 2000 (and remained the same in 2001) with an area of only 0.91 million ha. On the contrary, there was a tremendous increase in the number of IFMA/ITPLA holders, 248 covering 0.538 million ha. Although the number of IFMA/ITPLAs decreased in 2000 to only 184, the area covered slightly increased. In 1995 to 2000, the number of tree farms increased with a slight increase in area. Since 1990, the number of license agreements has been slowly decreasing and area covered by all licenses decreased by 63%.

Table 2.24. Industry profile (license agreements).

Types of Agreements	1990		1995		2000	
	Number	Area (000 ha)	Number	Area (000 ha)	Number	Area (000 ha)
TLA	97	3,762	41	1,600	19	910
IFMA/ITPLA	81	304	248	538	184	548
Tree Farm	101	13	128	18	155	19
Agro-forestry Farm	94	110	84	97	80	91
Total		4,189		2,253		1,568

Source: Philippine Forestry Statistics, 1990, 1995, & 2000

These changes are reflective of the policy to terminate TLA as a mode of managing forestlands and resources to IFMA in consonance to the provisions of the Constitution that allow only co-production, joint venture, and production sharing agreement. IFMA is a production sharing agreement.

2.10.2.2 Number and Annual Log Requirements of Processing mills

Table 2.25 shows the number and annual log requirements (ALR) of various wood processing mills over a 10-year period. The number of processing mills decreased over this period except veneer mills, which increased from 15 in 1990 to 19 in 2000 with an increase of about twice the ALR recorded in 1990.

Table 2.25. Industry profile (processing mills).

Mills	1990		1995		2000		2001	
	No.	ALR ¹	No.	ALR	No.	ALR	No.	ALR
Regular Sawmills								
Active	152	2.446	78	1.523	45	0.742	44	0.777
Inactive ²	NA	NA	23	0.364	41	0.624	43	0.592
Mini-sawmills	174	0.596	52	0.164	70	0.808	124	0.397
Veneer mills	15	0.315	6	0.081	19	0.557	19	0.559
Plywood mills	45	4.528	31	2.089	27	1.224	30	1.242
Total ALR		7.885		4.230		3.955		3.567

¹ Annual log requirement in million cu m

² Total regular sawmills less active regular sawmills

Source: Philippine Forestry Statistics, 1990, 1995, & 2000

Active regular sawmills decreased in number from 152 with ALR of about 2.446 million cu m in 1990 to only 45 in 2000 and 44 in 2001 with ALR of 0.742 million cu m in 2000 and 0.777 million cu m in 2001. Mini-sawmills likewise decreased from 174 (ALR of 0.596 million cu m) to only 70 (ALR of 0.808 million cu m) in 2000. However, the number increased to 124 in 2001 but decreased in ALR to only 0.397 million cu m.

Plywood mills decreased from 45 in 1990 with ALR of 4.528 million cu m to 27 in 2000 with a ALR of 1.224 million cu m. The number of plywood plants increased in 2001 with a slight increase in ALR to 1.242 million cu m. On the other hand, veneer mills increased from 15 (ALR of 0.315 million cu m) in 1990 to 19 with ALR of 0.559 million cu m in 2001.

2.10.2.3 Production, exports and imports of major wood products

Log production in 1990, 1995 and 2000 is shown in Table 2.26. Over the 10-year period covered log production decreased from 2.503 million cu m to only 0.80 million cu m or a reduction of 68%. Since the contribution of logs coming from forest plantations was not segregated from the production in 1990, the percentage contribution of plantations in the total log production cannot be determined. However, log production from natural forests in 2000 was 0.23 million cu m compared to 0.57 million cu m from plantations (71%). The main reason for the decreasing volume of log production from the natural forests is the decreasing commercial forest area. In addition, in 1991 a ban in harvesting from natural forests was imposed (DAO 24, 1991). Concomitantly, the area of harvestable plantations is increasing accounting for the higher volume of plantation grown logs.

Table 2.27 shows the production, exports and imports of major wood products in 1990, 1995 and 2000. Production of lumber and plywood has been decreasing since 1990. The reduction in production from 1990 to 2000 for lumber was significant, more than 82% while the reduction in plywood production was almost 30%. Blockboard increased in production by almost 55%. There were no data on the production of particleboard and fiberboard during the period.

The export of lumber during the 10 year period has been increasing from 0.077 million cu m in 1990 to 0.120 million cu m in 2000. This is due to the increasing lumber production of plantation grown species whose export is encouraged by government. The export of plywood has likewise been decreasing from 0.176 million cu m in 1990 to less than a thousand cu m in 1995 and only 2,000 cu m in 2000 or a

Table 2.26. Projected and actual production of forest products

Products	1990			1995			2000		
	Projection	Actual	%	Projection	Actual	%	Projection	Actual	%
Log production ¹									
Natural forest	3,680,000	2,503,000 ⁴	68	4,380,000	800,000 ⁴	18	4,930,000	228,721	4
Plantations	1,890,000			2,290,000			6,630,000	571,365	9
Total	5,570,000	2,503,000	45	6,670,000	800,000	12	11,560,000	800,086	7
Lumber	953,000	841,000	88	1,604,000	286,000	18	2,775,000	150,651	5
Veneer		49,000			19,000			178,082	
Plywood	547,000	397,000	73	557,000	290,000	52	587,000	286,314	49
Rattan poles ²		19,266			17,457			32,336	
Bamboo ³		984			307			2,337	

1 cubic meter 2 thousand lineal meters 3 thousand pieces 4 for both natural and plantation grown round wood Source: Philippine Forestry Statistics

Table 2.27. MPFD-projected demand, actual production, exports and imports of wood products

Products	1990				1995				2000			
	Proj. Prodn	Actual Prodn	Exp.	Imp.	Proj. Prodn	Actual Prodn	Exp.	Imp.	Proj. Prodn	Actual Prodn	Exp.	Imp.
Lumber (mil cum)	0.884	0.841	0.077	0.004	1.404	0.286	0.084	0.378	2.540	0.150	0.120	0.358
Plywood (mil cum)	0.547	0.397	0.176	0.003	0.557	0.290	(a)	0.002	0.686	0.286	0.002	0.001
Veneer (mil cum)	-	0.049	0.047	(a)	-	0.019	0.032	0.025	-	0.178	0.005	0.229
Blockboard (mil cum)	NA	0.017	NA	NA	0.056	NA	NA	NA	0.099	0.040	NA	NA
Particleboard (mil. Cum)	0.007	NA	NA	NA	0.025	NA	4.0	29.0 ¹	0.040	NA	0.189 ¹	2.55 ¹
Fiberboard (mil kg)	49.0	NA	NA	NA	70.0	NA	NA	45.0 ¹	92.0	NA	NA	53.0 ¹

1 Million kg

(a) Less than one thousand

Source: Master Plan for Forestry Development, and Philippine Forestry Statistics 1990, 1995, & 2000

decrease of 98%. For particleboard, the country imported 29 million kg in 1995, however, this decreased to only 2.55 million kg in 2000. The import of fiberboard in 1995 was 45 million kg, which increased to 53 million kg in 2000. The increases in import of building materials can only be explained by increased construction during the period. This is supported by an increase in apparent consumption of lumber from 1995 to 2000.

2.10.2.4 Value of exported and imported wood products

While the production and export of logs and processed wood products are on the decline the imports of these commodities are increasing steadily over the last 12 years. The increase in log imports started in earnest in 1990 and has fluctuated from 300,000 to 900,000 cu m a year valued from US\$41.4 to

127.4 million (Table 2.27). No significant imports of lumber were made before 1990. From an initial import 4,000 cu m in 1990, it has steadily increased with a high of more than 550,000 cu m in 1996 valued at UD\$161.97 million. The values of exported and imported logs from 1990 to 2001 are shown in Table 2.28.

In 1990, the Philippines exported more lumber than it imported. However, from 1995 onwards the country has been a net importer of lumber and the difference between the values of imports to exports ranged from USD 59.35 million (2000) to USD 138.78 million (1996). The reported imports of lumber in 2001 were 371,000 cu m valued at US\$86.27 million. Likewise, import of veneer has climbed from an insignificant volume in the early 1990's to more than 100,000 cu m in 2001 valued at US\$26.37 million. The imports of plywood exceeded those of exports from 1996 to 2001 except in 2000. The Philippines has become a net importer of wood and wood products.

Table 2.28. Value of exports and imports of logs and major wood products (million USD).

Products		1990	1995	1996	1997
Logs	Export	2.856	-	-	0.26
	Import	41.408	82.036	127.412	117.821
	Difference	-38.552	-82.036	-127.412	-117.551
Lumber	Export	19.424	14.661	23.196	21.852
	Import	2.392	82.225	161.972	112.639
	Difference	17.032	-67.564	-138.776	-90.787
Veneer	Export	13.08	13.487	12.856	14.385
	Import	0.105	8.057	26.424	27.569
	Difference	12.975	5.43	-13.568	-13.184
Plywood	Export	60.22	0.101	0.078	0.017
	Import	1.814	0.128	0.673	0.651
	Difference	58.406	-0.027	-0.595	-0.461

Table 2.28 . . . Continued.

Products		1998	1999	2000	2001
Logs	Export	-	0.004	0.016	0.156
	Import	54.874	69.45	54.34	44.707
	Difference	-54.874	-69.446	-54.324	-44.551
Lumber	Export	5.543	8.738	20.457	15.958
	Import	71.188	116.772	79.81	86.271
	Difference	-65.645	-108.035	-59.353	-70.313
Veneer	Export	11.748	2.89	2.926	1.547
	Import	16.586	40.248	31.521	26.37
	Difference	-4.838	-37.358	-28.559	-24.823
Plywood	Export	0.343	0.343	2.056	0.2
	Import	0.552	0.552	0.639	0.201
	Difference	-0.571	-0.209	1.417	-0.001

Source. Philippine Forestry Statistics, 2001.

2.10.2.5 Production and export of non-timber forest products

Table 2.29 shows the production and export of selected non-timber forest products (NTFP). These include the major NTFP such as bamboo, split and unsplit rattan, almaciga resin and elimi gum. Bamboo has extensive uses, such as for construction, furniture and handicraft manufacture. The production of this product from the natural forest has been consistent but a slight decreasing trend could be discerned. Similarly, the export volume dipped during the late 90's but seem to be picking up again.

For rattan poles, production trend has been more or less constant despite the reduced potential areas for harvesting. The perception is that very little poles are coming out of the forest (Padiernos, 2003, Tesoro pers. comm.). While export of rattan poles has been banned since 1988 there were records of exports but these were insignificant.

Almaciga and elimi are exudates, from *Agathis philippinensis* and *Cannarium ovatum*, respectively, that have found international markets. The former is for the manufacture of paints and varnishes while the latter is valued for its essence in the manufacture of perfumes and similar products. In the case of elimi, there is practically no production data, however, there is a high amount of export during the last 15 years (Table 2.29). It is possible that the information has not been easy to capture.

2.10.3 The Furniture Industry

The furniture industry is one of the fastest growing industries of the country today. It had an export growth of 8 to 14% from 1995 to 1999. The total value of export furniture in 2000 was **US\$ 381.37** million (Table 2.30). The United States accounted for **US\$ 225.4** million (59%) of the value of exported furniture while the combined value of exports to European Union was only **US\$ 52 million**. While the value of exports to the US looks impressive it accounted only 1% of US furniture exports (Forest Industries Assessment , 2001). The export performance of the industry of **US\$ 381.37** million looks insignificant when compared to the total furniture export market which is estimated to be US\$ 52 billion, or a mere 0.73%. It also means, however, that the export market presents barely-tapped opportunities for the local furniture industry.

Compared to the other ASEAN countries, the Philippines ranks fourth in 1999 after Malaysia (US\$1.3 B), Indonesia (US\$1.2 B) and Thailand (US\$0.85 B). China exported close to US\$ 3.7 in the same year. The share of the wood, rattan and bamboo furniture in the export value of Philippine exports for 2000 is shown in Table 2.30.

The domestic market of furniture is difficult to assess because of the absence of records of sales unlike the export furniture, which is recorded in the Bureau of Customs. It is estimated that the domestic market for furniture and home furnishings is about PHP19 billion a year (Forest Industry Assessment, 2001). At the current exchange rate to the dollar, this would be about US\$ 380 million or equivalent to the export value of furniture, thus the local market also presents good opportunities for expansion of the furniture industry.

Table 2.29. Production and export of selected non-timber forest products.

Year	Bamboo ¹			Rattan Split ²			Rattan Unsplit ³		
	Prod	Export	Value ⁴	Prod	Export	Value	Prod	Export	Value
2001	537	30	36	25			8,767	17	18
2000	2,337	19	39	97			32,336	-	-
1999	984	4	6	48			15,552	-	-
1998	448	12	27	5			10,463	(a)	3
1997	163	6	14	2			19,519	1	2
1996	627	19	43	17			24,613	1	4
1995	307	9	22	24			17,457	1	4
1994	360	39	26	4			19,088	1	2
1993	475	10	6	1			24,845	11	(a)
1992	704	15	20	30			22,693	(a)	1
1991	892	23	49	568			25,732	(a)	1
1990	984	16	15	10			19,266	(a)	(a)
1985	644	17	37	72			19,437	(a)	10
1980	327	(a)	1	348			12,758	(a)	(a)
1974-75	226	-	-	165			8,230	1,850	999
1970-71	201	-	-	310			7,847	-	-

1 Number of pieces, thousand 2 Kilograms, thousand 3 Lineal meters, thousand 4 Thousand US\$

Source: Philippine Forestry Statistics.

Table 2.29 . Continued.

Year	Almaciga resin ²			Elemi gum ²		
	Prod	Export	Value	Prod	Export	Value
2001	520	204	161	-	246	528
2000	518	319	242	-	377	696
1999	298	336	247	-	245	464
1998	261	355	254	-	221	448
1997	310	381	303	-	162	436
1996	890	326	258	13	353	947
1995	1,059	328	252	-	259	621
1994	1,231	387	249	-	269	464
1993	576	382	243	-	330	686
1992	634	273	164	-	176	295
1991	780	363	242	8	146	251
1990	943	288	211	-	611	1,064
1985	380	600	296	-	154	104
1980	506	683	377	-	212	133
1974-75	546	884	332	-	90	36
1970-71	787	807	120	-	153	31

Table 2.30. Share wood, rattan and bamboo furniture in 2000 exports (US\$ million).

Raw Materials	Value	% Share
Wood	43.29	37
Rattan	118.02	31
Furniture parts	53.31	14
Metal	49.44	12
Stone	9.08	2
Bamboo	3.18	1
Other materials	2.16	1
Furnishings	1.71	1
Plastic	0.72	
Buri	0.46	
Total	381.37	

Source: TAPI. 2001. Furniture Industry Assessment.

The local furniture industry is estimated to be composed of about 15,000 manufacturers and sub-contractors with only about 400 to 500 as exporters. Six-five (65%) percent of these are micro and small enterprises, 25% are medium scale and about 10% are large manufacturing firms. The current centers of the industry are Metro Cebu, Metro Manila and Pampanga but Mindanao especially Davao, Cagayan de Oro and Butuan are emerging as another center of furniture manufacture. The concerns of the furniture industry may be grouped into:

- Forest-based raw materials supply and sustainability
- Product design and development
- Manufacturing and sub-contracting, and
- Marketing and promotion

The barriers to raw materials supply and sustainability that have been identified include movement of raw materials, lack of familiarity in the use of plantation species, insufficient facilities for saw milling and drying of wood, lack of lumber grading system for plantation lumber, unavailable financing windows for investments in plantation establishment, high tariff on imported raw materials, and unstable supply abroad. In manufacturing and sub-contracting, among the identified issues include under-utilized capacities of manufacturers, lack of collaborative research on appropriate technologies, low labor productivity, lack of technical workers and middle managers and lack of confidence of owners and entrepreneurs to invest in the industry. The absence of a national industry promotions plan was scored as the main barrier in the marketing of Philippine furniture abroad.

2.10.4 The Handicraft Industry

The handicraft industry encompasses a diversified group of mostly micro enterprises producing an assortment of wares such as basketwork, shell craft articles, ceramics, metal wares, textiles, stone wares, wood crafts, hand made paper products, and others. Majority has a capitalization of less than PHP 1 million (PCHI, 2003) and less than 20 employees, most often the employees are family members, relatives and neighbors. Because of the diversity of their products and raw material base there are several industry associations within the sector such as the Ceramics Exporters Manufacturers Association (CREMA), the Federation of Handmade Paper Makers and Converters (FEHPA), the Christmas Decors Association of the Philippines (CAP), and the Philippine Chamber of Handicraft Industries (PCHI). However, these associations have realized that it is only by working together can their concerns be voiced and heard.

Collectively, their exports are impressive. From 1991 to 2000 their average annual export amounted to US\$ 759.23 million, more than double that of the furniture industry. Table 2.31 shows the export value of handicrafts products:

In 2002, basketwork had a share of 25.68% of the total export of the sector, followed by textiles (18.35%), ceramics (11.30%), metal wares (10.64%), and woodcraft (9.67%). Handmade paper products had a 0.08% share of the total export value of the sector. Most of the products use mix-media (combination of raw materials). Basket wares can be solely of bamboo, rattan or vines or combination of these materials or it could have a metal base. Woodcraft products are not solely made of wood but in combination of bamboo or rattan with wood as the predominant material. Because of the use of mix media it is difficult to classify handicraft by raw materials used.

Table 2.31. Export value of handicraft products¹

Year	Gifts, Toys & House wares	Fashion Accessories & Leather Goods	Total
2000	448.82	363.90	812.72
1999	454.31	321.08	775.39
1998	448.96	347.96	796.92
1997	473.86	339.67	813.53
1996	486.33	302.65	788.98
1995	491.14	353.75	844.89
1994	453.30	348.76	784.06
1993	402.04	311.12	713.16
1992	391.70	277.46	669.16
1991	336.96	256.48	593.44
Ave	436.94	322.28	759.23

¹ US\$ million Source: Assessment of the Handicraft Industry (Draft Report) SEARCA, April 2003.

Like most export products of the country the handicraft sector is beset with various problems, issues and concerns. It is facing steep competition from neighboring countries particularly China. To be more competitive in the local as well as in the international markets the industry must overcome its problems.

The Chamber of Handicraft Industries classified the industry's concerns under 4 categories:

- Raw material supply and sustainability
- Product design and development
- Production efficiency, and
- Marketing and promotions

The specific concerns of the industry under **raw material supply and sustainability** include:

- Raw material mapping
- Resource exchange trade fair with parallel conferences and seminars
- Raw materials logistics centers in key areas such as Quezon/Laguna, Bacolod/Ilo-ilo, Davao, Manila, and Bicol
- Training of material processors
- Industrially managed plantations of key indigenous materials
- Infrastructure on harvesting and transport of raw materials, and
- Financing for plantation development and for raw materials processing centers

For product design and development, the identified concerns are:

- Improved design infrastructure
- New product design using indigenous raw materials

For production efficiency, the relevant concerns are:

- Non-collateral based financing
- Manpower productivity training
- Establish complementation and networking among firms with similar products
- Improve managerial effectiveness

For marketing and promotions, the relevant concerns are:

- Address the issue of declining buyers
- Niche marketing
- Pursue lucrative domestic markets
- Diversify to non-traditional markets
- Develop a national industry promotions plan
- Conduct a country/industry imaging program

Among the issues and concerns of the handicrafts industry sector, those of material sustainability in so far as these raw materials are forest based can be addressed by the DENR with respect to producing these raw materials. Furthermore, the raw materials base of the industry even in the forestry sector are too varied and may not be of significant volume that it would be difficult for the DENR to address. Private enterprises can probably address some supply problems of the industry than government. Only the major raw materials such as wood, rattan and bamboo are further assessed in the report.

2.10.5 Assessment of the MPFD Programs on Forest Based Industries and Non-timber Forest Products

The MPFD identified two sub-programs within the forest-based industry sector and forest products utilization, namely, Wood Based Industries and Non-Wood Forest-Based Industries. Objectives and strategies were likewise identified for these two industry groups. For the purpose of this assessment, only a few significant strategies and the programs to pursue these strategies, which are felt to be crucial to industries' growth and development, were reviewed.

For Wood Based Industries:

- Provision of long-term tenure of industrial permits
- Financial assistance in investments and retooling
- Improvement of infrastructures (electricity, communication, transport, training opportunities)
- Provision of incentives (tax reforms and loans)
- Provide new technologies
- Develop/expand the use of plantation wood and lesser used species
- Establish community-based industries
- Develop product standards
- Establishment of a Forest Industries Board

For Non-wood Forest-based Industries:

- Sustainable management of existing resources

- Utilization of heretofore noncommercial species
- Plantation development
- Improved access to resources by local communities
- Establishment of a national program on resources development

2.10.5.1 Projected versus actual production of major wood products

A study of the projections of the MPFD with respect to production logs and of major wood products and the actual production of these products indicate the extent to which the programs and projects have been implemented.

2.10.5.1.1 Log production

Table 2.32 shows the projected volume of log production for 1990, 1995 and 2000. The projected combined log production from the natural forest and plantations in 1990 was 5.34 million cu m, 6.78 million cu m in 1995 and 11.56 million cu m in 2000. The actual production of logs was in fact much lower and instead of increasing it decreased in 1995 then slightly increased in 2000 but still way below the projected production. The reason for the slight increase was the increase in log production from forest plantations, which was more than double the production from the natural forest. However, the production of logs from plantations in 2000, which was 0.57 million cu m, was way below the projected plantation log production of 6.63 million cu m.

Table 2.33 shows the projected and actual plantation area developed by the private sector. There is a tremendous shortfall in the actual area planted and the area projected by the MPFD. The shortfall in the area planted is one of the reasons the actual production of logs and processed major forest products was much lower than the projected production of these products.

2.10.5.1.2 Lumber and plywood production

Table 2.34 shows the projected and actual production of major wood products. Lumber production was expected to increase over the 10-year period from 1990 to 2000 rising from 0.884 million cu m in 1990 to 2.54 million cu m in 2000. However, actual lumber production decreased from 0.841 million cu m in 1990 to 0.286 million cu m in 1995 and 0.150 million cum in 2000. The difference between projected and actual lumber production in 1990 was only 5% but this gap in production increased to 94% in 2000.

For plywood, actual production was much lower than projected in 1990, 1995 and 2000. The gap in plywood production was only 27% in 1990 but this increased to 51% in 2000. Even if the volume of imported lumber and plywood were added to the actual production of these products their individual totals would still be lower that the projected production.

The high projection of production of major wood products was also not supported by the actual log production, which in fact was decreasing from 1990 to 2000. There were no available production data for the other major wood products to make any analyses.

Table 2.32. Projected and actual log production (million cum)

Forest Type	1990				1995			
	Projected	Actual	Exports	Imports	Projected	Actual	Exports	Imports
Natural Forest	3.45	2.491	-	0.382	4.58	0.761	-	0.692
Plantation	1.89		0.05		2.2		-	
Total	5.34				6.78			

1 Aggregate production from natural forests and plantations

2 Not specified if from natural forests or plantations

(a) Less than one thousand

Source: Master Plan for Forestry Development, and Philippine Forestry Statistics 1990, 1995, & 2000

Table 2.32. Continued . . .

Forest Type	2000			
	Projected	Actual	Exports	Imports
Natural Forest	4.93	0.23	(a)	0.582
Plantation	6.63	0.57		
Total	11.56	0.8		

Table 2.33. Projected and actual plantation by the private sector ('000 hectares)

	1991-95		1996-2000		2001-2005	
	Projected	Actual ¹	Projected	Actual	Projected	Actual
FLMA	255		85		74	
IFP	104		140		100	
TLA/TPSA	131		-		-	
CBFMA	116		250		250	
AF	39		75		75	
Private lands	-		-		-	
TOTAL	645,000	173,502	550,000	70,187	499,000	49,202

1 Total plantation area developed by the private sector, cannot be disaggregated

2 For 2001 only

Source: MPFD and the Philippine Forestry Statistics, 2001

The MPFD assumed high volume of export of lumber, probably as a result of a high assumption of log production particularly from plantations resulting in a large discrepancy between projected and actual lumber production. It was projected that in 1995 the export of lumber would be around 0.375 million cu m and would increase to 1.323 million cu m in 2000 (Table 2.34). In actuality the export of lumber in 1995 was 0.084 million cu m and 0.120 million cu m in 2000.

For plywood, the projected export would remain constant at 0.250 million cu m from 1995 to 2000. In reality the export of plywood was from 0.176 million cu m in 1990 to less than a thousand cu m in 1995 and only about 2,000 cu m in 2000 (Table 2.34).

The apparent domestic consumption (ADC) of logs, lumber, veneer and plywood and the projected domestic demand (PDD) of lumber and plywood are shown in Table 2.36 ADC is the sum of the production and import volumes less the volume exported. The ADC for logs and lumber generally decreased from 1990 to 2001. The ADC of plywood increased up to 1996 then consistently decreased up to 2001. The ADC of veneer increased over this period by as much as 700 times.

In 1990 the PDD for lumber was slightly higher than the ADC but in 1995 and 2000 the PDD was much higher than the ADC. The PDD for plywood was projected to increase from 1990 by as much as 47%. There was no projection on the domestic demand for veneer. The high PDD for lumber and plywood was more likely based on projected improved/improving economy of the country, which would spur construction and therefore higher demand for construction materials. The high projection of production of major wood products was also not supported by the actual log production, which in fact was decreasing from 1990 to 2000 (Table 2.35).

2.10.5.1.3 Veneer production

There was no projected production for veneer. In fact the MPFD projected that the un-integrated veneer mills will have difficulty surviving in the future. To the contrary, the number of veneer mills increased from 15 in 1990 to 19 in 2000 and their ARL increased from 0.315 million cu m to 0.557 million cu m (Table 2.35). Concomitantly production increased from 0.049 million cu m in 1990 to 0.178 million cu m in 2000 (Table 2.35). The consumption of veneer is increasing because the volume of imported veneer increased from less than a thousand cu m in 1990 to 0.229 million cu m in 2000 on top of increased veneer production.

Table 2.34. MPFD-projected demand and export of products vs actual production

<u>Items</u>	1990					1995				
	Plant Capacity	Projected Domestic Demand	Projected Export	Actual Prodn	1%	Plant Capacity	Projected Domestic Demand	Projected Export	Actual Prodn	%
Lumber (000 cu m)	1,559	884		841	95	1,029	1,217	375	286	20
Plywood (000 cu m)	1,667	297		397	134	363	436	250	290	40
Blockboard (000 cu m)	114	-		17		56	99	NA	NA	
Particleboards (000 cu)	67	7		NA		25	40	NA	NA	
Fiberboard (tons)	177	49		NA		70	92	NA	NA	

1 Percentage of actual production to total of projected domestic demand and export.

Table 2.34. Continued. . .

<u>Items</u>	2000				
	Plant Capacity	Projected Domestic Demand	Projected Export	Actual Prodn	%
Lumber (000 cu m)	607	1,217	1,323	150	6
Plywood (000 cu m)	451	436	250	286	42
Blockboard (000 cu m)		99	NA	40	40
Particleboards (000 cu)		43	NA	NA	
Fiberboard (tons)		177	NA	NA	

Table 2.35. Production and export of processed wood products.

Year	Lumber ¹			Veneer ¹			Plywood ¹		
	Prod	Export	Value ⁴	Prod	Export	Value	Prod	Export	Value
2001	197	105	15.96	255	3	1.55	292	(a)	0.2
2000	150	120	20.46	178	5	2.96	286	2	2.06
1999	288	69	8.74	89	5	2.89	243	(a)	0.34
1998	222	41	5.54	59	32	11.75	246	(a)	0.08
1997	351	141	21.85	62	31	14.39	484	(a)	0.02
1996	313	145	23.2	82	26	12.86	508	(a)	0.08
1995	286	84	14.66	19	32	13.49	290	(a)	0.1
1994	407	37	6.12	39	30	11.89	258	4	2.1
1993	440	80	17.75	65	7	2.66	273	25	11.41
1992	647	56	14.54	803	22	7.53	3313	71	27.83
1991	726	58	16.63	54	33	9.46	321	112	41.76
1990	841	77	19.42	49	47	13.08	397	176	60.23
1985	1,062	512	91.15	77	69	11.65	350	241	51.79
1980	1,529	742	181.81	660	164	35.68	553	322	103.84
1974-75	2,274	458	195.57	207	135	12.31	466	249	32.57
1970-71	860	202	74.25	242	127	5.96	643	590	38.91

1 In thousand cu m 2 In thousand MT NA – Not available 3 Excluding data from ARMM (a) – Less than thousand cu m 4 – Million US \$

Year	Fiberboard ²			Particleboard ²			Blockboard ¹	
	Prod	Export	Value	Prod	Export	Value	Prod	Export
2001	51	0.03		NA	0.09		54	NA
2000	NA	NA		NA	0.12		40	NA
1999	NA	NA		NA			25	NA
1998	NA	NA		NA	0.32		35	NA
1997	NA	NA		41	2.28		27	NA
1996	NA			NA			28	NA
1995	NA			NA			NA	NA
1994	NA			NA			1222	NA
1993	NA			NA			42	NA
1992	NA			NA			52	NA
1991	NA			NA			62	NA
1990	NA			NA			172	NA
1985	NA			2			72	NA
1980	NA			NA			32	NA
1974-75	62			NA			112	NA
1970-71	NA			NA			NA	NA

Table 2.36. Apparent domestic consumption of logs and major wood products (million cum).

Products		1990	1995	1996	1997	1998	1999	2000	2001
Logs	Production	2.503	0.758	0.771	0.556	0.634	0.73	0.8	0.571
	Export	-	-	-	0.004	-	(a)	(a)	0.005
	Import	0.381	0.694	0.878	0.768	0.435	0.583	0.585	0.551
	ADC	2.884	1.452	1.649	1.32	1.069	1.313	1.385	1.122
Lumber	Production	0.841	0.286	0.313	0.351	0.222	0.288	0.15	0.197
	Export	0.077	0.084	0.145	0.141	0.041	0.069	0.12	0.105
	Import	0.004	0.378	0.567	0.412	0.296	0.381	0.359	0.371
	ADC	0.868	0.58	0.735	0.622	0.477	0.6	0.389	0.463
	PDD	0.884	1.029					1.217	
Veneer	Production	0.049	0.019	0.082	0.062	0.059	0.089	0.178	0.256
	Export	0.047	0.032	0.026	0.031	0.032	0.005	0.005	0.003
	Import	(a)	0.025	0.094	0.086	0.063	0.138	0.119	0.105
	ADC	0.002	0.012	0.15	0.117	0.08	0.222	0.294	0.358
Plywood	Production	0.397	0.29	0.508	0.484	0.246	0.243	0.286	0.292
	Export	0.176	(a)	(a)	(a)	(a)	(a)	0.002	(a)
	Import	0.003	0.002	0.001	0.001	0.002	0.001	0.001	(a)
	ADC	0.224	0.292	0.509	0.485	0.248	0.244	0.285	0.292
	PDD	0.297	0.363					0.436	

PDD = Projected domestic demand

ADC = Apparent domestic demand

Source: Philippine Forestry Statistics, 2001

2.10.6 Status of Wood-based Industries Programs and Projects

The DENR has implemented programs/projects as part of the strategies to attain the various objectives of MPFD Programs. This section reviews and assesses the programs/projects vis-à-vis the program strategies, determine the impacts of programs, identify issues affecting failure or success of programs and make necessary recommendations where appropriate.

2.10.6.1 Provision of Long Term Tenure of Industrial Permits

This strategy promotes favorable climate and business environment for the wood industry. The transition from TLA to any of the 3 methods of natural resources access allowed by the Constitution necessitates new instruments for resource access. The Department of Environment and Natural Resources (DENR) formulated the Industrial Forest Management Agreement (IFMA) as promulgated under DAO No. 99-53. It is a production sharing agreement where the natural resources located in the IFMA area are the share of government in the enterprise while the IFMA holder provides the resources for extraction and processing as its share.

IFMA provides for a maximum area of 40,000 hectares and has duration of 25 years renewable for another 25 years. The profit sharing between the holder and the government is negotiated and becomes part of the IFMA. Holders of TLAs were encouraged to convert operations to the IFMA. Of the 193 IFMAs at the end of 2002, only 5 were converted from TLAs. The total area occupied by IFMAs is about 683,213 hectares.

2.10.6.1.1 Issues and Concerns

While the policy is to convert TLAs to IFMA, the guidelines for conversion are not very clear. This is one reason only 5 TLAs have converted. Unless there are clear violations of forestry rules and regulations, there should be automatic conversion. Unless the expiring TLAs are speedily converted into IFMAs their areas become open access with high potential of incursion by upland population. Furthermore, the provisions of DAO 99-53 are often changed new administration resulting to confusion. DAO 2003-21 was issued amending certain provisions of DAO 99-53. The conditions under which conversion of TLAs to IFMAs is allowed are spelled out in the DAO.

The timber corridor has been generally identified. However, the exact location of production forests has yet to be identified. Some of the areas in the corridor have been claimed by as ancestral domain. Unless the production areas in the timber corridor are clearly defined investors will be hesitant in investing in plantation development. It is understood, however, that DENR is in the process of identifying these areas in some provinces in Mindanao.

Tenure is only one of many measures of security of players in the industry. The approval of the integrated operations plans (IAOP) on an annual basis hampers the operation of the industrial firms. Without an approved IAOP, a firm is not supposed to operate thereby incurring losses. If it operates it is in clear violation of government rules and regulations. It is a case of damned if they don't and damned if they do. It is recommended that the integrated operations plan is approved on a multi-year basis.

DENR requires an investor to secure a permit to establish a processing plant. Once the processing plant is established the investor is once again required to obtain a permit to operate. This policy onerous and what is needed is one permit that would roll into one the permits to establish and to operate processing mills. Furthermore, the permit to operate processing mills should also be on a multi-year basis.

2.10.6.1.2 Financial Assistance in Investments and Retooling

The production and processing equipment and infrastructure of the wood-based industries are old and some already obsolete. Furthermore, the sawmills and the veneer mills were designed to process large diameter logs. With the ban in logging in the old growth or virgin forests logs coming from the natural second

growth forests are much smaller in diameter. Although sawmills and veneer mills could still be used to process these logs they are no longer cost-efficient.

There has been a move in the industry to retool. In fact some of the veneer and plywood mills have acquired modern lathes that can process logs to veneer with smaller core logs. However, the industry had been largely unable to retool because of lack of affordable capital. Furthermore, at the time of transition from virgin to second growth forest, the people in the industry became hesitant to invest. Thus the pieces of equipment currently used by the industry for processing are old and inappropriate for the sizes of logs being processed.

There is a need to rationalize the industry. As of 2001 the total ALR of sawmills, veneer and plywood mills amounted to 3.567 million cu m. The total production of logs in 2001 was reported to be 0.571 million cu m. Of this, 0.319 million cu m were sawlogs and veneer logs while 0.241 million cu m were pulpwood. Log production was way below the ALR of the processing mills. This means that their capacities are not properly utilized and thus inefficient.

Among the issues and concerns about retooling is that wood based industry cannot expect to become competitive not only here in the local market but also abroad if it continues to use old and antiquated equipment that weighs down heavily on its efficiency. Government and the industry itself must find ways to access affordable capital for investments and for retooling. Furthermore, retooling should be given tax and other incentives as well as long-term financing. In the mean time the Philippine Wood Producers Association has petitioned DENR to issue a moratorium on the processing of applications for the establishment of new processing mills. DENR has issued Memorandum Circular (MC) No. 2003-14 declaring such a moratorium until rationalization of the industry has been made.

2.10.6.1.3 Improvement of Infrastructures

Infrastructures are herein defined to include electricity, transport system, and communication system. The presence of necessary infrastructures defines the ease and with which an enterprise, including the wood-based industry, operates in the country and the cost of operation. In 1992 to 1993 the country suffered 12-hour brown-outs which devastated the production system. This prompted the government to take extra ordinary measures to install power-generating systems from independent power generators. The power brownouts were solved however, the cost of electricity increased tremendously because in the contracts of the power produces and government, even unused power generated is paid for. This appears in the bills as power purchase adjustment (PPA). The PPA charge is often higher than the cost of electricity used by a consumer.

The crucial transport system in the wood based industry particularly in the domestic movement of raw materials and processed goods is shipping. The cost of shipping a 10 and 20 ft container in late 1990s was about P14,000 and P22,000, respectively, from Mindanao to Manila. This has almost doubled to about P23,000 and P42,000 (Sulpicio Lines, 2003, Tesoro's pers.comm.), respectively in 2003. This often makes products manufactured in the Philippines less competitive than imported products.

The communication system has greatly improved. In 1990 there was only one telephone system operating in the country with a reported 657,818 telephone lines (PSY, 1990). As of December 2000 there were 6.91 million telephone lines(PSY, 2001). At the same time, personal telecommunication technology (cell phone system) was fast developing making communication easier and less costly. In 1998 there were only 359 registered cellular mobile phones compared to 6.45 million registered in 2000 (PSY, 2001). It is claimed that today there are 15 million cell phones in use in the country. It has come to a point that it is possible to communicate from almost any place in the country.

In a sense the infrastructures needed to do business in the wood industry are present except in the case of shipping where the cost of shipment is still relatively high.

Issues and concerns - Shipping costs remains high in the country. Since the production sector of the wood based industry is located mainly in Mindanao the cost of transporting raw materials and products to and from Mindanao affect the final cost of the products. This has to be studied seriously by government.

2.10.6.1.4. Provision of Incentives

The veneer and plywood sectors of the wood-based industry have been de-listed by the Board of Investments (BOI) from the Investment Priorities Plan (IPP) (Angeles, L., 2003, *Tesoro's pers com*). Thus the veneer and plywood sectors can no longer enjoy tax incentives on importation of machineries. This has made it more difficult for these sectors to retool.

One measure to promote efficiency in the lumber industry is to allow the export of lumber. The ban on the export of lumber should be lifted and allow the export of lumber manufactured from imported logs. This is also to recover foreign exchange used in the importation of logs, generate employment and stabilize the lumber industry sector (Angeles, L., 2003, *Tesoro's pers com*).

Government must encourage the private sector especially small landholders to plant trees. It can provide incentives such as the non-payment of real estate taxes for 5 years. DENR is already working this out with the DILG and the LGUs (Gozun, E., 2003).

One of the impacts of world trade globalization is the reduction of tariff. The wood based industries have not been spared from the effects of reduced tariff. Furniture, plywood, veneer, lumber and other wood-based products face stiff competition from imported products. Government should slow down the reduction of tariff to allow the wood-based industries to become more efficient and productive and thus more competitive against imported products (Angeles, L., 2003, *Tesoro's pers com*).

Issues and Concerns - DENR should initiate discussions with relevant government agencies particularly the BOI to re-enlist veneer and plywood mills as industries that can enjoy benefits indicated in the Omnibus Incentives Act. This will allow the industry to retool and become more efficient and produce higher quality products.

DENR can also provide incentives to the lumber industry sector by allowing lumber producers to export lumber produced from imported logs.

Private land owners who plant trees should be provided some incentive such as the non-payment of real estate taxes for 5 years as enunciated by Secretary Guzon during her address to the PWPA on the occasion of the 52nd anniversary of the association on August 22, 2003.

Reduced tariff on imported wood products such as veneer, plywood, lumber and furniture make local products less competitive. Lower tariff should have the effect of making local industries more efficient and thus become competitive. However, lack of resources for retooling prevents local industries to become more efficient.

2.10.6.1.5 Provide New Technologies

The shift in the production areas from the virgin forests to the second growth forest resulted in the harvest of smaller diameter logs, the increased use of lesser-known/used species and the increased use of plantation grown species in applications where the common commercial species were utilized. This means that government should provide industry the processing technologies for these species.

In 1991-1994 the International Tropical Trade Organization (ITTO) provided grant funds to the Forest Products Research and Development Institute (FPRDI) to conduct research on the utilization of small-diameter logs including tree-tops and branches. The study generated technologies on the processing from sawmilling, drying and machining as well as identified suitable uses of these species. However, the results of this study have not been fully utilized by the wood-processing sector. The Paper Industries

Corporation of the Philippines (PICOP) adopted the saw-dry-rip technology for sawing tree-tops and branches. From the ITTO study two technology publications in CD form have been published by FPRDI, namely Field Guide to the Identification of Important Lesser Used Species of Philippine Timbers, and Manual on the Properties and Uses of Lesser Used Species of Philippine Timbers.

One drawback in the utilization of tree tops and branches is economic in nature. The cost of collecting and transporting these raw materials is higher compared to large diameter logs since the cost of collection and transport of these two types of materials is more or less the same.

In 1990 the Philippines had an estimated volume of 0.413 million cu m of lesser-used species (LUS) with 70 cm diameter and larger, 0.771 million cu m of diameter 60 cm and larger and about 1.183 million cu m of diameter 50 cm and larger (Bello, E. & A. Moistero, 1997). About 9.8% of the total volume of trees harvested in the natural forest is LUS. To promote the utilization of LUS the ITTO also funded in 1993 a 5-year project at the FPRDI on the "Utilization of Lesser-Used Species as Alternative Raw Materials for Forest-Based Industries".

The physical, strength and processing properties, such as sawmilling, drying, machining, finishing, natural durability and treatability with preservatives, of these species of 39 species were studied. Likewise, the end uses such as posts, sills, beams, joists, rafters, flooring, etc. were studied. Publications on the properties and uses of these LUS were prepared and disseminated. The use of LUS in the manufacture of parquet flooring, mill works, pallets, treatment of materials for poles and wood bending were piloted for more than two years with the private sector. It is not known whether any of the cooperators continue to use these species for the production of their products.

Despite extensive technology transfer and promotional activities only two electric cooperatives, one in Isabela and the other in Ilocos Norte adopted the use of LUS for poles treated with preservatives through the High Pressure Sap Displacement Method (HPSD) (Pabuayon, C. 2003, *Tesoro's pers com*). One furniture manufacturer in Pampanga adopted the wood bending technology but had to stop because of lack of raw materials. One of the barriers in the adoption of technologies in the utilization of LUS lies in the size of most of these species. **The harvest of trees from the natural forest allow only the cutting of trees not less 60 cm in diameter, except along rights-of-way, log landing, and skid trails.** Furthermore, the processing of LUS requires significant capital investment for retooling (Smith P., 2000), which is not readily available to wood processors.

Because the cost of collection and transport of LUS is higher than the commercial species their utilization should be in the manufacture of higher value added products such as mill works and furniture. However, since the supply of individual species is rather limited the utilization of these species should be one that allows grouping or clustering. Their use as construction materials allow grouping of species. Furthermore, the perception that they are inferior to commercial species has to be overcome before they become acceptable to lumber users. The use of machine stress-graded lumber where the lumber, is graded according to its inherent strength properties and not because it belongs to the popularly used species, could overcome the negative perception of LUS.

Machine stress grading of lumber is another ITTO project at the FPRDI. The technology has been piloted in two sawmills, one in Aurora and the other in Quezon City. Three lumber producers are now willing to adopt the technology and are just waiting for the standards for machine stress-graded lumber which is now being formulated by the Bureau of Product Standards before they acquire the machine. Two of the firms are in Cebu and the other in Mandaue City.

The government has been generating technologies for the wood-based industries. There are however, some barriers in the adoption of these technologies by the private sector. A mechanism is needed to liaison between the technology generators and the industry for the faster transfer and adoption of the technologies.

Issues and Concerns - The harvest of LUS is guided by rules and regulations that apply to the common commercial species particularly in diameter limit requirements. LUS by nature have small diameters and if the minimum cutting diameter of 60 cm is applied only a small volume of LUS can be harvested thus limiting its prospects for wider utilization and the prospects of augmenting very limited wood resources. It is suggested that government reviews this policy.

There are technologies on the utilization of LUS. However, these are not being adopted by the processing sector. Government must also review and strategize how the technologies can be effectively transferred to industry.

Government research organization should also consider breeding studies to improve the growth rate of LUS and similar species.

2.10.6.1.6 Establish Community-based Industries

Community-based Forest Management (CBFM) was established as the national strategy to ensure sustainable development of the nation's forests through EO No. 263 issued in July 1995. It is a strategy that recognizes the role of upland population in the conservation of the forest resources since they are the most immediate stakeholders of these resources. The Strategic Action Plan (SAP) 1997-2020 of DENR spells out the strategy for the implementation of the CBFM program. It contains a 7-point strategy and the activities to achieve expected outputs. The strategies are:

- Improve the policy environment for CBFM
- Institutional restructuring of the DENR Forest Services
- Issuance of a Joint DENR-DILG policy on devolution of forest management functions
- Capacity building for POs
- Developing a cadre of village foresters
- Redesign IEC strategy for wider coverage, and
- Provide adequate support system for CBFM

It can be argued that all the above strategies need to be implemented in order that the CBFM as a strategy would succeed. However, among the above strategies, 4 must be satisfied in order that viable community-based industries can be achieved, namely:

- Improve policy environment for CBFM
- Institutional restructuring of the Forest Service
- Capacity building for POs, and
- Provide adequate support system for CBFM.

2.10.6.1.7 Institutional Restructuring

In the matter of institutional restructuring of the Forest Service, the activities identified in the SAP are the creation of an appropriate forestry organizational structure for CBFM, and the reorientation of personnel who will be working with CBFM. DENR has created a functional unit at the FMB, the CBFM Division, whose mandate is to assist in the formulation of CBFM policies and to monitor the accomplishments of the CBFM program. Very recently, a CBFM Office has been created under the Undersecretary for Field Operations. Its basic function is to coordinate the effective implementation of the CBFM strategy and participate in the formulation of policies and plans relating to CBFM.

At the field level particularly at the CENRO a CBFM Unit has been formed. Its functions are to oversee the establishment of CBFM projects, assist the formation of the people's organization (PO), assist in the community organizing, assist the POs in area development, assist in the establishment of livelihood projects, and monitor and evaluate the CBFM projects.

Institutional restructuring does not only mean the establishment of organizational units but also mean providing the units with the means to implement activities to achieve program/project objectives. This means providing adequate number of properly trained personnel and the logistical support in terms of budget and mobility. In a survey of 7 CENROs in Region 2 in 2001, the results showed that personnel assigned to the CBFM Unit ranges from 2 to 11 with an average of 5. They manage an average of 5 CBFM projects covering an average area of about 5,000 ha. There are an average of 2 CBFM projects **without** a Project Management Officer (PMO). This means that the CBFM projects are not given the needed technical assistance from the DENR. Furthermore, most if not all of the personnel have forestry background and have no training in other fields required to provide a well- rounded assistance to the CBFM projects.

By way of budget, the average travel allowance of each personnel in the CBFM Units surveyed was P3,425. At an average of P100 per diem per field visit (regularly it would be P300/day), the travel allowance would support only 34 days of travel per year. With respect to supplies and materials, each personnel has an allocation of P2,311 for 2001. Furthermore, 5 of the 7 units surveyed did not have any vehicle at their disposal for field visits, the other 2 had a motor cycle each.

With the personnel complement of the 7 CBFM Units and the logistical support provided them it is hard to imagine that they can provide the assistance that the CBFM projects need for community organizing and area development. Depending upon the resources available in the communities and the type of livelihood projects or enterprises that can be established in the projects, the expertise of the personnel of the CBFM Units should be a composite for an extension team that include specialization in agriculture and animal science, forestry and agro-forestry, entrepreneurship, and cooperative development.

2.10.6.1.8 Capacity building

Capacity building empowering the communities to solve problems affecting them. It includes training on enterprise development including marketing of products. Training alone cannot guarantee successful enterprise development considering that the people comprising the upland communities have little opportunities for entrepreneurial activities and their way of life has been limited to just production of products to satisfy their daily needs. There is need to lead them by the hand, assist them in the identification of potential enterprises, access technologies from relevant organizations, access capital, and link them to markets. The POs should be trained on how to access resources through linking and networking. The structure and personnel of the CBFM Units should be geared to providing the assistance needed by the POs.

2.10.6.1.9 Adequate support system for CBFM

The Strategic Action Plan (SAP) for CBFM identified 4 activities under this strategy. Only the conduct of inventory of resources within the CBFM sites satisfies the requirement for community-based industry development. The support systems that the community needs to establish viable enterprises are already identified under Capacity Building.

2.10.6.1.10 Enterprise Development as an Approach to Community Development

“People first and sustainable forestry will follow” is the slogan of CBFMP. It is very apt and correct as the strategy for a successful implementation of the Program. The people in the uplands are there because they have no other place to go for a living. The first and foremost approach therefore of CBFMP is to provide the community with a viable and equitable source of livelihood compatible with forest conservation. **Enterprise development should be the cutting edge strategy of CBFMP.** Site development such plantation development will come when the source of livelihood of the community has been established.

There are myriads of opportunities for enterprise development in CBFM areas and it is not limited to forest based raw materials but can also be agriculture based. One community that has developed an

enterprise is the Sierra Madre Multi-purpose Cooperative in Batong Labang, Ilagan, Isabela. This community is producing essential oils from citronella and lemon grass and selling it to a soap manufacturer (also in Ilagan) producing herbal soap. One liter of the oil cost P1000. One liter of ilang-ilang oil cost P10,000. The community is producing 10-15 liters of lemon grass and 8-10 liters of citronella oil a month. The community has also developed a 20 ha ilang-ilang plantation that is not three years old.

Another enterprising community is the Federation of Vista Hills, Kalongkong and Kakilingan Upland Farmers, Inc. in Bayombong, Nueva Vizcaya is engaged in the production of handicrafts and has joined local and national trade fairs to promote their products. Such types of enterprises can be promoted in communities to widen their opportunities for income generation and reduce the pressure on the forest.

One limitation of upland communities in establishing enterprises is lack of capital, lack of expertise and lack of marketing skills. DENR can link these communities with existing government programs, financial institutions or with the private sector such as the Philippine Chamber of Commerce and Industry (PCCI) for assistance. The reason the enterprise of the Sierra Madre Multi-purpose Cooperative is that the members were provided with the appropriate technology, training in the use of the technology, and they were linked with a sure market capable of absorbing all of their produce.

2.10.6.1.11 Resource Use Permit

One attempt of government to support livelihood and enterprise development in the communities is the granting of resource use permits (RUP). The RUP allow the community to collect wind-blown and dead trees from the natural forest for processing and sale. However, POs have abused this privilege and as a result the processing of RUP applications and RUP permits have been suspended, first in 1998 and of late in 2002. The suspension has been applied to all CBFM communities including those without any violation thus in effect punishing them for the transgressions of other communities.

The corner stone program for sustainable forest development is the CBFMP. Concomitant to the restructuring of the organization that established functional units at the FMB and the CENRO, there should be provision of adequate personnel of appropriate expertise and adequate financial support to these units.

One of the priority issues that DENR should focus on is the establishment of livelihood projects and enterprises in the communities even before actual area development takes place. This is because the main concern of the population is livelihood. To them forest conservation and development are even anathema to their search for daily sustenance. Successful livelihood and enterprise development weans them away from the use of the forest as source of daily sustenance. DENR needs to link with other agencies, LGUs, the private sector and NGOs to access resources in support of upland communities establish enterprises.

The universal suspension of RUPs in all communities for the violation of a few has adversely affected the livelihood of law-abiding communities and the credibility of DENR. The policy of universal suspension should be reviewed in favor of suspending only those suspected of abusing their resource use permits. Those who are suspected of violation of their CBFMA should be investigated and if found guilty their CBFMA should be cancelled.

2.10.6.1.12 Develop Product Standards

International markets more and more require that products offered meet certain quality standards. For forest products, there are 14 standards that include that of plywood, sawn timber, and rattan. Very recently, the standard on children's high chair and that of kitchen equipment (cabinets and work tops) have been adopted. The specifications for school and residential furniture have been recently completed while the standards for foldaway beds are being deliberated upon.

Product standard preparation is the mandate of the Bureau of Product Standards (BPS) of the Department of Trade and Industry (DTI). Since BPS does not have the technical expertise on wood products it relies on the assistance of technical government agencies, the private sector and the academe. The

standards for stress-graded lumber is being prepared with the assistance of the Philippine Wood Producers Association, the Forest Products Research and Development Institute (FPRDI) of the Department of Science and Technology (DOST), and the UPLB College of Forestry and Natural Resources.

The growing world-wide emphasis on product standards as well as standards at the work place put pressure on the local manufacturers to produce products that meet these standards. It is important that local products can compete in the world market otherwise our exports of forest-based manufactured goods would further decrease.

Furniture made of wood, non-timber materials and from mixed media are the Philippines' fastest growing forest-based products in the international market. While the standards of furniture products are being developed towards International Standards Organization's standards, the standards of other countries are being used locally. While it is necessary to have product standards that are at par with foreign standards it is equally important there is an accredited testing institution to determine whether the products, especially for export, satisfy the standards. For forest products, the accredited testing laboratory is the FPRDI. It has the necessary testing facilities and competent technical personnel to perform the test for plywood and for furniture. It is currently working for its ISO accreditation for its furniture-testing laboratory, which it hopes to obtain before the end of the year.

There are product standards that are not mandatory. Therefore, manufacturers will subject their products to testing, to determine if they conform to standards, on their own volition. However, products that are exported and do not pass international standards reflect on the entire country and not only to a particular manufacturer. It is suggested that wood product standards be mandatory especially for export purposes. Since DTI does not have the needed personnel to monitor the compliance of manufacturers to the standards, the PWPA and other industry associations could be deputized to act in its behalf for monitoring purposes.

2.10.6.1.13 Establishment of a Forest Industries Board

The MPFD proposed the establishment of a Timber Industry Board (TIB) to oversee the development of the wood-based industries. The suggested functions of the Board are:

- Coordinate and promote overall development of the wood industries,
- Arrange financing opportunities and government incentives for investments,
- Provide technical advisory services to existing timber industries,
- Coordinate industrial use of raw materials and encourage utilization of timber with emphasis on product diversification and promote improvement and economy in the methods of processing,
- Coordinate and promote training for wood industries,
- Prescribe standards and methods for use of wood products,
- Provide information on wood products, such as prices, to the industry and government,
- Act as coordinator between government and industry on all development issues, and
- Recommend in coordination with concerned institutions on minimum standards for industrial safety and hygiene.

It appears, however, that government, the DENR in particular is not supporting the establishment of the TIB. This is manifested in the absence of any provision in the bill on "Sustainable Management of Forest Resources" submitted to Congress for enactment. The PWPA sees the need for a TIB that could represent the industry with government particularly in the promulgation of policies supportive to the industry. Some countries in Southeast Asia have industry boards such as the Timber Industry Board of Malaysia. Should there be a board established it should not limit its mandate to the development of the wood industry alone but it should be representing the interests of all forest-based industries including the non-timber forest products and the herbal and medicinal industries as well.

In March 2003 the DENR held consultative discussions with the forest-based industry sectors, e.g. PWPA, the Chamber of Furniture Industries of the Philippines (CFIP), the Philippine Chamber of Handicraft Industries (PCHI) and the Chamber of Herbal Industries of the Philippines, Inc. (CHIP), to address the various developmental concerns of these sectors. This culminated in a consultative workshop held on June 11-12, 2003. In the forefront of these discussions was the Forest Based Industry Advisory Committee (FBIAC), which was formed at the Forest Management Bureau. It was this Committee, which coordinated, liaison, documented, facilitated and organized the discussions. It also became the focal point in DENR for the monitoring and evaluation of the government's response to the issues and concerns of the industry sectors particularly in the formulation and issuances of policies needed to improve the business environment of the forest-based industries.

The need to establish a FBIAC only emphasizes the need for a body, such as the Timber Industry Board, that can address the needs of the forest-based industries with respect to linking industry to government and the private sector.

The forest-based industries need an organization that can assist them with their needs from government. It should be independent of DENR and the DTI so that it can be free to pursue its mandate of assisting the forest-based industries without undue pressure from the agency that supervises it. It should however have close link with the DENR and the DTI and other relevant government agencies.

2.10.7 Non-wood Forest Based Industries

The Philippines is rich in non-wood forest products. In fact these products form the basis of a number of competitive industries such as the rattan and bamboo furniture industries providing employment to a large sector of the labor force. Upland farmers obtain steady income from gathering of these forest products.

As indicated above, the MPFD formulated strategies to assure continued and sustainable supply of these raw materials, improve their harvesting and utilization and the establishment and development of micro/cottage industries. Hereunder is a review of the government's program on these strategies for the more important non-wood forest products.

2.10.7.1 Sustainable Management of Existing Resources

2.10.7.1.1 Rattan Resources

The management of rattan resources in the country is governed by DAO No. 4 promulgated in January 2, 1989, prior to the formulation of the MPFD. This has remained the policy on rattan resources. The AO prescribes where rattan can be harvested, who may qualify to obtain rattan-cutting permits, the procedures for award of the permit, the maximum area that can be granted to certain types of permittees, the privileges and obligations of the permittees, rattan processing and utilization and the establishment and development of rattan plantations. DAO 21 (Series of 1988) bans the export of rattan in its raw or semi-finished form and encourages the importation of rattan canes.

Surprisingly the reported production of rattan poles has remained high. In fact it is at the level of those in the 80's and higher than those reported in the 70's, except for 2001 where the level of reported production was about a quarter of the 2000 production. Caraga Region has consistently been the major source of rattan in the country of late (PFS, various years).

One of the major components of the DAO No. 4 is the establishment and development of rattan plantations. To ensure the supply of the raw materials, rattan cutting-permittees are required to plant rattan seedlings for every lineal meter of rattan pole cut. Before a permittee can operate he must submit for government's approval an annual cutting and replanting plan.

To pursue further the development of rattan plantations the government identified areas available for plantation development. The requirements, procedures for accessing these lands and those who may qualify to access them are presented in DAO No. 4.

There are no available data on rattan plantation development. IFMA holders are allowed to develop rattan plantations but there are no reported plantations developed by IFMAs (FMB Officials, *Tesoro's pers com*).

Rattan Deposit – To assure funding for the development of rattan plantations, DAO No. 4 requires the collection of fifty centavos (P0.50) for every lineal meter of rattan harvested for poles two centimeters and bigger in diameter, and twenty-five centavos (P0.25) for rattan smaller than two centimeters in diameter. The special deposit is considered a trust fund and is supposed to cover the replanting obligations of the permittees. It is not readily known however, how much has been collected and deposited with the national treasury.

Rattan Plantation Development Out of the Rattan Deposit - There is scanty information on rattan plantation establishment and development. Likewise, there is not much information on the area planted out of the rattan deposit. The rattan deposit deposited with the national treasury is in the form of a trust fund. To utilize the trust fund one has to submit a request from the Department of Budget and Management (DBM). Accordingly, it is not easy to obtain releases from the trust fund. There must be another option to utilize the rattan deposit for plantation development. There are no available data on the extent of rattan plantation that have been established using the rattan deposit.

The consistently high supply of rattan suggests that there are still harvestable materials from Philippines forests. This is contrary to the general perception that the country's rattan supply is fast depleting. This perception has been expressed by one of the industry players. Mr. Padiernos, former President of the Chamber of Furniture Industries of the Philippines (CFIP) and owner of the Pacific Arts and Décor, Inc. (PADI) started in the furniture business by making rattan furniture in the late 80's (Padiernos, E, *Tesoro's pers com*). He has gradually shifted to wood and other raw materials such as bamboo because of the dwindling supply of rattan. The issues are: where are these poles coming from in Caraga Region and Region XI (from plantations or natural forests) and is the supply sustainable. A closer monitoring of the sources of rattan in the regions should be undertaken to document where the supply is coming from.

The inability to access the rattan deposit has hindered the establishment and development of rattan plantations. Options should be identified to be able to utilize the funds for the purpose it was intended. One option is not to collect the rattan deposit but require the permittee to contract out the establishment of plantations. Government then only requires from permittees proof of areas planted as satisfaction of the replanting requirement instead of the deposit.

2.10.7.1.2 Bamboo Resources

It is estimated that there are about 52,000 ha of bamboo in the country comprising of 5 major species namely: kawayan tinik (*Bambusa blumeana*), kawayan killing (*B. vulgaris*), bayog (*Bambusa sp.*), giant bamboo (*Gigantochloa aspera*), and bolo (*G. levis*). Accordingly, the bamboo resources of the country are dwindling because of the absence of systematic management of the resources, lack of concerted effort to develop the resource and lack of effective utilization of bamboo. There is no trend in the quantity of materials produced. However, the reported harvest in 2000, which was 2.34 million pieces seem to be exceedingly high compared to the previous years. There has been very little effort of government in promoting the establishment of bamboo plantation except that it is identified as one of the species that can be propagated in CBFM areas.

The United Nations Development Program (UNDP) supported a bamboo research and development projects at DENR 1987 to 1993 (Virtucio, F., 1996). The project included the establishment of 6 pilot plantations in selected sites in various parts of the country using the 8 most important species in the

country. The plantations were established to determine the performance of the 8 species and to generate needed management prescription for the species. There are also individual efforts in the establishment of plantations most notable is the one in Tanay area in Rizal Province. One of the drawbacks in bamboo plantation development is the high cost of planting materials. It is reputedly about P100 per seedling.

Accordingly, there are no guidelines in the collection and harvest of bamboo in public forestlands. A set of guidelines similar to DAO No. 4 (Series of 1989) covering rattan collection and utilization should be developed for bamboo. Bamboo furniture has the fastest growth rate (15%) among the furniture group and deserves support from government in terms of ensuring sustainable raw material supply and in providing incentives for its continued growth and development.

There is also no viable bamboo shoot industry in the Philippine despite the fact that Filipinos enjoy eating this fine delicacy. Canned bamboo shoots are mostly imported. In Thailand there is thriving bamboo shoot canning industry. Bamboo shoot production could be a viable industry in CBFM areas. It also promotes the conservation of the environment while satisfying the need of the people for livelihood and enterprise development.

2.10.8 Utilization of Non-commercial and Lesser-Used Non-Timber Species

There are about 62 bamboo species and 64 rattan species in the Philippines. In both instances only a few of these species have found commercial and industrial uses. In the case of rattan not more than 7 are commercially used and this is dominated by three species. In the case of bamboo three major species are used commercially for construction and for furniture and handicraft manufacture. There are other 5 bamboo species that have found commercial use lately. The use of the non-commercial species would significantly increase supply of the raw materials.

The utilization of lesser-used wood species has been adequately dealt with in Section 2.10.12 (Provision of New Technologies). With respect to lesser-used bamboo and rattan species, the FPRDI has been conducting research on the utilization of these species. Several climbing bamboos have been studied with respect to bending properties for use as handles of ladies' bags.

There is not sufficient research conducted on the properties and uses of lesser-used non-timber species. More emphasis should be given to these forest products because they can be the basis of livelihood and enterprise development activities in CBFM and other upland populations without putting the forest at risk of destruction and degradation. There is also no known inventory of these species. They should be included in future forest inventories so that their economic importance can be more properly assessed and where industries based on these resources can be properly located.

- **Plantation Development**

Rattan Plantation Development – The Philippines has some experiences in the development of rattan plantations, albeit in small areas. In Ifugao rattans are grown in home garden mainly their fruits, which are used as cure of cough (Fernando, E. & W. Palayapyon, 1988). The National Development Corporation (NDC) and the Paper Industries Corporation of the Philippines (PICOP) jointly developed in 1983 about 4,000 ha of rattan plantation under bagras (*Eucalyptus deglupta*) and falcate (*Paraserianthes falcataria*) plantations (Formoso, G. 1988). There are no records of the volume harvested.

Rattan plantations have also been developed under government projects. Table 16 shows the reported rattan plantations established under the Forestry Sector Project of DENR. There was a reported total area of 11,959 hectares (Tesoro, F., 2000). Some of these areas were developed prior to the formulation of the MPFD.

Bamboo Plantation Development – There are established bamboo plantations, albeit small and scattered and undocumented. These are apart from the pilot plantations developed under the UNDP project discussed earlier. Bamboo plantations are often reported as part of the total plantation development by various projects.

There is no plantation development as such for rattan and bamboo and other non-timber forest products. The growing importance of these resources as raw materials for community-based enterprises should alert government in giving more emphasis in the development of plantations of these species.

2.10.9 Improved Access to Resources by Local Communities

Local communities have been provided access to forest resources by a number of policy issuances by DENR. Foremost among these is the CBFMA. It allows organized communities to manage and utilize large tracts of forestlands for their own ends. In addition, the Resource Use Permit (RUP) allows the community to harvest, process and utilize or sell forest products including timber.

While it is true that communities can harvest, process and utilize/sell timber and other forest products, most communities do not have inherent resources to properly process and add value to the raw materials. Improved access does not only mean physically gathering the resource but the capacity to fully benefit from the resource. Inability of the community to fully utilize and benefit from the resources they are permitted to gather and utilize often lead them to form alliances with people outside of the community who have the capital to process and market the resources often to the disadvantage of the greater number of community members. It has not been enough for DENR to permit the community to gather, process and utilize/sell the forest resources but it must provide the resources to the community to fully benefit from the resource, or link them with organizations that can provide them adequate assistance to fully benefit from the resources they were given access to.

Another example of providing access to resources is embodied in DAO No. 4. Section 8 stipulates that at least 10% of the region's total rattan production areas shall be reserved for local consumption/use where users of the product exist in the region. Furthermore, the same DAO qualifies individual rattan gatherers or cooperatives of rattan gatherers organized under the laws of the Philippines to bid for the operation of rattan production areas. The intent of the DAO is laudable as it gives opportunities to the lowly rattan gatherers to benefit tremendously from the forest resources and become entrepreneurs. By themselves, however, the rattan gatherers cannot mount any serious bid for the production areas. There is the possibility that unscrupulous persons would organize them and use them as dummies to bid for the production areas. DENR must be vigilant and must not allow this to happen.

DENR formulated and implemented the Socialized Industrial Forest Management Program (SIFMP per DAO 24, 1996) to provide more equitable access to forest resources by individuals or families preferably residents of the municipality where the area is located. In fact actual occupants of the areas are given priority. Where the areas that may be awarded to individuals and families are small (1-10 ha) it is still an opportunity for them to improve their economic status. However, government does not provide direct assistance to the SIFMA holder particularly individuals and families who do not have the resources to develop their area. The provision of free seedlings would go a long way in helping individuals and families develop their areas.

DAO 98-42 allows the management and utilization of government owned forest plantations in forest production areas by POs. The plantations that are the subject of this regulation are the reforestation/forest plantation projects administered/established by DENR, plantation areas established by TLA holders and other permittees in compliance to license agreements or permits, and plantations owned by cancelled IFMA, SIFMA, ITP and others whose license agreement has been cancelled for a cause. The intention is highly commendable. However, it is difficult to say whether in fact the harvest can really take place given the opposition of environmentalists particularly NGOs against any cutting in the forest even forest plantations especially those owned by government. Environmentalist groups have objected to the cutting of cull trees in seed production areas, and this is for few and selected deformed trees, how much more for large areas of

plantations. There is need for DENR to undertake information and communication campaign to inform the public that some plantations especially in production forest were planned for harvest at maturity.

Access to resources is not limited to giving the beneficiaries physical access to the resources, it also means providing the beneficiaries with resources to benefit fully from the forest resources they have been given access to. Assistance should be provided them such as access to capital so that they can put added value to the resources and not be limited to trading the raw materials derived from the forest. This is true for POs given RUPs or the rattan gatherer given the opportunity to bid for rattan production areas.

Beneficiaries, who have been given the permit to manage and utilize government-owned forest plantation areas in forest production areas, should be given assistance by government to overcome opposition by environmentalist in harvesting these plantations. Government should mount information and communication campaign to explain that forest plantations in production areas were developed to supply domestic (and foreign) demands for forest products.

2.10.10 Demand Projections for forest products

2.10.11 Demand Projections for Wood

The demand projections for wood covered in this report are those for furniture and housing. Although the requirements of the handicraft industries for wood were not taken into consideration in the determination of the demand projections, they can be covered under the high estimates.

2.10.11.1 Demand of the furniture industry for wood

The demand projections of the furniture industry for wood were based on the average export value of wood furniture for 7 years, from 1996 to 2001 (Table 2.37). The wood furniture industry grew over this period by an average about 9.37%. The average growth rate of 10% was taken as the high estimate and the low estimate of the growth rate was taken as 5%. The growth rate was projected up to 2015.

The volume of wood required to produce wood furniture whether in whole or in part was calculated from an estimate that the value of a cubic meter of wood when manufactured into furniture and exported is US\$ 800 (Padiernos, E, *Tesoro's pers com*). The volume of wood needed by the industry to meet the projected value of export furniture is shown in Table 2.38 for the high estimate and Table 2.39 for the low estimate. By 2015 the projected demand for wood (as logs) for furniture is 1.057 million cu m for the high estimate and 0.578 million cu m for the low estimate.

Table 2.37 Export value of wood, rattan and bamboo furniture (US\$ million)

Product	2002	2001	2000	1999	1998	1997	1996	Average Growth Rate
Wood	122.53	114.85	143.30	132.67	128.33	116.52	100.73	9.37
Rattan	96.94	91.98	118.02	112.89	108.26	123.02	119.29	-2.79
Bamboo	3.34	2.93	3.18	2.67	1.90	1.79	1.57	15.62

Source: Bureau of Export Trade Promotions, DTI

2.10.11.2 Demand for wood for housing

The country has a housing backlog of 2.069 units. The government targeted to build 381,241 new housing units to provide housing to a rapidly growing population. From July 2002 to June 2003, the actual number of housing units constructed was estimated to be 232,773 units, or a shortfall of 148,469 units. This number of using units is added to the backlog (dela Cruz R., 2003).

The housing needs are based on 4 main factors, namely: population growth rate of 2.34%, double occupancy of an estimated 593,356 housing units, 1.255 million housing units needing repair, and

unacceptable housing units or makeshift houses comprising about 25-30 percent of houses in the urban areas.

The projected demand for wood for housing was based on the 232,773 units that are constructed annually and the number of units needing repair. It is not probable that all the units needing repair are repaired in a year. It was assumed that only 10% of the 1.255 million units needing repair are repaired in a year and that the volume of wood needed for repairs is equivalent to 25% of the volume of wood for new construction. The number of units of new construction was projected to increase by 5% every 5 years.

The projected demand for wood for housing was based the calculations of the Forest Products Research and Development Institute (FPRDI) on a single detached unit of 32 m² of floor area, with wood trusses, concrete hollow blocks (CHB) outer wall and concrete slab, inside partition of plywood with wood studs, wood purlins, mouldings, fascia boards, door and window jambs made of wood and wood for scaffolding. In converting plywood to log equivalent, 43% was used and from lumber to log, 50% was used.

The volume of wood projected to be required for new construction and for repair is shown in Table 2.39. There are no high or low estimates for wood requirements for housing.

2.10.11.2.1 Plantation required for wood for furniture and housing

The total projected demand for wood for both furniture and housing (new construction and repair) is shown in Table 2.39 for the high estimate (for furniture) and Table 2.40 for the low estimate (for furniture). The total projected demand is the basis for determining the area of plantation that must be developed to meet the demand. The plantation production volume of wood was assumed to be 200 m³ per hectare at age 10. The total area of plantation to be developed for the high estimate is 87,157 ha and 74,327 ha for low estimate, for the period up to 2015.

2.10.11.2.2 Cost of plantation development for furniture and housing

The cost of plantation development is also shown in Tables 2.39 and 2.40. The unit cost per hectare is taken at P20,000 and projected to increase by 10% every 5 years. The assumed unit cost of P20,000 per hectare may seem low but this takes into consideration plantation development by smallholders in private lands. It is assumed that the area developed by individuals without government support would certainly be much lower than P20,000/ha. This cost is assumed as the average for smallholder and large holder plantations. The yearly cost of plantation development is shown in Tables 2.39 and 2.40. The total cost of plantation development to meet the projected wood demands for furniture and housing is P1,973.33 million for high estimate and P1,672.39 million for low estimate.

Table 2.38. Wood demand projections for furniture and housing.

	2003	2005	2007	2009	2011	2013	2015
High Estimates							
Export value ¹	134.78	163.08	197.33	238.77	288.91	349.58	422.99
Wood needed ²	168,474	203,854	246,663	298,462	361,139	436,979	528,744
In log form	336,948	407,708	493,326	596,924	722,278	873,958	1,057,488
Wood available ³	1,020,000	1,020,000	969,000	969,000	920,550	920,550	920,550
Target housing units ⁴	381,241	381,241	400,303	400,303	420,318	420,318	420,318
Actual units built ⁵	232,773	232,773	244,412	244,412	256,632	256,632	256,632
Wood needed ⁶	1,336,117	1,336,117	1,402,925	1,402,925	1,473,068	1,473,068	1,473,068
Units for repair ⁷	125,500	125,500	131,775	131,775	138,364	138,364	138,364
Wood needed ⁸	180,092	180,092	189,756	189,756	199,244	199,244	199,244
Total wood needed ⁹	1,853,157	1,923,917	2,086,007	2,189,605	2,394,590	2,546,270	2,729,800
Difference	833,157	903,917	1,117,007	1,220,605	1,474,040	1,625,720	1,809,250
Plantation needed ¹⁰	4,166	4,520	5,585	6,103	7,370	8,129	9,046
Plantation cost ¹¹	83.32	90.40	122.87	134.27	178.35	196.72	218.91

1 The 2003 export value (in US\$ million) is the base on 2002 data with adjusted to 10% annual growth rate for high estimate based on historical data, low estimate is 5% based on 7 year trend

A cubic meter of wood has export value of \$800 as furniture (Source: Industry)

2 Volume of lumber (cubic meters) needed by furniture industry

3 Based on average production and imports (less exports) for last 5 years, decreases at a rate of 5% every 5 years (Source: www.manilatimes.net/nationa/2003/jul/31), log form, 50% conversion rate from logs to lumber

4 Number of housing units (381,241) targeted by government for construction, and projected to increase at 5% every 5 years

5 Units actually constructed (232,773) and projected to increase at 5% every 5 years

6 Lumber and plywood used in a 32 sqm house with wood trusses, CHB walls, wooden interior walls, purlins, mouldings, fascia boards, door & window jambs, and scaffolding, 5.74 m³ of logs needed per house including plywood used for interior walls and ceiling

7 Units needing repair, 10% of estimated total units (1,255,000), units for repair projected to increase by 5% every year

8 Assumed that 25% of wood requirement of new unit is needed for repair (1.44 m³/unit, includes lumber and plywood)

9 Sum of wood required for furniture, new housing units and for repair of old units

10 Plantation output is assumed as 200 m³ per hectare at year 10

11 Cost of plantation development is P20,000 per ha and increases by 10% every 5 years, in million pesos

Table 2.39. Wood demand projections for furniture and housing

	2003	2005	2007	2009	2011	2013	2015
Low Estimates							
Export value ¹	128.65	141.84	156.38	172.41	190.08	209.56	231.04
Wood needed ²	160,816	177,300	195,473	215,509	237,598	261,952	288,803
In log form	321,632	354,600	390,946	431,018	475,196	523,904	577,606
Wood available ³	1,020,000	1,020,000	969,000	969,000	920,550	920,550	920,550
Target housing units ⁴	381,241	381,241	400,303	400,303	420,318	420,318	420,318
Actual units built ⁵	232,773	232,773	244,412	244,412	256,632	256,632	256,632
Wood needed ⁶	1,336,117	1,336,117	1,402,925	1,402,925	1,473,068	1,473,068	1,473,068
Units for repair ⁷	125,500	125,500	131,775	131,775	138,364	138,364	138,364
Wood needed ⁸	180,092	180,092	189,756	189,756	199,244	199,244	199,244
Total wood needed ⁹	1,837,841	1,870,809	1,983,627	2,023,699	2,147,508	2,196,216	2,249,918
Difference	817,841	850,809	1,014,627	1,054,699	1,226,958	1,275,666	1,329,368
Plantation needed ¹⁰	4,089	4,254	5,073	5,273	6,135	6,378	6,647
Plantation cost ¹¹	81.78	85.08	111.61	116.01	148.47	154.35	160.86

1 The 2003 export value (in US\$ million) is the base 2002 projection, with 10% annual growth rate for high estimate based on historical data, low estimate is 5% based on 7 year trend

A cubic meter of wood has export value of \$800 as furniture (Source: Industry)

2 Volume of lumber (cubic meters) needed by furniture industry

3 Based on average production and imports (less exports) for last 5 years, decreases at a rate of 5% every 5 years (Source: www.manilatimes.net/nationa/2003/jul/31), log form, 50% conversion rate from logs to lumber

4 Number of housing units (381,241) targeted by government for construction, and projected to increase at 5% every 5 years

5 Units actually constructed (232,773) and projected to increase at 5% every 5 years

6 Lumber and plywood used in a 32 sqm house with wood trusses, CHB walls, wooden interior walls, purlins, mouldings, fascia boards, door & window jambs, and scaffolding, 5.74 m³ of logs needed per house including plywood used for interior walls and ceiling

7 Units needing repair, 10% of estimated total units (1,255,000), units for repair projected to increase by 5% every year

8 Assumed that 25% of wood requirement of new unit is needed for repair (1.44 m³/unit, includes lumber and plywood)

9 Sum of wood required for furniture, new housing units and for repair of old units

10 Plantation output is assumed as 200 m³ per hectare at year 10

11 Cost of plantation development is P20,000 per ha and increases by 10% every 5 years, in million pesos

2.10.11.3 Rattan demand projections for furniture

2.10.11.3.1 Demand projections for rattan

The demand projections for rattan for furniture manufacture are shown in Table 2.40. The projections were based on the average export value of rattan furniture over a 7-year period from 1996 to 2002 (Table 2.37). The average growth rate of the export value of rattan furniture over this period was – 2.79%. However, the industry is optimistic that the rattan furniture segment of the industry will rebound soon. It was assumed that the growth rate be 5% for high estimate and 3% for low estimate. The export value of rattan furniture was projected up to 2015.

It was estimated that a lineal meter of rattan when manufactured into furniture has an export value of US\$2.3 (Padiernos, E, *Tesoro's pers com*). This value was used to convert the projected export value of rattan furniture into lineal meters of rattan. The projected demand for rattan was compared to the available volume of rattan. The available rattan was based on the average production for 5 years and made to decrease by 10% every 5 years. The projected requirements for rattan will grow to 79.48 million lm by 2015.

Table 2.40. Rattan demand projections for furniture.

	2003	2005	2007	2009	2011	2013	2015
High Estimates							
Export Value ¹	101.79	112.22	123.72	136.40	150.39	165.80	182.79
Rattan Needed (lm) ²	44.25	48.79	53.79	59.31	65.39	72.09	79.48
Rattan available ³	21.78	21.78	20.69	20.69	19.66	19.66	19.66
Difference	22.47	27.01	33.10	38.62	45.73	52.43	59.82
Plantation needed ⁴	4,682	5,627	6,896	8,045	9,526	10,923	12,462
Plantation cost ⁵	77.25	92.85	125.16	146.02	190.19	218.08	248.80
Low Estimates							
Export Value	99.85	105.93	112.38	119.22	126.48	134.19	142.36
Rattan needed (lm)	43.41	46.06	48.86	51.84	54.99	58.34	61.90
Rattan available	21.78	21.78	20.69	20.69	19.66	19.66	19.66
Difference	21.63	24.28	28.17	31.15	35.33	39.68	42.24
Plantation needed	4,506	5,057	5,869	6,488	7,361	8,268	8,799
Plantation cost	74.35	83.44	106.52	117.76	146.96	165.07	175.67

1 The 2003 export value (in US\$ million) is the base on 2002 projection, with 5% annual growth rate based for high estimate on historical data, low estimate is 3%. A lineal meter of rattan as furniture has export value of \$2.30 (Source: Industry)

2 Million lineal meters

3 Based on average production for last 5 years, decreases at a rate of 10% every 5 years

4 Area in hectares, based on average of 400 hills/ha, average yield of 4,800 lm/ha at age 15

5 Plantation cost, in million pesos (P16,500/ha), is based on MC 2000-19, increases by 10% every 5 years

2.10.11.3.2 Plantation required for rattan furniture

The area of plantation needed to meet the demand for rattan for furniture manufacture for high and low estimates are shown in Table 2.39. The volume of rattan that must come from plantations was determined by taking the difference between the volume of rattan available from current sources and the volume of rattan needed by industry. This volume was then converted into area of plantation by assuming that plantation of rattan would have about 400 hills and produces 4,800 lineal meters per hectare at age 15 (Lapis A., 2003). It is projected that the area needed for rattan will 12,462 ha for high estimate and 8,799 ha for low estimate by 2015.

2.10.11.3.3 Cost of rattan plantation development

The cost per hectare was taken as P16,500/ha based on MC 2000-19. The cost was assumed to increase by 10% every 5 years. The total amount needed for the 14 year projection was estimated to be P2,098.11 million for the high estimate and P1,677.47 million for the low estimate.

2.10.11.4 Bamboo demand projections for furniture

2.10.11.4.1 Demand projections for bamboo

Bamboo furniture is among the fastest growing segment of the furniture industry. Based on a 7-year performance of this industry segment, it posted a growth rate of over 15%. The export performance of the bamboo furniture industry was projected at growth rate 15% for the high estimate and at 10% for the low estimate. The volume of bamboo required to meet the projected export value of bamboo furniture was determined on the basis of US\$ 7.8 export value of 1 piece of bamboo (7 m long), (Padiernos, E, *Tesoro's pers com*). The amount of bamboo available was projected up to 2015 on the basis of the average bamboo production for 15 years. The projected available volume was assumed to decrease at a rate of 5% every 5 years (Table 2.40).

2.10.11.4.2 Bamboo plantation development

The difference between the projected available volume and the project volume needed by the industry to meet the projected export of bamboo furniture was the basis for the determination of the amount of plantation that needs to be established. It was assumed that a bamboo plantation with 200 hills/ha would be able to produce 1,000 pieces annually at age 7 and onwards (Umali, P., 2000). The projection shows that from 2002 to 2007 the available amount of bamboo is higher than the volume demanded by the industry for the high estimate and from 2002 to 2009 for the low estimate. The total amount of plantation needed to be established up to 2015 was estimated to be 6,928 ha for the high demand estimates and 2,032 for the low estimate (Table 2.41).

Table 2.41. Bamboo demand projections for furniture.

	2003	2005	2007	2009	2011	2013	2015
High Estimates							
Export Value ¹	3.85	5.09	6.73	8.89	11.76	15.56	20.57
Bamboo Needed ²	493,017	562,014	862,289	1,140,377	1,508,149	1,994,527	2,637,762
Bamboo available ³	908,000	908,000	862,600	862,600	819,000	819,000	819,000
Difference	415,983	282,986	311	277,777	689,149	1,175,527	1,817,962
Plantation needed ⁴	-	-	-	278	689	1,176	1,818
Plantation cost ⁵	-	-	-	7.61	20.76	35.43	54.77
Low Estimates							
Export Value	3.68	4.45	5.39	6.52	7.77	9.54	11.54
Bamboo needed	471,581	570,613	690,442	835,435	1,010,876	1,223,160	1,480,024
Bamboo available	908,000	908,000	862,600	862,600	819,000	819,000	819,000
Difference	436,419	337,387	172,158	27,165	191,876	404,160	561,024
Plantation needed	-	-	-	-	192	404	561
Plantation cost	-	-	-	-	5.78	12.17	16.90

1 The 2003 export value (in US\$ million) is the base on 2002 projection, with 15% annual growth rate high estimate based on historical data, low estimate is 10%. A piece of bamboo has export value of \$7.80 as furniture (Source: Industry)

2 Number of pieces (7 m average length)

3 Based on average production for last 5 years, decreases at a rate of 5% every 5 years

4 Area in hectares, based on average of 200 hills/ha, average yield of 1,000 piece/ha at age 7

5 Plantation cost, in million pesos (P24.900/ha), is based on MC 2000-19, increases by 10% every 5 years

2.10.11.4.3 Cost of Bamboo Plantation Development

The cost of plantation development was also calculated and shown in Table 2.40 for both high and low demand estimates. The plantation cost was based on MC 2000-19 and assumed to increase by 10%

every 5 years. The total cost of plantation development for the high estimate is P206.38 million for the high estimate and P61.06 million.

2.10.12 Provide New Technologies

The shift in the production areas from the virgin forests to the second growth forest resulted in the harvest of smaller diameter logs, the increased use of lesser-known/used species and the increased use of plantation grown species in applications where the common commercial species were utilized. This means that government should provide industry the processing technologies for these species.

In 1991-1994 the International Tropical Trade Organization (ITTO) provided grant funds to the Forest Products Research and Development Institute (FPRDI) to conduct research on the utilization of small-diameter logs including tree-tops and branches. The study generated technologies on the processing from sawmilling, drying and machining as well as identified suitable uses of these species. However, the results of this study have not been fully utilized by the wood-processing sector. The Paper Industries Corporation of the Philippines (PICOP) adopted the saw-dry-rip technology for sawing tree-tops and branches. From the ITTO study two technology publications in CD form have been published by FPRDI, namely Field Guide to the Identification of Important Lesser Used Species of Philippine Timbers, and Manual on the Properties and Uses of Lesser Used Species of Philippine Timbers.

One drawback in the utilization of tree tops and branches is economic in nature. The cost of collecting and transporting these raw materials is higher compared to large diameter logs since the cost of collection and transport of these two types of materials is more or less the same.

In 1990 the Philippines had an estimated volume of 0.413 million cu m of lesser-used species (LUS) with 70 cm diameter and larger, 0.771 million cu m of diameter 60 cm and larger and about 1.183 million cu m of diameter 50 cm and larger (Bello, E. and A. Moistero, 1997). About 9.8% of the total volume of trees harvested in the natural forest is LUS. To promote the utilization of LUS the ITTO also funded in 1993 a 5-year project at the FPRDI on the "Utilization of Lesser-Used Species as Alternative Raw Materials for Forest-Based Industries".

The physical, strength and processing properties, such as sawmilling, drying, machining, finishing, natural durability and treatability with preservatives, of these species of 39 species were studied. Likewise, the end uses such as posts, sills, beams, joists, rafters, flooring, etc. were studied. Publications on the properties and uses of these LUS were prepared and disseminated. The use of LUS in the manufacture of parquet flooring, mill works, pallets, treatment of materials for poles and wood bending were piloted for more than two years with the private sector. It is not known whether any of the cooperators continue to use these species for the production of their products.

Despite extensive technology transfer and promotional activities only two electric cooperatives, one in Isabela and the other in Ilocos Norte adopted the use of LUS for poles treated with preservatives through the High Pressure Sap Displacement Method (HPSD), (Pabuayon, C., 2003, Tesoro's pers. com.). One furniture manufacturer in Pampanga adopted the wood bending technology but had to stop because of lack of raw materials. One of the barriers in the adoption of technologies in the utilization of LUS lies in the size of most of these species. The harvest of trees from the natural forest allow only the cutting of trees not less 60 cm in diameter, except along rights-of-way, log landing, and skid trails. Furthermore, the processing of LUS requires significant capital investment for retooling (Smith, P., 2000), which is not readily available to wood processors.

Because the cost of collection and transport of LUS is higher than the commercial species their utilization should be in the manufacture of higher value added products such as mill works and furniture. However, since the supply of individual species is rather limited the utilization of these species should be one that allows grouping or clustering. Their use as construction materials allow grouping of species. Furthermore, the perception that they are inferior to commercial species has to be overcome before they become acceptable to lumber users. The use of machine stress-graded lumber where the lumber, is graded

according to its inherent strength properties and not because it belongs to the popularly used species, could overcome the negative perception of LUS.

Machine stress grading of lumber is another ITTO project at the FPRDI. The technology has been piloted in two sawmills, one in Aurora and the other in Quezon City. Three lumber producers are now willing to adopt the technology and are just waiting for the standards for machine stress-graded lumber which is now being formulated by the Bureau of Product Standards before they acquire the machine. Two of the firms are in Cebu and the other in Mandaue City.

The government has been generating technologies for the wood-based industries. There are however, some barriers in the adoption of these technologies by the private sector. A mechanism is needed to liaison between the technology generators and the industry for the faster transfer and adoption of the technologies.

The harvest of LUS is guided by rules and regulations that apply to the common commercial species particularly in diameter limit requirements. LUS by nature have small diameters and if the minimum cutting diameter of 60 cm is applied only a small volume of LUS can be harvested thus limiting its prospects for wider utilization and the prospects of augmenting very limited wood resources. It is suggested that government reviews this policy.

There are technologies on the utilization of LUS. However, these are not being adopted by the processing sector. Government must also review and strategize how the technologies can be effectively transferred to industry.

Government research organization should also consider breeding studies to improve the growth rate of LUS and similar species.

2.11 Policy and Institutions

2.11.1 Introduction

Following the Rio Summit of 1992 (UNCED, 1992), the “Master Plans” supported by Asian Development Bank, the Sector Studies supported by the World Bank and the Tropical Forestry Action Plans and the National Forestry Action Plans (Programmes) sponsored by FAO/UNDP have all been brought under the umbrella of a National Forest Programme (NFP) global framework. IPF/UNCSD has endorsed the NFP framework (and the related principles) and recommended it for adoption by member nations. The central piece of NFP is an implementable (practical) forest policy, supported by appropriate instruments and strategies. Policy(ies), formulated/revised/modified on the basis of detailed analyses and consultations, are implemented through long-term programmes comprising of hierarchically linked sub-programmes, programme elements, projects and activities of varying (shorter) duration, for achieving the programme objectives, which in turn will contribute to the achievement of policy objectives. Strategies are designed (including institutions, regulatory instruments, capacity building, human resource development, partnerships, resource mobilization, science and technology development, dissemination of information) to suit the policy environment. Programme implementation is to be continuously and thoroughly monitored to facilitate necessary modifications (course corrections) as the dynamics of the situation would dictate.

The National Forest Programme Development (or Master Plan for Forestry Development) is an exercise in strategic planning. Among the philosophical basis of NFP are as follows:

- NFP is a plan/programme for the forestry sector of a nation as a whole (with component regional/local plans), and not a plan/programme for the government forestry agency alone.
- It deals not only with the core aspects of the forestry sector, but also with its interfaces with other relevant sectors.
- NFP should be fully ‘owned by the nation,’ particularly by the main Planning Body of the country.
- An essential part of the NFP exercise is a policy analysis/evaluation to identify the policy/institutional reforms required, to support development of the forestry sector
- NFP is a long term strategic plan, with a time perspective of 20 to 25 years, within which medium and short term plans for specified time slices are to be prepared.

2.11.2 Strategic Planning Concept

Strategies, when used in relation to the policy of a sector, are measures/logistics/ programmes to achieve policy objectives. In that regard, they link the institutional, technical and other aspects/activities of the sector. They are the operational counterparts of principles enshrined in policies; and they influence the arrangements to get the policy implemented at various successive levels.

For example, if one of the policy objectives is to effectively conserve, rehabilitate, expand, enhance, develop and manage the forest resources as a renewable national asset, the likely policy measures would cover land use/functional classification, forest resource expansion, improvement of productivity, management planning and implementation, etc. For each of these there is need to design strategies. Thus, for example, improvement of productivity may call for allocating management of production forest to the private sector or smallholders, genetic improvement of species, dissemination of research results/technology, incentive schemes and/or development of infrastructure. These are normally written into policy documents to serve as guidelines. The strategies normally concentrate on the main measures required to achieve the goal outlined. The substantive content of the individual measures to be carried out will be selected through clear priority setting, based on the situation, to ensure high probability of success and impact (FAO, 1994).

Strategy formulation should be based on a holistic approach. Different parts of the sector are interconnected and interdependent, so that changes at one point affect other parts.

Strategic planning is concerned with strategy of planning as well as planning of strategy. Policies serve to provide the strategy considerations for preparing sectoral plans; and the plans are meant to translate the policy imperatives, principles, objectives and measures into implementable proposals. Thus, often, policy development has to become part of a broad strategy and specific implementational policies are designed as part of the plan. Wherever the policy concerned is irrelevant or outdated, it will be necessary to review, modify and reformulate it, as a strategy. In fact, policy review is a part of the strategic planning process.

A strategic plan involves stakeholder participation, i.e. of those who will be affected by the plan, and consists of interrelated programmes, sequentially and/or simultaneously linked as an integrated agenda for action. Strategic planning specifies pre-conditions and considerations to ensure effective implementation; it has strong institutional bias (Chandrasekharan, 1998).

In respect of the forestry, all relevant aspects need to be considered in the strategic plan – resources inside and outside of forests, their conservation, harvesting, processing and utilisation and structure of institutions. What differentiates strategic forestry planning from traditional planning is that it makes a more comprehensive evaluation of the planning options involving wider explorations and broad themes. It analyses alternatives to decide on a realistic development path. It considers globalization of forestry issues and the multiplication of stake holders. Strategic planning in relation to forests has the following characteristics:

- It is a means to design actions to increase the social, cultural, economic, and environmental benefits from trees and forests;
- It has a strong programme/management orientation, since a programme strategy should state specific goals, specific activities, and specific target groups;
- It is much more than a set of projects, although projects are one type of instrument for achieving certain goals. (Programmes represent strategies, and projects are often ‘time slices’ of ongoing programmes).

2.11.3 Brief History of Philippine Forestry

A system of forest administration was initiated in Philippines in 1863 with the creation of the Office of “Inspeccion General de Montes.” As early as in 1894, by virtue of a Royal Decree, no land of the public domain was allowed to be sold unless properly surveyed, its boundaries marked out, measured and certified by the Inspeccion General de Montes, as alienable and disposable.

In May 1904, under American rule, the Forestry Act of Philippines was enacted, containing among others the Philippine Forest Policy, which continued to be the basis for all forestry operations until May 1975, when the same was expanded and made more relevant to the current situation by Presidential Decree 705.

During the period 1904 to 1987, Bureau of Forestry was under the Departments of Interior, Agriculture and Natural Resources, Agriculture and Commerce for varying lengths of time. This period also saw enactment of many laws and regulations on forestry and large scale extraction of logs for export from natural forests. Some of the mile stones included:

- 1916 : Establishment of School of Forestry in the University of Philippines.
- 1950 : Commonwealth Act and large scale conversion of A & D lands for agricultural expansion.
- 1950s: Initiation of TLAs for large scale timber extraction.
- 1953 : RA No. 828 creating Parks and Wildlife Commission which absorbed the functions of Bureau of Forestry pertaining to parks and wildlife.
- 1957 : Establishment of Forest Products Research Institute.
- 1969 : Creation of Forest Research and Industries Development Commission.

- 1972 : Formation of the Bureau of Forest Development, merging Bureau of Forestry, Reforestation Administration, Parks and Wildlife Office (as per PD No. 1).
- 1974 : Establishment of Forest Research Institute.
- 1975 : Issue of PD 705; Bureau of Forestry Development formally organized under the provisions of PD 705.
- 1987 : Issue of Executive Order 192 of 1987. Most regulatory functions of BFD were decentralized to the field offices known as Environment and Natural Resources Offices (ENROs). And, Bureau of Forestry Development became Forest Management Bureau (which absorbed the staff functions of Wood Industry Development Authority), with staff functions and recommendatory powers.
- 1990 : Approval of Master Plan for Forestry Development.
 - : RA No. 7586. Promulgation of National Integrated Protected Areas Systems.
- 1995 : EO 263. Adoption of Community Based Forest Management as a national strategy.
- 1997 : RA 8371. Promulgation of Indigeneous People's Rights Act, which recognizes, protects and promotes rights of indigeneous cultural communities.

On casual reading, all these would give an apparent / superficial impression of positive development. And, it raises a question: has the legacy in forestry been a burden or benefit?

Over the last four decades, the forestry sector in Philippines has steadily declined, leading to escalating ecological degradation and rural poverty. With the benefit of hindsight it can be seen that a number of inadequate, inappropriate or poorly implemented policies (and policy instruments) have contributed to the situation.

Philippines was one of the first few countries to start logging concessions, and also to drastically degrade/destroy its forest resources. The forest history of Philippines can be divided into five periods.

First, a period of low exploitation from the colonial era through to 1945.

Second, a period of increased forest exploitation for development during the post independence era, from 1946 to 1960. There was greater emphasis on production of timber for revenue.

Third, a period of peak logging and concession exploitation, during 1960 to 1970.

Fourth, one of attempts to build a forest products industry, between 1970 and 1980. This period saw moves towards establishing local forest products industry, but this attempt was not successful, and only encouraged illegal activities.

Fifth, one of increased emphasis on social and environmental roles of forestry.

The Philippine forest cover in 1900 was estimated at 21 million ha or about 70% of the total land area. In 1920s, this was reduced to 18 million hectares or 60% because of the great demand for tropical hardwood for export. In 1950 estimates place forest cover at 50% or 15 million hectares. Considering that 56% of the Philippines is classified as upland, the threshold in sustainable management was crossed in the 1945-1950 period, the effects of which is beginning to be felt only now in terms of loss of soil, siltation, and uncontrolled flooding.

In 1960s, FAO placed forest cover at 40% or 12 million hectares of the total land area. Logging concession areas increased from 4.5 million hectares to 11.6 million hectares, covering more than one third of the entire country.

1970s saw the forest cover dwindle to 34% of the total land area or 10.2 million hectares. From 1977 to 1980, deforestation reached an all time high – over 300,000 hectares a year. The Swedish Space Corporation (SPOT) study of 1987 placed forest cover in the Philippines at 6.9 million hectares or 23.7% of the total land area. Despite stricter government control, regional logging bans failed to slow down the annual deforestation rate. This was a period of open access and much illegal logging was done. (EC-UNDP 2002).

The Philippine-German Forestry Resource Inventory Project places forest cover at the end of 1987 at 22% or 6.6 million hectares. Since 1987, deforestation is estimated to have continued at the rate of 100,000 hectares a year. This means that at the beginning of 1999, the Philippines will have 5.5 million hectares or 18.3% of land area as forest cover.

2.11.3.1 Institutional Aspects

Institutions relating to forestry in Philippines originated towards the later part of the 19th century while it was under Spanish Colonial Rule. Laws, rules, and administrative arrangements were established to protect the colonial interest in the forests.

“Institution” is the core element in management (of a sector, resource, programme). An institution can make all the difference regarding the conditions and development of a sector. It will not be possible to solve the problems of a sector if its institutional issues are not addressed. Steering clear of the institutions or addressing institutional aspects on an *ad hoc* basis will only make matters worse.

2.11.3.1.1 Background

The institutions of public forest administration (PFA) in Philippines today struggle with inherent inadequacies, despite many years of faltering efforts to grow stronger. The PFA is entrusted with the following major, but conflicting, missions/functions:

- an enforcement authority, and a forest police force (without adequate ‘real authority’ in terms of appropriate legal instruments);
- an enterprises, to produce and market timber and other products (without the needed flexibility, freedom and financial control);
- servicing sectoral development through, *inter alia*, planning, informing, monitoring and training (without adequate means, mechanisms and capability).

PFA is marked by inadequacies in terms of commitment, funds facilities and specific skills and lack of incentives and freedom to respond to emerging situations. As a result, developmental activities are constrained by lack of a reliable information base and planning, delays in implementation of projects/activities, consistent low achievement of targets, low quality of forests and plantations, lack of funds for adequate management and maintenance activities, ineffective protection, encroachments, land abuses and illegal activities.

Even though, forestry at the farm, small estates and home stead levels was, and continues to be, practiced by people as an economic and productive activity, “forestry sector” is identified as a Government activity, dominated by the bureaucracy.

2.11.3.1.2 Historical trend

The history of forest policy in Philippines can be divided into 5 main periods: a period of low exploitation during colonial, wartime and postwar eras; a period of increased exploitation for development during the post-independence era; a peak of logging and concession exploitation during the 1960s and 1970s; one of establishing a forest products industry in the 1970s and 1980s; and the ongoing “community-based” efforts to rehabilitate the depleted and damaged forests, since 1990.

The first period was largely dominated by Spanish Royal Decreases which focused on gaining revenue and keeping the Spanish navy supplied with timber. The population was small and thus pressure on the timber resource was limited. Following the take-over of the country by the United States in 1898, the American Congress enacted the first Forest Act in 1904. This was to form the basis of forestry legislation until 1975.

The second period coincided with independence (1946) and the need to develop the country and its economy. The new constitution provided that all timber lands belonged to the state. Forest policy did not

change much, but greater emphasis was placed on the production of timber. This meant more revenue to the government, much needed to accelerate development. This period also saw the change to modern mechanized technology and hence the ability to have a major impact on the forest over a large area. Also introduced was the application of selective logging of the *Dipterocarp* forests. However, in practice, logging occurred without much concern for scientific principles.

The third period was the peak period of exploitation of Philippine forests, starting in the early 1960s. Harvests from the forest rose rapidly with little concern for long term sustainability of this harvest. The impetus for this “rush to destruction” came from three sources. The large multi-national logging companies were able to make enormous profits from the continued growth of harvesting volumes, often in association with local business people and the government. The government almost took pride in the ever-increasing harvest which meant more foreign exchange and increasing revenue. By 1969, forest products constituted 33% of total export revenues, while the international forestry community warned the government of serious resource loss and ecological damages, if there was no significant change in policy. Ironically the revenue generated was not used to restore the integrity of the forest resources and to scientifically manage them.

The fourth period saw a move towards a local forest products forestry. During the 1960s and 1970s, as much as 80% of the recorded log production was exported as logs; processing into lumber and plywood was almost seen as a residual industry. The move towards wood-based industrialization led to further deforestation. As already seen, parallel efforts at reforestation and rehabilitation of forests did not meet with the desired success.

The ongoing efforts to promote community-based forest management have not so far helped to contain deforestation and other illegal activities, nor to promote forest plantations. The initiatives are riddled with institutional weaknesses.

Important institutional aspects which need to be reviewed periodically for their effectiveness and relevancy are: policy, legislation (along with rules and regulations), sectoral organizations, planning/ programming/ budgeting, human resource development, research and technological support and a system of monitoring and evaluation. These are closely linked.

2.11.3.1.3 System of policy instruments

Policies, being an instrument of stability and of long term nature, are often promulgated separated from the related laws and implementing rules and regulations. In few countries the policies and IRR pertaining to a sector are legislated as one Basic Law. In others the policy and major laws are separately legislated, where as the rules and regulations relating to procedures and administrative matters are made by the executive branch, based on powers delegated as per the enabling policies and laws.

The term ‘policy’ generally refers to the principles that govern action directed towards given ends. It defines agreed-upon or settled courses of action, adopted and followed by Governments and institutions. A policy provides an important means to achieve some ends. The effectiveness of policy can, therefore, be judged only in terms of achievement of the ends or goals, without causing any undesirable cost to the society.

Categories of policies differ depending on their coverage, scope and purpose. At the national level, the country’s Constitution represents the ultimate policy and law. Next in hierarchy are the major national policies such as the economic policy, trade policy, investment policy, land use policy, and environmental policy. Most important national objectives such as social equity, quality of life, poverty alleviation, capital formation, income growth, investment and environmental conservation are set out in these policies. Provisions contained in these policies supersede those of the sector and lower level policies. The specific sectoral policies such as forest policy and agricultural policy form the next lower level. (In some cases, there are also sub-sectoral policies or policies relating to specific aspects of a sector, e.g. policy on forest plantations, as dictated by circumstances). Policies are not mutually exclusive, as various policy levels must be closely linked and free from conflicts.

2.11.3.2 Forest Sector policy

A national forest sector policy specifies certain principles regarding the use of a Nation's forest resources, which it is believed will contribute to the achievement of national objectives. Objectives of the sectoral policies will be linked or related to enhancing the direct or indirect contribution of the sector to achieve the larger national objectives. Early forest policies tended to consider timber production as the primary function of the forest. In today's context, a multiplicity of interests compete for forest outputs and correspondingly forest policies have become increasingly complex.

Forest sector policies can be in the nature of a manifesto, listing broad objectives, or as a portfolio, setting quantitative targets and specific goals to be achieved within a defined time-frame. If the policy objectives are to conserve, rehabilitate, replenish, expand, enhance, develop and manage the forest resources of the country as a renewable asset to meet the needs for forest goods and services, then the policy should clearly and quantitatively define the scope of each component of the objectives and specify how the quantified objectives will be achieved, indicate the phasing and time-frame and detail the strategic and institutional measures required.

In the past, forest sector policies had tended to be of manifesto type. With increasing emphasis on transparency and accountability in public affairs, need for rigid monitoring and evaluation, and social auditing of policy implementation more and more policies are being developed in the nature of portfolios.

2.11.3.2.1 History of Policy Development

The Forest Act of 1904 (Act 1148) passed by the US Congress has been the basis of forestry regulations in the country until the middle of the 1970s when PD 705 was promulgated. The revised Administrative Code of 1917 (Act 2711) reiterated the basic forest policy stating thus: "The public forests of the Philippines shall be held and administered for the protection of the public interest, the utility and safety of the forest, and the perpetuation thereof in productive condition by wise use". This statement is akin to the principle of SFM of today.

The Philippine Constitutions of 1935 and 1973, the Commonwealth Act 141 of 1936 (Public Land Act), and PD 389 of 1974 (Forestry Reforms Code) had policy statements and guiding principles relating to forestry. However, the main thrust of forestry regulations in the 1900s up to the middle of the 1970s was primarily directed toward the utilization of the forest.

PD 705 of 1975 embodies most of the regulations on the management, administration, regulation, utilization, protection, and development of forest resources in the country. The Code adopted the following policies:

- The multiple use of forest lands to be oriented to the development and progress requirements of the country, advancement of science and technology, and public welfare.
- Land classification and survey to be systematized and hastened.
- Establishment of wood processing plants to be encouraged and rationalized.
- The protection, development, and rehabilitation of forest land to be emphasized to ensure their continuity in productive condition.

2.11.3.2.2. 1987 Constitution of the Philippines

Article XII, Section 2 of the new Constitution states that the exploration, development and utilization of natural resources shall be under full control and supervision of the State. The State may directly undertake such activities, or it may enter into co-production, joint venture or production sharing agreements with Filipino citizens or corporations or associations at least 60% of whose capital is owned by such citizens, corporations or associations. This Constitutional provision opens up immense possibilities for establishing participatory, transparent, accountable forestry institutions capable of translating policies into practice.

The Constitution also underlines the need for forest property demarcation: "State shall enforce and people shall respect the forest boundary."

2.11.3.2.3 Current Situation of Forest Policy of Philippines.

The lynchpin of forest policy in Philippines remains to be the PD 705, as amended by PDs 865, 1559 and 1775, EOs 273 and 277, and RA 7161. The code is divided into four key chapters on:

- Organization and Jurisdiction of the Bureau of Forest Development;
- Classification and Surveys of Land;
- Utilization and Management of Forests with sub-topics on timber resources, wood processing, reforestation, forest protection, and special uses and qualifications for the grant of the privilege to utilize, exploit, occupy or possess forest lands;
- Incentives, Offenses and Penalties.

The policy implementation strategy as propounded in PD 705 are based on:

- Management of productive forests
- Reforestation
- Stabilization of upland communities
- Protection of critical watersheds

As can be noted, PD 705 was drawn up when the major thrust of Philippines forestry was towards massive commercial exploitation of the vast state-owned natural forests by large corporations. Now that the focus has shifted towards people-oriented, small-scale, community-based forest management, covering man-made forests as well as the meager remaining natural forests, PD 705 has become somewhat obsolete. The strategies failed for lack of proper application or enforcement of the basic principles – for example, while the principles of selective logging and AAC are sound, in practice they were never applied faithfully. Reforestation strategy failed because there was no insistence on efficiency and quality and no attention on after-care.

The Philippine Master Plan for Forestry Development (1990), prepared with the support of ADB/FINNIDA was an important effort to improve the situation in terms of policy, structured programmes and action. MPFD also proposed a new comprehensive policy in the form of a Sustainable Forest Management Act. The proposed SFM Act is still pending with the national legislative bodies. In fact, MPFD proposals were overtaken by several events in the meanwhile; and, the MPFD itself was set aside with changing administrations and changing priorities. *Ad hoc* changes took place in the policy and institutional arena which influenced and impacted on the situation of forestry in the country. Various forestry-related laws and administrative issuances recently introduced (since 1990) have been touched upon elsewhere in this report. Some of the important ones among these are:

- RA 7160 of 1992 (Local Government Code)
- RA 7161 of 1992 (New rates of forest charges and ban on cutting mangrove trees)
- RA 7586 of 1992 (NIPAS Law)
- DAO 02 of 1993 (Rules and regulations for identification, delineation and recognition of ancestral land and domain claims)
- EO 247 of 1995 (Prospecting of biological and genetic resources)
- EO 263 of 1995 (CBFM as national strategy for sustainable development of the country's forest)
- Philippine Agenda 21 (1995)
- MC 13 of 1997 (adopting Strategic Action Plan for CBFM for 25 years, with targets differing from MPFD)

- RA 837 of 1997 (IPRA law)
- RA 8425 of 1998 (Social reform and poverty alleviation programme)
- AO 01 of 1998 (Implementing rules and regulations for IPRA)

While most of the provisions of PD 705 are still considered as operational, there have thus been major changes in policies and IRRs influencing sustained yield forest management, multiple-use forest and land management, land classification and sub classification, forest utilization by the private sector, forest products disposal through licensing and forest charges system, rationalization of the wood-based industries, selective logging system, government reforestation, proliferation of agencies with forestry functions, log export quota/log export ban, integrated social forestry, industrial tree/forest plantations, wood production by forest concessionaires and so on through a maze of decrees, orders, directives, letters of instructions, circulars and memoranda (EOs, DAO, DMs, DCs).

The present state and inadequacies of forestry policies has come about because of a vicious cycle of administration by regulation.

The policy scene is made more confusing through (policy related, policy type) statements found in medium-term plans, annual operational plans, project documents, official reports /documents , workshop papers, meeting recommendations etc which tend to be recycled. These lead to a mix-up of vision, mission, principles/mandates, objectives, thrusts, strategies, directions, programme areas, IRRs and guidelines which to a great extent are overlapping and superfluous (instead of crystallising an effective set of policy measures and identifying appropriate means of implementing those measures). Thus, one finds a series of comparable policy objectives¹ and strategies², in the official documents.

A number of piecemeal policies, relating to or relevant to forestry, with individual policies changing constantly without reference to its impact on others cannot be a substitute for a cogent, comprehensive and consolidated forest sector policy, sections/parts of which are internally consistent.

The collection of policies and their IRRs (without any clearly defined hierarchy) tend to contradict, conflict and overlap with each other, and does not adequately serve sectoral development. Examples of the contradictions/conflicts are several, e.g. relating to forest use in mangroves, watersheds, TLAs/CBFM areas etc. These have all been eloquently brought out in various studies/ reports (ADB 2000a; Dalmacio, 1999; DENR, 2002a; Ganapin, 2001; Guiang 2001; Ramos, 2000; SUSTEC 2001; Tesoro, 1999; Vitug, 1993). Thus, the collection of policies become a mixed bag of keywords and concepts (ranging from mundane to sublime) without any collective/ holistic purpose.

As can be noted, while there is no legislated forest sector policy in Philippines (the existing policy is a PD of 1975), there are RAs for a component aspects of forestry (e.g. RA 7161 of 1992 regarding forest charges and ban on cutting mangrove trees), which is a strange situation of skewed priorities.

Also, some of the provisions of the revised Forestry Code (PD 705) cannot be properly implemented. For example, the policy declaration that areas with 18 percent slope should all be forest lands, thus preventing permanent tenure status to even well-developed communities within such lands, is an extremely difficult policy to enforce given that an estimated one-third of the population occupies these so-called uplands. The strict enforcement of such a policy is socially, economically, and politically impractical. In addition, there has been no extensive ground delineation of such areas (Ganapin 2000).

The situation of fragmented promulgation of policies related to forestry, makes it difficult to pin down what the current forestry policy is. In addition to being not readily available and tedious to consolidate, the current practice results in varying versions, leading to inconsistencies of policies. This situation gives rise to a felt and real need for a comprehensive forest sector policy to guide new legislation, new initiatives, new plans and programs, and day-to-day decisions to address current and expected concerns, problems and challenges in sustainable forest resources conservation, development, management and utilization. The

passage of a bill on sustainable management of forest resources (House Bill No. 1713 known as New Forestry Code) was submitted to the Congress in 1990. The Bill has not yet been passed. Reason for the delay is not clear. It is understood that the draft of the bill on sustainable management of forest resources is being recast into an EO; and that it is likely to be approved in that form.

A comprehensive draft Forest Policy (called as PFP 2001) was prepared by a team of senior Philippine experts under the banner of SUSTEC and supported by World Bank. The draft has gone through several rounds of discussion. It is hoped that the new EO on sustainable management of forest resources would incorporate the important concerns identified in PFP 2001.

Irrespective of what is contained in the policy documents, a very important problem in Philippines has been the lack of implementation/enforcement due to weak, inadequate and inappropriate organisational structure.

2.11.3.2.4 Non-Forest Laws Impinging on the Forestry Sector

Public Land Act

Commonwealth Act 141 of 1936, otherwise known as the Public Land Act, has played a major role in national development, particularly in accelerating economic progress through disposition of public lands (Alienable and Disposable Land), that stabilizes tenurial right. It has been the law governing the disposition and management of lands of the public domain for almost seven decades now. During the Spanish regime, the governing law concerning public lands was the Maura Law and this was superseded by the Philippine Bill of 1902 and then by Act of the Philippine Commission. Land can never be productive unless the same will be issued a title, and the issuance of certificate of title sparks commercial activities that will be result in the infusion of capital in the market economy, the life blood of social development. With the advent of modern technologies, and in the light of the present needs, the Public Land Act is to be considered obsolete and unrealistic. Hence the revision/amendment has become, imperative. The House Bill No. 1253 known as "Land Code of the Philippines" has unfortunately not become a law, and it is known to have been re-filed. Once it becomes law, the nagging problems affecting public land, such as the proliferation of fake titles, sustainable use of foreshore lands and problems related to land survey matters, can be aptly addressed through responsive regulatory mechanism. It could also facilitate the establishment of a permanent land base.

Local Government Code

The democratic elections held in 1986 and the promulgation of RA 7160 (Local Government Code) in 1991, have resulted in a range of changes including provisions for decentralization of powers and much greater involvement of the people in decision making. The decentralization process is to involve the regional, provincial and community offices and is expected to result in much more robust discussion of policy matters, and much more robust policy implementation.

2.11.3.2.5 Impact of interventions in forest policy reforms

ADB had provided funding support for FSP which included a specific component on policy and institutional reforms. On evaluation, ADB found that overall implementation performance of the policy and institutional reform component was only partly satisfactory. Many of the policy measures were administrative in nature (e.g., issuance of guidelines). But these measures were rendered ineffective with frequent changes in administrative policies. Measures to address forest occupancy centered on the implementation of a census of forestland dwellers, issuance of certificates of stewardship contracts, preparation of control maps, and migration control of forest dwellers. The census was incomplete with no mapping done. Certificates of stewardship contracts were issued but holders had to contend with subsequent changes in policy disallowing thinning and pruning of planted trees. Initial success in reforestation of the denuded upland forests, a major objective, was not sustained.

The major weakness in the policy reforms was that the reforms were not supported by legislation to make them more permanent. Changes have been made at the administrative level and have been amended or nullified by subsequent administrations and different interpretations at the provincial level.

Absence of a single legislated forest sector policy; lack of a proper hierarchy in the system of policies; proliferation of fragmented and piecemeal policies causing conflicts and overlaps; frequent policy (and IRR) changes initiated by administration; inadequacies of policy implementation; difficulty in making structural changes in forestry organisations are some of the important issues which need to be addressed.

2.11.3.2.6 Legal matters, rules and regulations

A viable and efficient legal system is a very important instrument for effective implementation of policies, and achievement of policy objectives. The legal system covers the legislation and related rules and regulations, along with the relevant institutional and judicial system. The legal system of a country begins with its Constitution, into which the various sectors of the economy are designed to fit. Accordingly, the various sectors will have their own system of legislation which is expected to be properly co-ordinated with the other component systems.

2.11.3.2.7 Enabling role of policies

There is close linkage between policies and legal instrumentation. Policies enable development and enforcement of legal instruments to ensure compliance, to support legal and to prevent illegal actions, to establish basic conditionalities and so on.

A rational (compatible to the policy objectives and social norms) and healthy system of legal instruments is the foundation for good governance.

Hierarchical nature of legal instruments are characterized by specific objectives involved, designation of authority competent to establish the legal instrument, its currently/duration, penalty for violation, steps involved in prosecution of cases, repeal procedures and so on. In forestry the major functions of legal instruments, among others, include: safeguarding the integrity of forest estate and its boundary delineation, clarity and protection of tenure security, protection of national forest wealth/regimes, equitable regulation of externalities (involving social costs/benefits, upstream/downstream interaction), role of conservation, rights and privileges of forest dependent communities, inter-generational equity etc.

Philippines is signatory to a number of international agreements relevant to sustainable development, including CITES; CBD; the Convention on Wetlands of International importance; the Framework Convention on Climate Change; UN Convention to Combat Desertification; and the World Heritage Convention. The CBD, the objectives of which include the conservation of biological diversity, sustainable use of the components of biodiversity, and equitable distribution of benefits arising from the use of genetic resources, is of special importance. The principles and objectives enshrined in these international agreements are to be incorporated into the national legal system.

2.11.3.2.8 National legal regime

National legal regimes for the forest sector vary widely in scope and quality. Some are overlaid with policy guidelines developed in the past, others comprise multiple instruments adopted reactively rather than proactively, and others are still emerging. Rarely do laws incorporate the concept of stewardship, or define the roles and responsibilities of all the stake holders (SUSTEC 2001).

The need for revamping, amending/consolidating and harmonising the rules and regulations (the legal system) have been recognized for several years and there had also been some interventions.

The policy and institutional reforms component of the ADB-funded FSP had resulted in 11 MCs, 7 DAOs, 4 MOs and 1 EO meant to revamp the existing rules and regulation and to support the objectives of FSP, especially the CBFM. It also supported inter-agency coordination by involving the different sectors interested in forestry by establishing Multi-sectoral Forest Protection Committees (MFPCs) for tackling "illicit" forest activities.

The TA project funded by World Bank to review forestry policies vis-à-vis the watershed and ecosystem management framework and the CBFM strategy and program (known as PFP 2001) has

considered the need to have a legal system consistent with the policy objectives/ strategies. The final report of TA project includes several proposals for rationalizing/amending the existing rules and regulations (SUSTEC, 2001).

The USAID-supported eco-governance programme is seriously involved in harmonising forestry-related rules and regulations at various levels, duly identifying the different types of gaps, overlaps, contradictions, conflicts and inconsistencies in the policy, rules and regulations covering various aspects of forestry (natural forest management, forest land use, PAs and wildlife management, CBFM, watershed management), as well as conflicts between traditional practices and bureaucratic rules, and the gaps in enforcement (and/or non-observance) of existing rules, and their ethical and equity implications. Lack of accountability, transparency and people's participation, (the three pillars of good governance) are possibly the most glaring gap or deficiency.

2.11.3.3 Structure of Forest Sector Organisations

Central to the institutional arrangement is the sectoral organisations including their structure, linkages and roles. The structure of organisations in the forestry sector is influenced by several factors – political history, ownership of forest land and policy objectives and strategies including tenurial arrangements. In the existing system, most of the sectoral organisations are linked to the public forest administration. The public forest administration (DENR) play conflicting roles – as an authority for enforcing forest laws and as an enterprise to carryout investment activities required for development of the sector. This has resulted in the DENR being inadequate, in relation to forestry, on both fronts.

2.11.3.3.1 History of PFA in Philippines

Currently, since 1987, DENR is the Government agency responsible for the management of forests, national parks and other protected areas.

PFA in Philippines traces its roots from a Spanish Royal Decree in 1863 which created the office of "Inspeccion General de Montes", the first forestry service in the country.

As early as in 1894, by virtue of a Royal Decree, no land of the public domain was allowed to be sold unless properly surveyed, its boundaries marked out, measured and certified by the Inspeccion General de Montes, as alienable and disposable.

In April 14, 1900, the US Military Governor issued General Order No. 50 which created the Forestry Bureau under the Department of Interior. In September 6, 1901, creation of the Bureau of Forestry under the Department of Interior was confirmed through Philippine Commission Act. No. 222.

In May 1904, under American rule, the Forestry Act of Philippines was enacted containing, among others, the Philippine Forest Policy, which continued to be the basis for all forestry operations until May 1975 when the same was expanded and made more relevant to the current situation by Presidential Decree 705. In 1975, BFD was formally organized under the provisions of PD 705.

The BFD was then a line bureau which had the jurisdiction and authority over all forest land, grazing lands, and all forest reservations including watershed reservations presently administrated by other government agencies or instrumentalities.

In July 1985, Executive Order No. 1039 created the Wood Industry Development Authority (WIDA) which was responsible for the regulation, control, supervision and development of wood industry of the Philippines in all aspects.

Executive Order 192, known as the "Re-organisation Act of the DENR" issued on June 10, 1987 established the DENR in order to consolidate management of natural resources and the environment in a single agency, by reorganizing the departments of environment, energy and natural resources. Agencies other than DENR that still share some responsibility for natural resources and the environment, are the Department of Agriculture (DA) and the Department of Agrarian Reform (DAR), with respect to upland and coastal area management. However, the establishment of the DENR represents a major effort to create a natural resource and environmental lead agency. EO 192 created, among others, the Forest Management

Bureau which integrated and absorbed the powers and functions of the BFD and the WIDA except the line functions and powers, which were transferred to DENR regional offices.

Prior to 1987, the natural resource sectors were represented in the regions by their respective line bureaus. The reorganization saw the integration of these bureaus on the field level with the intention that DENR functions are decentralized on the regional, provincial and community levels and that environmental and natural resources issues and concerns in the field will be addressed in an integrated and holistic manner. The central offices of the bureaus were transformed into staff bureaus.

2.11.3.3.2 The Department of Environment and Natural Resources

DENR is a huge bureaucracy. Office of the Secretary, DENR is served by one Directorate (for integrated water resources management), a Special Concerns Office, Office of Head Executive Assistant, and Public Affairs Office. Two Authorities, two Boards and one Corporation reports to the Office of the Secretary. The Secretary is supported, in undertaking the mandate of DENR, by 5 Under Secretaries and 4 Assistant Secretaries having their own offices, who together manage 6 Bureaus, 7 Services, 4 Special Offices, 3 Support Groups, 15 RENROs, 74 PENROs, 170 CENROs, and 2 Regional Offices (see Figure 1).

Of the 6 Bureaus of DENR, three are directly relevant for forestry: the Forest Management Bureau; the Protected Areas and Wildlife Bureau; and the Ecosystem Research and Development Bureau.

It is claimed that forestry related and linked activities and aspects account for a much larger share compared to other natural resources sectors under DENR, in terms of area covered (53%) and total of personnel employed (about 52%). However, several stakeholders expressed the view that sustainable forest management receives very little "real" attention and priority.

An important intention of EO 192 (1987) was to re-orient the mission of DENR from traditional regulatory work to development assistance to the local people and forest-based industries through grass-roots, people-centered approach. The main goal was (within a reasonable period) to transform the DENR from a regulatory and controlling organization to a mainly extension organization supportive of the development efforts of the people and the private sector, with greatly reduced regulatory functions. The actual management of production forests were to be carried out by a mix of private sector forest managers-operators (large-, medium- and smallholder lessees supported by NGOs). DENR will continue to manage protection forests, national parks and other protected areas, although some of these can be under management contract with POs, NGOs and LGUs. Interagency cooperation and coordination will also be improved to a stage which will allow for a holistic approach to upland development problems. The goal, however, is far from being achieved.

Forest Management Bureau

The Forest Management Bureau is one of the staff bureaus under the DENR. It serves as the doctrinal center of the Department on all matters pertaining to the management of the country's forest lands, with the mission to: mainstream forestry back to the economy; revitalize the life support functions of forests; promote equal opportunities to the benefits of forests; and bring people in the forefront of forestry.

As specified in EO 192, it is the mandate of the FMB to advise the Secretary on matters pertaining to forest management, development, conservation and protection, and proper use of forest resources. The functions of the Bureau include the following:

- Formulate and recommend policies and/or programs for the effective protection, development, occupancy, management and conservation of forest lands and water sheds;
- Undertake policy studies on forest economics and forest-based industries, including supply and demand trends, and identifying investment problems and opportunities in various areas;
- Develop plans, programs, operating standards and administrative measures to promote the Bureau's objectives and functions;
- Advise the regional offices in the implementation of the above policies/programs; and

- Assist in the monitoring and evaluation of forestry and watershed development to ensure efficiency and effectiveness.

FMB is headed by a Director who is backed up by an Assistant Director. It has seven (7) regular divisions namely: a) Reforestation Division; b) Natural Forest Management Division; c) Community Based Forest Management Division d) Forest Land Uses Division e) Forest Economics Division; f) Administrative Division; and g) Legal Division. There are three (3) Support Staff attached to the Office of the Director: a) Planning and Project Management Staff; b) Geographical Information System and c) Forestry Operations Center. An International and Special Concerns Group is also placed under the Office of the Director to handle all international commitments (see Figure 6).

It is understood that a DAO is underway for establishing a specific line of regulatory/ functional authority for forestry, reporting to the Under Secretary for Operations; and that this may in due course lead to a line bureau for forestry.

Protected Areas and Wildlife Bureau

PAWB is responsible for formulating and recommending policies and programs for the establishment and management of an integrated protected areas system and the conservation of biological diversity. Apart from staff for planning, administration, legal and financial aspects the technical divisions under PAWB are: Bio-Diversity Management Division; PA's Community Management Division; Nature Recreation and Extension Division; Wildlife Resources Division; Ninoy Aquino Parks and Wildlife Nature Centre; and Hinulugang Taktak National Park.

Ecosystem Research and Development Bureau

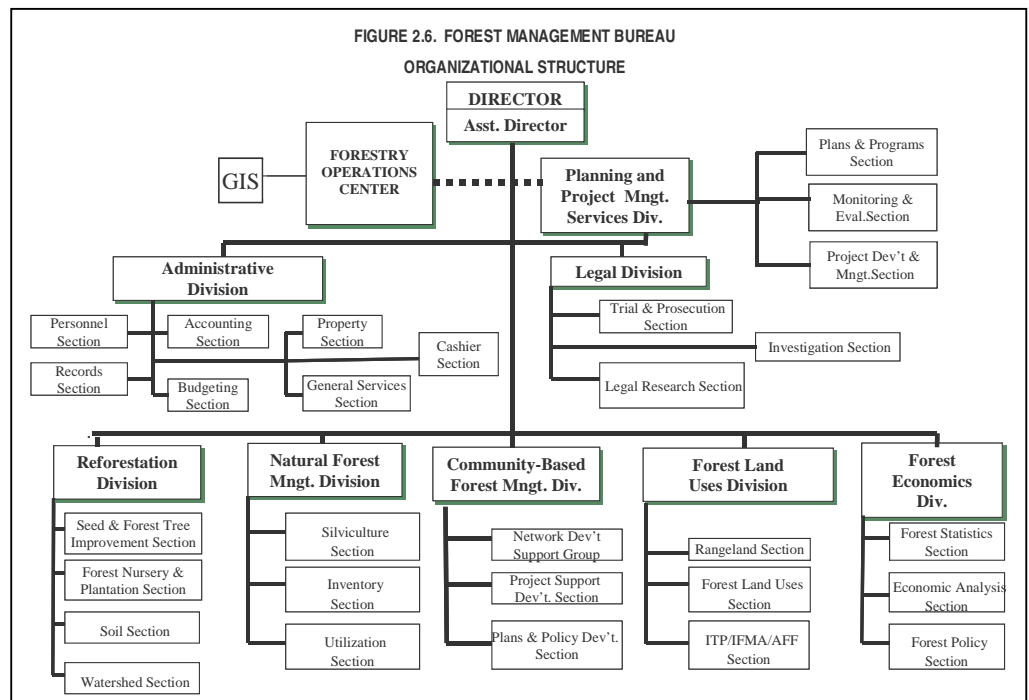
ERDB, which absorbed the former Forest Research Institute and the National Mangrove Committee contains specialized units for undertaking research programmes. ERDB has 6 technical divisions dealing with forest ecosystem research; grasslands and degraded areas ecosystem research; technology development; coastal zone and fresh water ecosystem research; upland farms ecosystem research; and Los Banos Experiment Station. ERDB is serviced by planning, management, legal and finance units.

2.11.3.3.3 Devolution of forestry functions to LGUs

There have been several initiatives after the 1986 election, with regard to democratic decentralization and devolution of authority to LGUs. The Local Government Code (RA 7140 of 1991) has granted LGUs greater fiscal and political autonomy, thereby expanding their capacity to participate in national development efforts. It has brought to the fore the critical role of LGUs in the management of forest and watersheds. In general, the Code has tasked LGUs to adopt measures that will "protect the environment and impose appropriate penalties for acts which endanger the environment". More specifically, the Code gives responsibility to the appropriate levels of LGUs in providing their respective constituencies basic services and facilities, which include the protection of forest resources, among others. Rule V of the Implementing Rules and Regulations of the Code stipulates responsibilities: (a) Barangay level: services and facilities related to general hygiene and sanitation, beautification and solid waste collection; (b) Municipalities: subject to the supervision and control of DENR, the implementation of community-based forestry projects through the ISF, management and control of communal forests not exceeding 50 square kilometers and the establishment of tree parks and green belt and other similar forest development projects; and (c) Province: the enforcement of forestry laws limited to community based forestry projects. These provide the backbone for increased involvement of LGUs in the governance of natural resources in their respective jurisdictions. LGUs' collaborative roles in forestry development have become very important because:

- (i) all CBFM projects necessarily fall within the geographic jurisdiction of LGUs, thereby making LGU cooperation and support logical and vital;

- (ii) RA 7160, amplified by its IRR, DAO 92-30, has transferred certain forestry development functions to LGUs for implementation;
- (iii) LGUs' closeness to the local people and proximity to the forest resources to be managed make them powerful partners of DENR in implementation of CBFM (SUSTEC, 2001).



DENR has already devolved some of its conservation, management, and protection functions to LGUs and reassigned some 1,000 staff members to capacitate local authorities. The Joint DENR/DILG Memorandum Circular 01 (of 1998) has spelled out the procedures for the LGUs' execution of devolved forest management functions.

It was also planned that DENR will transfer budgets, assets, and records that correspond to the Department's devolved functions and programmes; but there has been only limited progress in this. Many LGUs are attempting to defer the devolution, citing, inter alia, lack of clarity in defining the new responsibilities of local authorities, lack of financial capability, inadequate office space to accommodate new staff, and complexities in administrative arrangements.

LGU functionaries feel that in the spirit of decentralization they should have 'real power' to make important decisions relating to resources management. But the LGU code does not adequately provide it. Real power still remains at the centre. Forest and natural resources are optional areas for LGUs. As such, in most LGUs there is no forestry expertise or capability to deal with forestry matters. However, forest related issues often impinge on the life of the local people and their livelihood activities; but LGUs are in most cases unable to intervene. The view was expressed that, often, central government institutions handover burdensome tasks and low value resources to LGUs, and keep the attractive activities and resources for themselves. People's Organisations also have similar problems. The CBFM committees and the National CBFM Federation are yet ineffective, paper bodies.

2.11.3.3.4 POs and NGOs

By administrative fiat, the collaboration between POs and NGOs has been set up for their mutual strengthening and capacity-building. Foremost among these fiats are:

- DAO 93-22 (1993) providing revised guidelines for CFP by specifying that local communities can participate in CFP and be granted long term tenures over their assigned areas only after they have organized themselves into a PO
- The same DAO 93-22 specified that “no CFP project shall be approved for implementation unless a competent and credible assisting organization (NGO) has signified its commitment to assist the project; and the recognized leaders in the community have accepted the NGO”.

According to SUSTEC (2001) the situation shows that existing policies designed to strengthen and support institutions are seemingly sufficient, and responsibility for less than satisfactory performance may lie in the institutions themselves rather than in the enabling policies that govern their functions.

POs, being newly established, have little experience with rigid structural frameworks and often rebel against regulated behaviour. Being inexperienced as “team players”, they often give up at the first sign of problems, resulting in frequent disintegration of POs and failure to achieve their objectives.

POs usually have sufficient members with potentials for CBFM project implementation. However, despite their experience in subsistence farming, they often lack skills that suit the new CBFM projects and, thus, could not be effective partners in implementation without proper training in community organizing, enterprise management, values formation, and agroforestry techniques

NGOs have idealistic youthful members with training, usually up to the university level, but are generally deficient in CBFM field experience, particularly on the technical side of the project. Thus, they often encounter difficulties during the initial stages in providing technical assistance to POs that are implementing CBFM projects.

Some of the national NGOs involved in forestry in Philippines, among others, are Tanggol Kalikasan, Philippines Association for Inter Cultural Development (PAFID), HARIBON and environmental Science for Social Change.

2.11.3.3.5 Inter-sectoral and inter-agency co-ordination

Most officials confirmed that inter-sectoral / inter-agency cooperation is complicated due to considerable overlap of functions and responsibilities and jurisdictional uncertainties. There are multiplicity of agencies (Agriculture, Fishery, Mining, NCIP, BOI, NEDA etc.) linked to management and control of forest land, and financing of forestry activities. There are overlaps in the authority for deciding land claims, granting land rights, managing range lands and fishing grounds, managing of watershed areas, and controlling ancestral lands. Boundaries of responsibility are often left vague, with wide areas of inter-face; and, animosities develop in the name of turf-guarding.

Development activities also suffer because of disputes. There are protected areas within ancestral lands, all types of landuses in watersheds, and cultivation and encroachment in PAs. Forests are cleared for several “development” purposes (infrastructure development, settlement of displaced persons, establishment of parks and public amenities), but there are no joint efforts to manage such deforestation in a planned manner, e.g. through compensatory tree planting. These problems are to be addressed in a co-ordinated manner.

Agriculture and forestry are complementary to each other. Good forestry supports good agriculture and *vice versa*. But co-ordinated efforts to capture this complementarity hardly exists. There is no comprehensive and collaborative strategy between forestry and animal husbandry sectors for management of grazing and fodder production. Similarly, departments working on rural amenities are poorly linked to DENR offices and their plans are not developed in coordination. This situation needs improvement. Improvement is required not just at the top level, but also (and more so) at the field level, where the impact will be significant.

Substantial differences exist in the policy thrusts, priorities and approaches of DENR and LGUs relating to management and utilisation of forests; and that leads to weaknesses in DENR/LGU collaboration.

2.11.3.4 Weaknesses of Forestry Institutions

DENR, being a huge, decentralized (partially), national organization, is spread out over the entire country, with the national HQ at the apex and the lowest levels (CENROs) at the base of the structural triangle. Its huge size, its bureaucratic “through proper channel” style of communications, the limited powers delegated to lower echelons, and the widely scattered field units over the whole archipelago are such that:

- decisions at the top and implementation on the ground are often separated by considerable time lags;
- feedback from below about field activities reach HQ only after long time delays, thereby impeding quick managerial decisions;
- constant monitoring and evaluation (M&E) of project progress are extremely difficult to undertake.

Field staff suffer constraints and problems in conducting operations falling under the mandate of DENR, due to lack of necessary specific skills, resources and facilities. Since FMB is a staff bureau, contacts between DENR field staff and FMB are of indirect nature and not conducive for direct professional support. Responsibility for forestry is so diffused that one can easily point finger at another for dereliction.

DENR does not have adequate staff in the field to service the needs of the forestry sector. Further, the field staff do not receive any special incentives for the arduous nature of the work of protecting and managing the forests. Low level of salary is a disincentive.

The integration of DENR activities at the field level, however, did not result in the integration of approaches to field concerns. Operations still continue along sectoral lines. Likewise, staff bureaus are not properly utilized. There are often local level conflicts of various nature between DENR functionaries and LGUs; some times with the technical and operational units with in the same office. LGUs also feel that not enough decentralization has been made.

It may seem easier to manage LGUs because they are smaller and have shorter lines of communication. Decisions can be made, transmitted to lower staff, and implemented on the ground relatively quickly. However, their organisational structure is often rendered less effective by short-sighted “tinkering” by elected political leaders facing very short tenures of office. Furthermore, the organisation is often weakened by undue political interference in the placement of qualified people within the structural framework. Resources available to LGUs are also limited. Often, vested interests come to play, especially in matters such as boundary delineation, issue of permits and licenses etc. Decentralisation without adequate planning and preparation and resources cannot be effective (SUSTEC, 2001).

Devolution of functions and limited delegation of powers to the field offices of DENR, strictly does not amount to democratic decentralization. Democratic decentralization happens through empowering elected bodies and people’s organizations. There is also need to establish stronger partnership with POs and NGOs. Involvement of the private sector, the people and the community, in spite sympathetic statements in that regard is still far from adequate.

Weaknesses of the institutions related to forestry are further reflected in the following:

- The narrow skill base: The skills available are essentially related to general forestry and traditional silviculture. New skills required for forestry development, such as forest genetics, bio-chemistry, bio-technology, remote sensing, ethno-botany, NWFPs, economic planning, communication methodology, data management and marketing are astoundingly weak.
- The norms for human resource development and utilisation such as skill needs and training needs analysis, workload distribution, alternative career paths, incentive systems, vertical and horizontal mobility are hardly applied in personnel management.
- The Government agencies have a command structure, with only limited devolution of decision powers. An important factor which stifles initiative and effectiveness of an organization is lack of delegation of adequate power and authority. Previously, when a bureaucracy was small and activities limited, delegation of power was not a serious issue. There were hardly any delays; and

in emergencies use of discretion and a mechanism of automatic ratification were in vogue. As bureaucracies grow larger, delegation becomes key to efficiency.

- Multiple roles of agencies, structural rigidity, inflexibility of rules and regulations, lack of development orientation are factors adding to institutional weaknesses. These are often exacerbated by inadequate arrangements for inter-sectoral co-ordination, and in some cases inter-bureau (e.g. PAWB/FMB), inter-institutional (e.g. DENR and the independent ENR Office of the Muslim Region of Mindanao) and inter-regional conflicts.

An important principle of institutional development is that the **policy decides (creates) the organizational structure required for its implementation**. But a dangerous tendency is often seen where the organisation tend to formulate policies on *ad hoc* basis (and change them frequently) to suit its structure and interests. Moreover, the change of senior officials (down to the level of Assistant Director) with every change in administration results in loss of institutional memory leading to a continuous/repeating exercise of “inventing the wheel”.

Compared to most other countries of the world (and in the background of UNCED Forest Principles, and the UNCSD/IFF/UNFF highlighting the need for awareness about and priority for forestry and SFM), forestry sector and its role in Philippines is somewhat muted. A functionary designated exclusively in charge of forestry in the DENR is only at the 4th level; and it is furthermore submerged in the ENROs. Many (even insiders) tend to question the effectiveness of FMB in positively influencing SFM in the country.

2.11.3.5 Planning and Programming for Forestry

Plans are an important vehicle for implementing policies, through appropriate programmes and projects. Normally, long-term perspective plans develop a long term programme structure and targets to reflect the policy proposals. Implementation is based on medium term (4/5 years) and annual operational plans which represent time slices of the long term plan and provide operational details and strategies.

2.11.3.6 National Forestation Programme

In the past, Philippines had taken up several programs to control deforestation and to carry out afforestation/ reforestation, components and details of which kept changing. As a result, program objectives were not fully achieved. For example, the Integrated Social Forestry Program was launched by the Government in 1982, integrating some of the earlier programs. The Integrated Social Forestry Program aimed at providing sustainable living conditions for the forest inhabitants and occupants through participation in the process of conservation and redevelopment of forests. Components of this program was later merged into the National Forestation Program.

It was in 1986 that the government launched a 14-year (1987-2000) National Forestation Program (NFP). To implement the NFP, the Forestry Sector Program loan was approved and granted on June 28, 1988. Funds to support the program were provided by the loans from the Asian Development Bank (ADB) and the Overseas Economic Cooperation Fund (OECF), amounting to US\$240 million. The Philippine Government provided regular appropriation equivalent to about US\$43 million as counterpart fund. The FSP and a follow-up ADB loan had later to be reduced in size, considering the realities of the situation in the field and for other reasons.

2.11.3.7 Master Plan for Forestry Development

As part of ADB support to Philippines, and through an ADB/FINNIDA technical assistance, Master Plan for Forestry Development in Philippines was formulated in 1990, to support long-term SFM and to establish a comprehensive system of planning and implementation in the forestry sector. The MPFD was structured with 3 major programs, 15 programs and 51 sub-programs, and a time horizon of 25 years. The MPFD had targeted approximately one million hectares of residual logged-over forest for management under the Community Forestry Program over a period of 25 years. This program aimed to involve local

communities in the management of the forest resource and to encourage the large companies to focus more on processing of the products produced by the community projects.

The MPFD, which was launched with much fanfare was not properly implemented. The MPFD program structure was also not followed through. Programs and projects were implemented in an unstable sectoral and cross sectoral policy environment. Design errors led to implementation problems; and in many cases there were lack of site/site complementarity. Local level plans were not properly linked to the national level plan. Only a few local government units have developed and got approval for their Comprehensive Land Use Plans (CLUPs). And, only very few have knowledge on how to incorporate Forest Land Use Plans within such CLUPs.

Moreover, the DENR's 25 year Strategic Action Plan for CBFM (1995) became the master plan for implementing CBFM-related activities. Thus, the attempt to have a long term balanced programming approach as propounded in the MPFD did not strike root in Philippines.

A rational program structure for forestry development facilitates categorization of activities based on an appropriate common denominator, helps to analyse trends and monitor long term impacts, provides information (including of costs and benefits) for realistic planning and follow up, ensures continuity and supports SFM. By not properly implementing the MPFD, all these benefits are also lost.

The erstwhile *ad hoc* system of planning is being continued, under which the forestry plan (Annual Operational Plan) is absorbed into the DENR Annual Plan, which in effect is defined and decided by NEDA, within the Medium Term Development Plan, and based on resources available. MPFD obviously is not owned by NEDA.

There is no effective system of "managing" the implementation of forestry plans. Activities are undertaken at various levels (and also by different institutions) and it is difficult to get a total picture of all forestry activities. Projects (foreign-assisted and special) have separate staff / teams, generally, for the entire duration of the project. There is over-dependence on donor support for projects (often, projects are initiated by donors), and most of them are undertaken on an *ad-hoc* basis - not within the framework of a long-term plan. Therefore, there is also no consistent approach for forestry development. Post project maintenance is mostly neglected. This is particularly serious in respect of afforestation programmes, where survival and growth beyond the project period is important.

2.11.3.8 ENR Shell

Currently a new effort, supported by UNDP, is underway to prepare a framework (ENR Shell) for development of environment and natural resources, specifying vision, mission, objectives and programmes, and this exercise includes forestry as well. Since there are other similar / overlapping activities going on, several formulations of programme listing are available. One such listing of forestry activities / programmes is given below:

- Creation of economic opportunities and jobs
- Forest as source of water, food, medicine and shelter
- Global warming and climate change reduction
- Forests to care for the cultural and recreational values
- Forests to protect and increase biodiversity
- Education and extension services
- Cross-cutting concerns

2.11.3.9 Planning Responsibility

Planning function in DENR is under the office of Under Secretary for Policy and Planning and is headed by the Director of Planning and Policy Studies Service, covering three board areas, i.e. policy studies, planning and economic affairs. The Service is composed of Divisions dealing with: policy and programming; project development and evaluation; policy formulation; policy review and analysis;

management information system; statistical coordination; environmental and natural resources economics. The structure tend to change with change of incumbents in the Service.

2.11.3.10 Mobilisation of Funds

An important strategy to implement a plan/programme is to mobilize the required funds. Depending on the circumstances, the sources can be several – public and private of both domestic and foreign origin (i.e. domestic public, domestic private, foreign public and foreign private).

Details are not readily available on funding by sources and activities. While logging and wood processing are essentially private sector activities, there is heavy dependence on foreign assistance (loans and grants) and on domestic public sources for forest resource development, community based activities, research and infrastructure development.

Forest Revenue

The main domestic public source of fund mobilization is the charges on timber and other products from forests. As per RA 7161 of 1991 charges shall be collected on each cubic meter of timber cut in forestland, at twenty-five percent (25%) of the actual FOB market price based on species and grading. In the case of pulpwood and matchwood cut in forest land, forest charges on each cubic meter shall be ten percent (10%) of the actual FOB market price.

These forest charges shall be applied to naturally growing timber, and forest products gathered within public forestlands, alienable and disposable lands and private lands. Planted trees and other forest products harvested from industrial tree plantations and private land covered by existing land titles or by approved land applications are exempted from payment of forest charges .

FOB market price survey is periodically done for the different species groups, separately for Luzon, Visayas and Mindanao. In the year 2000, the FOB market price for timber ranged from 950 pesos to 15,30 pesos per cum, depending on the species group and location. There is a general feeling that the rent collected as forest charges is low.

License fees for awarding rights to exploit/utilize forests are usually nominal amounts that do not reflect the land's real rental value. This contributes to the under-valuation of forests and forestland.

There is an absence of mechanisms to effectively capture the large economic rents accruing not only from harvests of timber and other forest products but also from the benefits and use of other forest values, such as watershed values, forest amenities, recreation, bio-diversity, carbon sequestration and such other global externalities. The valuable externalities could be converted into tangible benefits if these benefits could be evaluated, and appropriate share of rent captured. Innovative mechanisms and concepts such as carbon credit, CDM and different forms of tradable instruments are still under discussion/consideration. Related to this is the absence of appropriate market-based instruments and incentives.

Collection of special charges (cess, surcharges, tax) to mobilize funds for targeted activities such as reforestation, research, extension and so on is a normal practice adopted in several countries. Philippines used to have a special timber cess to support the Extension Office of UPLB.

Sources of Funding for Private Sector

The main sources of funds for the corporate sector are profits/savings and loans (national and international). Governments also support medium and large private firms investing in forest-based activities through investment promotion packages and incentives. However, for the small investor lack of access to funds becomes a problem. Micro financing and revolving fund facilities are limited.

There are stipulations that banks in Philippines should target 40% of loans for rural development and agro-industries and that 10% should be small and medium scale loans, as specified by the Central Bank. But this is hardly ever followed. And, the country continues to be afflicted by poverty, even after 50 years of poverty alleviation efforts.

According to some bankers, there is scope for mobilizing resources for forestry development in Philippines, if supported through appropriate and stable policies, by channeling small savings of local communities, tapping Philippine foreign workers remittances, involving private sector in a big way, seeking

venture capital for innovative/ scientific initiatives (e.g. bio-prospecting, bio- technology), and attracting green investors. A stable system of micro-finance and “Grameen-Bank-Type” micro-credit facilities can support CBFM and small-scale reforestation efforts. The system of Philippine Rural Banks may be relevant in this regard.

Forest Resource Accounting

There is serious distortion relating to forest’s contribution, in the national system of accounts. There is considerable amount of unrecorded production and use of timber, poles and fuel wood. Transactions relating to a number of NWFPs takes place outside the market. Others such as forest food, medicines, forest grazing and fodder, and eco-tourism benefits are credited to other sectors. And, no values are shown for global externalities. Thus, the real benefit and cost account of forests are not available, nor its asset value and net annual capital loss (or capital formation).

In view of the continuous deforestation and forest degradation, and the low level of investment in forestry, the situation in Philippines is one of annual net disinvestment or negative investment.

Development signifies net positive investment. Sustainability requires that formation of new capital equals the sum of rents from resource depletion and environmental damages. While investment refers to *real capital formation*, disinvestment signifies negative investment which can result from destruction or depletion of capital stock through capital consumption. Investment becomes real only where gross investment is greater than disinvestment resulting in a positive net investment. With respect to forestry, investment for sustainable development should be more than value of capital lost through deforestation or forest degradation. Deforestation, whether planned or unplanned, leading to destruction of forest capital is an evident case of disinvestment.

Several of the new concepts of forest valuation can help to enhance the importance of (and priority for) forestry. However, in spite of their usefulness, they are still only taking points in professional gatherings; and not part of action. For example, the need for natural resources accounting was being talked about, using arbitrary models, for over 15 years; but no action is seen taken to implement it, to the extent possible.

Foreign Assisted Projects

Philippines has been receiving substantial external assistance in the forestry sector. ODA is provided by a large number of donors – both multi lateral and bilateral, in the form of grants and loans. Major financial support came from multilateral donor agencies such as ADB, World Bank (WB), Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP). Bilateral donor agencies from countries such as Japan (JBIC), United States (USAID), the European Community (EU), Germany (GTZ and KfW), Canada (CIDA), Denmark (DANIDA) and Australia (AusAID) also made significant contributions. NGOs have also successfully tapped various donor sources and implemented forestry projects in the field (see Box. 4).

Of all the foreign assisted and special projects in the ENR field (area of interest of DENR), during 1978 to 1999, forestry related projects accounted for 30% (56 out of 193) in terms of number of projects and 70% in terms of foreign input of funds (US \$ 503 million out of US \$ 723 million).

Foreign assisted projects in forestry and natural resources management are implemented by DENR, other departments, special teams formed (on contract) for project implementation and NGOs.

In some cases NGOs are awarded projects and funds directly by donor agencies – since the department concerned lacks counterpart funds and the NGOs are able to provide it (e.g. implementation of Northern Sierra Madre Natural Park Conservation Project through the NGO PLAN). How will this influence the sustainability of project impact is vague. Since the projects are of limited duration, co-ordination and involvement of the (mandated) departments are extremely important. How it is ensured, and how these projects fit into the large sectoral canvas is not clear.

While forestry projects and programs are highly donor-dependent, the quantum of ODA has been falling, of late. The quantum of foreign assistance received in the forestry sector of Philippines fell from US \$ 346.1 million during the 10 year period 1980-1989 to US \$ 154.7 million during 1990-1999. Table 2.42 shows the foreign assisted and special projects relevant to the forestry sector

Table 2.42. Foreign Assisted and Special Projects Relevant to the Forestry Sector

<ul style="list-style-type: none">• Forestry Sector Project (in support of National Forestation Programme), 1988-1998, ADB/OECF• Forestry Sector Project, 1993-2000, ADB• Forestry Sector Project , 1993-2003, JBIC• Natural Resources Management Programme – Low Income Upland Communities Project, ADB• Cordillera Highland Agriculture Resource Management Project, Natural Resource Management Component (CHARM), 1997-2003, IFAD/ADB• Community Based Resource Management Project (CBRM), 1998-2003, World Bank• Regional Resources Management Project, WB/SECAL, World Bank• Environmental and Natural Resources Sectoral Adjustment Loan Program (ENR-SECAL), 1991-1999, IBRD• Technical Assistance for the Review of Forestry Policies vis-à-vis the Watershed and Ecosystem Management Framework and the CBFM Strategy and Programme (REPTA), World Bank.• Water Resources Development Project – A Component of Watershed Management Strategy and Program (WRDP), 1997-2002, WB/DANIDA• Natural Resources Management Program II – Forest Resources Management Component (NRMP-FRM), 1995-2002; USAID• The Philippine Environmental Governance Project (EcoGov), USAID• Debt Reduction for Tropical Forest Conservation Activities through Local NGOs. (TFCA), USA• Preparatory Technical Assistance For Community Based Forest Resources Management Project, 2000, ADB• ASEAN Regional Centre For Bio-Diversity Conservation (ARCBC), 1997-2004, EU• National Integrated Protected Areas Programme (NIPAP), 1995-2000, EU• Small Grants Programme for Operations to Promote Tropical Forests in Asia (Includes Philippines). EU/UNDP• Philippine-German Community Forestry Project – Quirino, 1992-2001, GTZ/KfW• Qurino Community Based Forestry Programme – A Debt For Nature Swap Initiative. 1998-2002: KfW• Philippine-Canada Environmental and Economic Management Project (PCEEMP), 1998-2002, CIDA• Conservation of Priority Protected Areas (CPPA), 1994-2001, GEF• Forest Rehabilitation In Philippines (?), Finland• Manpower Development, Australia• Utilisation, Collection and Trade of Tropical Non-Wood Products in Philippines, ITTO• Market Research and Market Information on NWFPs in Philippines, ITTO• Developing Tropical Forest Resources through Community Based Forest Management, ITTO• Development and Implementation of the Pilot Project on Information System, ITTO• ENR Framework; UNDP• MPFD Revision, UNDP• The Philippine Model Forest Approach for SFM, FAO• National Forest Resources Assessment in the Philippines, FAO• Development of Sohoton Natural Bridge National Park as an Ecological Destination, 1999-2000 (Special Project).• Establishment, Protection and Maintenance of 24 ha of Organic Agro-Forestry Farm in Sloping Lands, 2000-2004 (Special Project).• Ancestral Domain Management Program (Special Project).• Bukidnon Forests Inc, Malay Balay, Bukidnon, Mindanao, New Zealand.
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Conditionalities for ODA is getting tighter. Grant's share of ODA is further declining, and is given mostly for small, pilot demonstration projects, specific aspects of capacity building, policy revisions etc. Donors have been repeating that for financing national programs, funds are to be mobilized domestically, from private and public sources, and ODA (particularly grant funds) has to be used as a catalyst.

It has been observed that there is inadequate co-ordination among donors in channeling ODA for programs/projects in the various sectors. But the initiative and insistence for such co-ordination is to come from National Government thru NEDA. Often national/sectoral agencies independently exert pressure on donors for funds, and this can lead to skewed development.

In Philippine forestry, plan implementation is largely based on availability of donor funding, and not according to plan priority or sequence. How can this be rationalized within a coordinated framework, to ensure balanced development is a vexing issue. ADB (2000) has observed that in Philippines, MPFD was not followed up with a corresponding operational implementation plan, so it is merely a piece of paper, even though it has been approved by the President.

Implementation of forestry projects often ends up as ineffective without achieving the objectives, due to lack of long-term funding commitment. In the absence of any review and evaluation, to quote from a report, "there has been cases where a project has been followed up, after a lapse of time by a rehabilitation project because of lack of management or maintenance after the initial project phase."

Apart from the mix of bad policies, lack of continuity of policy from one Government to another (causing a lack of long-term vision and loss of good initiatives) is a matter of concern. This break in continuity causes uncertainties and delays in programme / project implementation. And, 'after foreign-assisted project expires, what?' is another vexing issue. Impact of a good project gets lost, if not properly followed up.

Also, projects fail due to lack of counterpart funds, lack of community involvement, frequent change of staff and other reasons. Often, donors get wary, and wait for policy rationalization.

2.11.3.11 Problems and constraints in forestry planning

In the area of planning, programming and budgeting (including fund mobilization), paths of development planning in forestry does not serve public interest, as an analysis done for "ENR Shell" shows. Related problems and constraints among others, are the following:

- Adequate knowledge base for effective and efficient forestry planning and management of projects is lacking.
- Haphazard programming, and frequent changes in programme design, is not conducive to obtain stakeholder's interest and commitment for SFM.
- Decisions and recommendations of projects are often ignored or implementation inordinately delayed. A 1948 decision for boundary demarcation between Aurora and Quirino is not yet on the ground.
- While the foreign assisted projects have crucial components for supporting SFM such as inventory, mapping, boundary delineation, institutional strengthening etc., etc., there are hardly any arrangements to carry them forward, beyond the project period.
- There is also lack of donor co-ordination and distortion of project priorities caused due to donor preferences.
- While concentrating on the "visible" aspects of programmes (e.g. CBFM), the important support activities such as R&D, human resource development and extension are often ignored.
- Weaknesses of forest revenue system and need to strengthen rent-capturing capability.

2.11.4 Human Resource Situation in the Forestry Sector

All those who are engaged, full time or part time, in forestry related activities are part of the human resource of the sector. No statistical information is available on the overall human resources situation in the sector covering public and private sectors, educational and research institutions, trading establishments, consultants and service providers and small scale forestry operators. Whatever information there is, is about

the personnel under the DENR. Breakdown of that information updated by gender, skill classes, salary levels, age groups, specializations etc is also not readily available.

2.11.4.1 Personnel Situation in DENR

As of June 2002, the manpower complement of personnel was 23,371 composed of permanent, temporary, co-terminus, casual and contractual categories. 1,544 positions were unfilled, making up a total approved strength of 24,915.

The distribution of approved staff strength of 24,915 was: field staff: 20,257, headquarters: 4,658. By function, the distribution was as follows:

Administration:	7,148
Research:	800
Environment and PA :	1,872
Forest Management :	9,214
Lands Management :	4,846
Mines Management :	1,035

Of the complement of staff in position (23,371) the number of males were 14,509 (62%) and females 8,862 (37%). At the DENR headquarters the ratio of male and female staff is 49:51.

Staff employed in Forestry Activities

The distribution of approved staff strength of 9,214 in forest management as in June 2002 was: field staff: 8,899 and FMB/ HQ staff; 315. Some 2,000 persons had training as foresters; of whom close to 50% are females.

In FMB the number of posts filled, comprising all categories was 267 of whom 122 (46%) were males and 145 (54%) females.

The educational attainment of the FMB staff excluding the contractual staff (267-19=248) were: Ph.D 5; Masters Degree 24; Masteral Units 47; College Graduate 114; College Under Graduate 39; High School Graduate 16; High School Under Graduate 1 and Elementary School Graduate 2. Of the total posts filled, some 140 are technical staff and the rest administrative support staff.

35 persons out of the 248 had more than 30 years of service; 96 persons between 21 and 30 years of service; 104 persons between 11 and 20 years and 13 persons below 10 years of service. Only one person was recruited during the last 5 years. By age categories: 17 persons are above 60 years of age; 51 persons between 51 and 60 years; 110 persons between 41 and 50 years; 66 persons between 31 and 40 years; and only 4 persons between 21 and 30 years.

HRM Service of DENR

The Human Resources Management Service is under the Office of the Assistant Secretary for Finance and Management Services. HRMS is headed by a Director, with a mandate to provide direction in major DENR-wide human resource development activities and supervision of all HRMS functions. In that regard the Director, HRMS is supported by four Divisions: Career Management; Management Development; Training Development; and ENR Academy. There are also HRD Chiefs attached to RENROs in the regions.

HRMS undertakes: training programmes (e.g. CBFM, ENR Laws, Revenue Management etc); fellowship programmes; and foreign and local scholarships. Other activities include manpower research (e.g: job satisfaction survey, life after training) and manpower profiling.

HRMS is badly constrained by lack of adequate funding, manpower and facilities. Therefore, it has not been possible to undertake workload and skill need analysis, studies on impact of incentives, vertical and horizontal mobility, career ladder etc. Low salary level in Philippines is considered as a major disincentive.

2.11.4.2 Education and Training

There are 47 forestry schools and 9 Regional Forestry Training Centres in the country. In fact, there has been a proliferation of forestry schools with 19 new schools added between 1990 and 2000. The MPFD had recommended rationalization and reduction of the number of schools to 14. On the other hand, against the recommendation to establish 70 provincial training centers, none has been established.

The quality of forestry education remains low and curricula is not appropriate to the current needs. Training needs of DENR, LGUs and POs are not adequately catered to. There is need for more refresher/ upgrading training for the regular staff of DENR. Capacitation of LOs, Communities (Village Foresters) and LGUs call for urgent attention. Deficiencies/inadequacies have been noted in educational facilities, faculty development, incentive system, skill needs assessment etc. The need for curriculum review and revision in forestry education/ training institutions, appropriate to the changing needs in the sector and related tasks (e.g. NWFP development, enterprise management, bio-diversity conservation, CBFM, information dissemination) is equally urgent. For more on the situation of human resource in forestry please see Dolom (2003).

2.11.4.3 Association of Professional Foresters

Society of Filipino Foresters (SFF) is a registered association established to promote high standards of professional integrity and commitment. So long as the public agencies and educational institutions were the main employers of forestry professionals, the overseeing role of the association was limited. With the increasing involvement of private sector, community institutions and business establishments in forestry development, SFF will have to ensure that professional ethics and integrity are not compromised.

2.11.4.4 Other Concerns

Some important concerns in the area of human resource development in forestry are these:

- At all levels, for the forestry sector as a whole, there is no system of human resource planning and management covering evaluation of tasks, workload analysis, job description, design of career path, upgrading of skills, work atmosphere, incentives, and so on; and, there is universal need for capacity building.
- For routine/regular forestry activities, availability of skills and other resources at all levels is not consistent with the needs.
- Lack of an efficient data/information system with facilities for updating and retrieval is another one among several deficiencies.
- Low salary is a serious disincentive in establishing transparency and accountability.
- There is need for attitudinal enhancement, improving efficiency, increasing commitment and creating real awareness in the field of forestry.
- There is need to revamp the curricula for forestry education and training to meet the current concerns relating to nature conservation, eco-system management, management of NWFPs and forest based services, community empowerment and so on.

2.11.5 Forestry Research

Forestry is a scientific discipline and a profession, Continuous and sustainable development of forestry would depend on research inputs in crucial areas, solving problems and expanding horizons of knowledge

In the early part of this century, forestry research concentrated on botany, taxonomy, phenology, silviculture, logging and wood utilization. Some of the publications based on this early research, are still the authoritative sources of information available in these fields.

Scope of forestry research covers not only biological and technological aspects (forestry, forest products, conservation, wildlife), but also the wider spectrum of economic research, sociological research and policy research.

Research on all aspects of forestry (scientific, technological, economic, social environmental, and institutional) is an essential need to keep dynamism of the sector and to support development. Research and technology are prime forces helping to expand the development horizon. New research breakthroughs help to positively alter the outlook of the sector.

Ecosystems Research and Development Bureau (under DENR), Forest Products Research and Development Institute (under the Department of Science and Technology), Forest Development Centre (in the UPLB College of Forestry and Natural Resources), and Institute for Small Scale Industries (in the University of the Philippines in Diliman) are some of the institutions conducting R & D activities related to forestry. Institutions under PCARRD also carries out research in agro-forestry. ASEAN Regional Centre for Bio-diversity Conservation located in Laguna also is conducting research projects in Philippines. The mission of these institutions highlights the importance of R & D in solving the crippling problems in their respective areas of research.

2.11.5.1 Eco-systems Research and Development Bureau

Under Executive Order 192, the ERDB was created primarily to “formulate and recommend an integrated research program relating to Philippine ecosystems and natural resources as holistic and interdisciplinary fields of inquiry”. The scope of the ERDB’s mandates covers the following:

- Formulates and recommends an integrated research and development program relating to Philippine ecosystems and natural resources such as minerals, lands, forests, as holistic and interdisciplinary fields of inquiry.
- Assists the Secretary, DENR in determining a system of priorities for the allocation of resources to various technological research programmes of the department;
- Provides technical assistance in the regional implementation and monitoring of the aforementioned research programs;
- Generates technologies and provides scientific assistance in the research and development of technologies relevant to the sustainable uses of Philippine ecosystems and natural resources; and
- Assists the Secretary in the evaluation of the effectiveness of the implementation of the integrated research program.

While the ERDB is attached to the DENR, it also works closely with the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD). Principally, PCARRD provides oversight functions for all research activities and institutions in the agriculture, forestry and natural resources sector. To serve as guide for its research thrust and directions, every five years ERDB updates the ENR Research and Development Framework, which subsequently serves as an input to the Medium Term Development Plan.

The Environment and Natural Resources Research and Development Framework 1997-2001 of ERDB has divided its current research activities into five Ecosystems R & D Framework, namely:

- Forest Ecosystem R & D Framework
- Upland Farms Ecosystem R & D Framework
- Grassland and Degraded Areas Ecosystem R & D Framework
- Coastal Zone and Freshwater Ecosystem R & D Framework
- Urban Ecosystem R & D Framework

In addition, there is a programme on technology transfer and human resources needs. Interestingly the R & D framework of ERDB does not recognize the existence of MPFD. Given the scope of the R & D agenda, ERDB also collaborates with the Protected Areas and Wildlife Bureau (PAWB), and the Forest

Management Bureau (FMB) in the conduct of its researches. The two other Bureaus have also some research functions pertaining to their respective jurisdictions and close linkage is necessary.

2.11.5.2 Forest Products Research and Development Institute

FPRDI located in College, Laguna is under the Department of Science and Technology (DOST). The scope of FPRDI covers use of wood in housing and construction, wood and rattan furniture and handicrafts, chemical products from forests, and pulp and paper. Some of the current research activities of FPRDI are: stress grading of timber, codes and standards, bamboo utilization, hand made paper, utilization of NWFPs and improved tools and techniques.

2.11.5.3 Forest Development Center

FDC was established at the College of Forestry and Natural Resources, UPLB in 1978 by virtue of PD 1559 and became operational in 1981. The mandate of FDC is to conduct basic policy research and develop (or help develop) an effective machinery for forest policy formulation and implementation. The Center conducts consultations and workshops on major forestry and environment policy issues of national significance. It sponsored and spearheaded several stakeholders discussions on watershed management the results of which led to the recognition of the WEM approach to landuse planning and management of forest resources.

2.11.5.4 Institute for Small Scale Industries of the UP

ISSI essentially serves small scale enterprises through providing management courses, industrial extension, entrepreneurship support, community-based enterprises, customized programmes development, micro enterprises for upland farmers and so on. The Small Enterprises Research and Development Foundation Inc works in collaboration with ISSI.

2.11.5.5 ASEAN Institute of Bio-diversity Conservation

The Regional Institute based in Los Banos conducts studies in ASEAN countries (including Philippines), among others, on bio-loss in land fragmentation process, habitat restoration, fire prone trees in plantations, heritage parks and a host of other relevant topics.

2.11.5.6 Others

Some universities, NGOs and private companies also conduct research relevant for forestry development.

2.11.5.7 R & D Constraints

Forestry research in Philippines is constrained by several factors:

- Research activities of most research outfits are hampered by lack of funds, facilities and adequate number of trained scientific personnel, particularly those trained in research methodology.
- In many cases the research endeavours are multi – and inter-disciplinary concerns, and the challenge is to bring together the key players to work together towards a common goal. It is also difficult to get the willing support and collaboration of field staff.
- Research projects are not favourites of donor community.
- Forestry research agenda does not adequately address the needs, concerns and priorities of the rural and upland communities relating to mixed farming, agro-forestry and product marketing. There is need to bring R&D to targeted communities.
- There has hardly been any significant break-throughs in forestry research, for the last several years, to support SFM.

- Forestry research lack client participation in problem identification, task orientation, participatory field research and adequate linkage with extension.
- There is often, lack of incentives for researches – not only financial, but also lack of recognition, isolation, indifference of practicing foresters to the work of researches and administrative hassles to obtain approval and resources.
- Even where there are worthwhile research outputs and related publications, there is little evidence of R&D filtering down to users – either due to disinterest or lack of dissemination.

The research activities of the two prime forestry-related research institutions in the country, ERDB and FPRDI particularly are plagued by several problems : lack of funds (with no timber cess targeted for research) and research facilities; lack of priority because of the long-term nature of research; lack of clear and adequate linkage with field agencies and extension; inadequate participation of (and coordination with) clients/practitioners; lack of a long term research master plan identifying resources and assigning responsibilities; bureaucratization of research; lack of inter-institutional linkages and duplication of efforts; lack of adequate problem analysis leading to irrelevancy/inadequacy of research and so on. Even the interesting research findings are, often, not translated into implementable technology. Adaptive research and instrumentation, often, are a missing link in relating research to real life situation. There should be greater complementarity of the research and development activities of these two institutions since one delves with the production of forest product while the other concentrates on the utilization of these products. This complementarity seems to be lacking.

2.11.5.6 Forestry Extension

The purpose of extension, is to extend, reach out or spread knowledge, technology and benefits to rural communities. Depending on circumstances, extension as a vehicle of rural development can involve: information dissemination; technology transfer (linking lab to land); packaging research results into implementable systems; delivery of inputs (seeds, seedlings, fertilizer); provision of advice regarding marketing and price information. A national forestry extension programme normally covers: forest protection; land and water conservation, agro-forestry, rationalization of shifting cultivation, greening campaigns, and forestry information. Since an important target of forestry extension is to expand tree planting, information being sought by farmers would cover a broad range – choice of species, information on best species, their uses, how to plant and nurture, possible inter crops, expected yields, marketing options, potential for value adding and so on. This would require backup research for different agro-ecological zones. Along with technology transfer, communication and conflict resolution are important aspects of extension. Involvement of media networks, exhibitions, competitions and other promotional activities can assist in making extension more effective.

2.11.5.6.1 Some constraints

Overall, in Philippines the system of information, extension and communication in the forestry sector is weak. Some of the major constraints in developing a system of forest extension which benefits farmers and homestead owners arise from the fact that: the extension workers have inadequate knowledge of agro-forestry systems in different ecological zones; the forestry personnel often lack knowledge of indigenous technology and farming systems and field staff lack motivation. The resources needed for support services and, in particular, the provision of incentives are always inadequate. There is a dearth of locally produced publicity, motivational and training materials including audio-visual aids and software; and small land holders look for an extension worker who recognizes their operational scale and particular crop needs. Lack of women extension workers and change-agents, inadequate involvement of NGOs, lack of coordination at various levels of research and extension, conflicting roles of field functionaries (policing vs. extension), and lack of a forest information system to support forestry extension are other constraints in forestry extension.

If we are to move into an era of meaningful people's participation in forestry, there is an imperative need to develop a strong forestry extension system supported by strong delivery and receiving mechanisms and logistics. It is necessary to establish a system for coordinating the training and extension activities of different forestry sub-sectors with emphasis focused on the capacitation of communities and LGUs.

2.11.5.7 Monitoring and Evaluation

Monitoring and evaluation (M&E) are two closely linked steps of an activity or process meant to promote accountability for achieving expected results from a policy, plan, programme, project or activity. Monitoring and evaluation should be carried out at all these levels as a continuous process, for providing correctional measures. Making policies and failing to act on them is a serious default, and can have a negative impact on the entire policy field. At the activity level, performance evaluation can identify inadequacies. There are instances where performance evaluation has clearly identified management inefficiency and financial loss.

Performance audits, M&E and periodical assessments are an essential aspect of post-planning process to check on the adherence to the plan, to identify difficulties encountered and to make necessary corrective measures or modifications.

Even well prepared plans often go wrong due to lack of necessary co-ordination (vertical and horizontal), causing weak links or even broken links, resulting in poor performance and often, negative results. Active co-ordination at, and between, various levels – international, national and local, involving funding sources, technical assistance agencies, trade and marketing institutions, planning and administrative bodies, private enterprises, NGOs, local organizations and community representatives is an essential part of plan implementation process, involving M&E.

A clear set of criteria and indicators for the different types of forests/forestry and systems of management can serve as very useful tools for conducting M&E.

2.11.6 Summary of Institutional Situation

The forestry related policy and institutions/instruments in Philippines have not been stable, characterized by frequent changes. What is written as policy is meant to be practiced; and policies are to be changed only for very valid reasons. Moreover, policy, for a common person, is what is practiced, not what is written on a paper. If policies as written are not practiced, then by reflection what is practiced becomes policy. That is how in many situations/ countries the "real" policy is one of tolerating illegal activities and corruption, not in forestry alone, but in most sectors.

Therefore, there is no point in saying that "the policies are good, but the problem is in poor implementation". Institutional efficiency is in practicing what is preached.

Organisational structure and mission, legal instruments (rules and regulations) and plans and programmes are strategic elements in implementing a policy. When these elements fail to achieve the policy objectives, the clear indications, often, are that these strategic elements need changes (modification, re-orientation or replacement). There may also be the need to change, clarify and/or re-iterate the policies. That seems to be the situation, now in the Philippines.

It is not the dearth of statements of vision, mission, principles and objectives which have led to the present situation of forest loss and degraded eco-systems; it is their non-observance and lack of commitment to them. The questions before us are several. If institutions have a clear mission in which all believes, how does conflicts arise? Do they offer scope for hidden agenda? If forestry is as important as is claimed, why is it that it gets so little attention? What kind of institutions and incentives will help ensure stability/progress of forestry in Philippines? What role is to be played by FMB/DENR and how that role can be made effective?

As stated in an ADB Policy document, there is a clear distinction between functions that only governments should and can perform as the "forest authority" (including policy and strategic planning,

creating an appropriate regulatory framework, and monitoring sector performance), and those where government involvement is not essential, and may even be counter-productive, such as day-to-day forest management. The principal role of Government in forestry should be the development of forest policy that provides medium to long term vision for the sector, in which poverty reduction, social development and environmental protection are well integrated taking into account the funding required and other incentives necessary to ensure implementation of such policy.

It is necessary to acknowledge the desirability of a more pronounced role for the private sector and community in resource mobilization, and their investments in the forest sector, and to address sources of conflict between stakeholders over issues such as rights to land, and access to resources. Thus far, there has been insufficient availability of reliable information necessary to improve transparency, and enable stakeholders to participate in constructive dialogue (ADB 2002b).

All these call for a capacity building of a different nature, requiring attitudinal adjustments and bureaucratic re-orientation.

2.11.7 Policy and Institutional Problems, Constraints and Issues

- **Inadequate Awareness On The Sector**

Forestry is perceived by many as marginal activity and often misinterpreted as wood production. Only the value of wood (timber and fuelwood) is considered in comparing the value of forest land against the possible agriculture output from it. The multiple roles of trees and forests in: alleviating problems like food insecurity, environmental degradation, and rural energy crises and unemployment; mitigating climatic changes; serving as carbon sink; supporting nutritional well-being; maintaining the integrity of watersheds; providing such essential products as herbal medicines, essential oils, phytochemicals, gums, resins, oils, dyes and colorants are not often understood. As a result of low awareness, policy reforms in the forestry sector have been slow, often lagging behind reforms of national macro-policies. Forest policies lack transparency and a progressive approach for development, involving people. Forest policies in most cases are general statements of intentions without clear imperatives and quantified objectives; nor are they properly formed, articulated and formulated through legislative processes – unlike major national economic policies. In the absence of clear objectives, important distortions derive from differences that exist between public and private perspectives on forest products.

- **Inadequacies of Forestry Sector Policies**

- Lack of a comprehensive, balanced and legislated policy covering the entire forestry sector.
- Lack of a comprehensive landuse and classification policy, and its influence of forestry and forest policies.
- Policy weaknesses in forestry, ranging from gaps, irrelevancies, inappropriateness and difficulty to implement.
- Frequent and arbitrary changes of policies, (with every change of government), mostly made at the DENR level.
- Conflicts with policies of other related sectors.
- Impractical nature of some policy provisions (e.g. 18% slope criterion for distinguishing A & D and forest lands).
- Vagueness and unclear nature of some policy components (their objectives, strategies) leading to confusions and distortions.
- Inconsistencies among some of the sectoral policies (e.g. production sharing for FLMA and no mention of production sharing in CBFMA).
- Changing priorities and/or neglect of policy provisions.
- Inadequate institutional and political commitment to implement important policies relating to SFM.

- **Inadequacies of Legal Instruments**
 - Non-implementation of several DAOs, e.g. DAO 23 of 92 regarding implementation of MPFD.
 - Flaws in the legal basis for tenurial instruments such as defective inventory reports, provision for automatic conversion of TLA into IFMA, lack of uniform guidelines regarding government share, bank loans etc.
 - Conflicts regarding bureaucratic jurisdictions, e.g. of DENR and Agriculture Department on grazing land.
 - Inhibitory nature of several regulations e.g. those relating to removal of timber from private land, and those affecting the proper management of proclaimed water sheds.
 - Proliferation of IRRs and other legal instruments, some of them ambiguous and contradictory, such that it is difficult to know what is legal or otherwise. And , many rules tend to have holes.
 - Need for a working code with current/updated laws, rules and regulations easily accessible to all interested persons.
 - Internal inconsistencies found in certain laws, rules and regulations.
 - Long/frustrating procedures for legal compliance, opening up avenues for 'speed money' and corruption.

- **Weaknesses of Organisational Structure of PFA**
 - Vague and unclear mission.
 - Lack of adequate financial resources, facilities and competent manpower.
 - Bureaucratic inertia; inadequate incentives (poor salary ?) and recognition.
 - Administration based on expediency not efficiency; administration by regulation and bureaucratic orientation of command and control.
 - Instances (increasing?) of dishonest practices of bribery and corruption.
 - Inadequate ability to organize and manage developmental action.
 - Weak capability, particularly in specialized areas (e.g. planning, NWFPs) and interface areas with other sectors.
 - Functionaries do not have the appropriate mobility and ability for communication.
 - Weak coordination and collaboration with institutions of other related sectors, and inter-organizational conflicts.
 - Organizations are perceived as creations of policies (for policy implementation); but policies and policy thrusts are, often, moulded by the organizations to suit their orientation.
 - Conflicting functions of PFA/DENR – i.e authority function to enforce laws, rules and regulations, and development/enterprise function for enabling/facilitating establishment of forestry enterprises, people's involvement, private sector participation and environmental initiatives.
 - Loss of institutional memory (and experience) due to changes in the top five levels of the Philippine Civil Service right down to the level of Assistant Director, in about every 5 years.
 - Lack of coordination among different Bureaus of DENR and different divisions /units within Bureaus; lack of cooperation between field staff and HQ staff.; lack of (or inadequate) DENR-LGU partnerships; overlapping (and unclear) jurisdictions; lack of adequate mechanisms to ensure institutional effectiveness.

- **Funding Uncertainties**
 - Inadequate allocation of public funds through national bureaucratic mechanism; over dependence on donor assistance.
 - Delays in fund allocation from Government sources.
 - Weaknesses in fund mobilization from domestic and external sources.
 - Lack of adequate enthusiasm on the part of private sector to invest in forest resource development, due to unstable policy environment.
 - Adequate information nor forthcoming to satisfy the private institutional investors.
 - Inability to adequately involve the national banks, particularly the rural banks, to finance forestry development.

- Lack of micro-credit facilities.
- **Hurdles for Private Sector Participation**
 - Stifling rules and regulations and procedures.
 - Land tenure uncertainties.
 - Long gestation period of forestry enterprises; consideration of time preference.
 - Prevalence of illegal operations which make it difficult for honest entrepreneurs to survive.
 - Policy on CBFM tends to discriminate against (rather than enabling meaningful) collaboration of communities with private enterprises.