FORAGE AND PASTURE INDUSTRY IN THE PHILIPPINES

by
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Background information

- Forage and Pasture as one of the weakest sub-sector of Agriculture
- Less priority area despite of known importance in animal production
- Forest Law of 1919 recognize the importance of pasture crops
- Low adoption of technologies
- Few Pasture areas developed

Figure 1. Physical Map of the Philippines

Location

- 1,839 km north-to-south off the southeast coast of Asia.
- located between 4º and 21º north latitude and 116º and 127º east longitude.
- three large bodies of water: on the west and north by the South China Sea, on the east by the Pacific Ocean, and on the south by the Celebes Sea and the coastal waters of Borneo
- total area of 300,000 square kilometers consisting of 7,107 islands

Figure 2. Land Classification (FMB 1997)

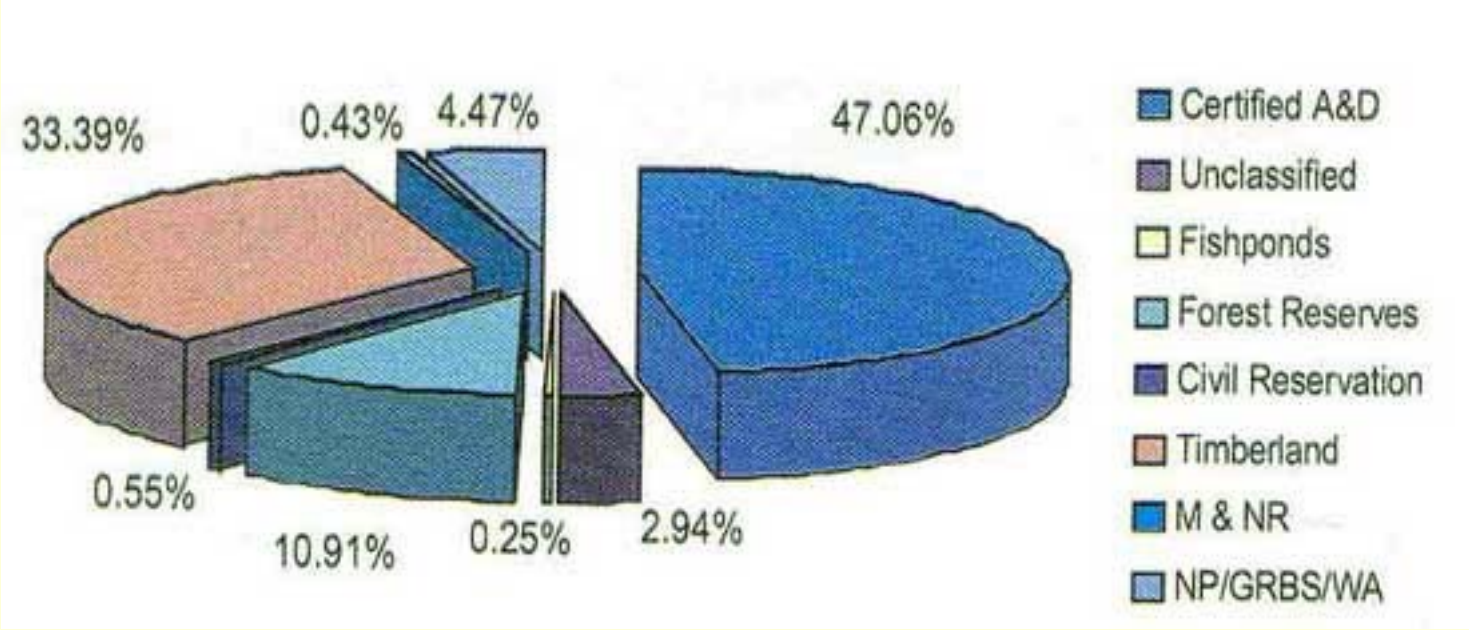


Table 1. Land Utilization in the Philippines (NLUC 1996)

Land Use	Area (ha)	Percentage
Agriculture	9,728,800	32.95
Forestry	19,062.600	64.56
Settlement	131,400	0.44
Mining and Quarrying	8,700	0.029
Inland Fisheries	595,700	2.02
Open Land	1,100	0.004
Total	29,528,300	100.00

The Farming Sector

Table 2. Farm size and classification, BAS 2004

(in million hectares)

ITEM	1971	1980	1991
Total Area	8.4	9.7	10.0
Temporary Crops	3.8	4.3	5.3
Idle	0.7	0.8	0.1
Permanent Crops	2.5	3.5	4.2
Meadows and Pastures	0.6	0.5	0.1
Covered Forest Brown	0.4	0.3	0.1
All Other Lands	0.1	0.1	0.1

Table 3. Area, production and value of production of five (5) important crops in 2003 (BAS 2004)

Crop	Area ('000 ha)	Production ('000 tons)	Value of Production (M pesos)
Rice	4,006.4	13,499.9	117,989.0
Maize	2,409.8	4,615.6	32,540.1
Coconut	3,214.2	14,121.9	38,694.0
Sugarcane	389.4	23,981.3	21,823.0
Banana	409.8	5,369.0	30,066.2

Ruminant Production

Table 4. Backyard and Commercial Ruminant Populations in 2003 and 2004

Animal Type	2003	2004	% change	% share
Buffalo				
Total	3,179,536	3,281,590	1.03	100.00
Backyard	3,172,512	3,274,751	1.03	99.79
Commercial	7,024	6,839	0.97	0.21
Cattle				
Total	2,557,040	2,558,430	1.0	100.00
Backyard	2,379,836	2,393,014	1.0	93.5
Commercial	177,204	165,416	0.93	6.5
Goat				
Total	3,270,441	3,355,210	1.03	100.00
Backyard	3,255,189	3,338,620	1.03	99.5
Commercial	15,252	16,590	1.09	0.5

Table 5. Climate in the Philippines

Types of Climate	Characteristics
I	Pronounced dry and wet Maximum rains June-September
II	No distinct dry season Maximum rain during December to January
III	No pronounced maximum rainy period Short dry period of 1-3 months
IV	Rainfall evenly distributed throughout the year

Forage and Pasture Production System

History

- 1901- a policy of diversification was adopted under the American sovereignty to focus on the development of agricultural products
- 1900 – Baguio city was discovered and recognized as the so-called “rancheria”.
- 1919 - The forest law or Act No. 2711 was implemented with the mandate of establishing communal forest and pastures for the use of community
- 1970 - The pioneering period in the forage and pasture development

Forage and Pasture Resources

1.5 million hectares of Grassland Areas under FLGLA and PLA

Table 6. Forest land grazing lease agreements and permits (1970-2005)

Year	Total		Lease		Permit	
	Number	Area (‘000ha)	Number	Area (‘000ha)	Number	Area (‘000ha)
1970	3,622	813	1,639	687	1,983	126
1975	3,638	959	1,812	605	1,826	154
1980	2,314	923	2,009	882	305	41
1985	1,084	466	1,051	461	33	5
1990	1,007	414	1,014	405	63	9
1995	722	257	714	252	8	5
2000	412	120	412	120	-	-
2005	399	112	399	112	-	-

Cultivated Cropland and Available Crop Residues

Table 7. Estimated volume of Crop residues from major food crops

Year	Weight in million tons	Carrying Capacity in million animal units (a. u.)
1987	16.0	4.0
1996	24.9	6.7
2004	14.5	2.0

Coconut Plantations

- 3.1 million hectares available for integration with pasture crop and livestock
- Government interventions through the NDA in year 2002 include assistance to coconut farmers to integrate ruminant production under coconut plantations.

Opportunities for Improvement of Pasture Resources

Improvement of Native Grasslands

Figure 3. Imperata oversown with Stylo

Table 8. Liveweight gains on Imperata and Imperata-Legume pastures

Pasture	Stocking Rate (au/ha)	Liveweight gain/ha/year (kg)
Imperata	0.5	20 - 40
Imperata	1.0	25 - 60
Imperata + Centro	1.0	90 - 120
Imperata + Stylo	1.0	90 - 110
Imperata + Leucaena	2.0	150 - 250

Grass (monoculture) and grass-legume pastures

Figure 4. Brachiaria decumbens (monoculture)

Figure 5. Brachiaria humidicola-Stylo mix pasture

Improved Pasture under Coconut

Figure 6. Signal grass under Coconut Plantation

Table 9. Net Income of farmers from coconut in Baligang, camalig Albay

Farm Number	Area (ha)	Net Income (Peso)			Contribution of cattle (%)
		Coconut	Cattle	Total	
1	3.2	51,596	12,675	64,271	20
2	7.0	104,625	9,385	114,010	7
3	2.0	17,880	5,565	23,445	24
4	4.0	77,469	3,015	80,484	4
5	1.5	34,377	12,785	47,162	28
6	3.0	65,421	11,965	77,386	16

Silvi-Pasture Establishment

Figure 7. Gamba grass under Gmelina tree plantation

Integration of Forages in croplands and smallholder farms

Figure 8. Feeding of goats with Leucaena in Upland Cropping area

Establishment of Forage and Pasture Seed Production Areas

Interventions and Output

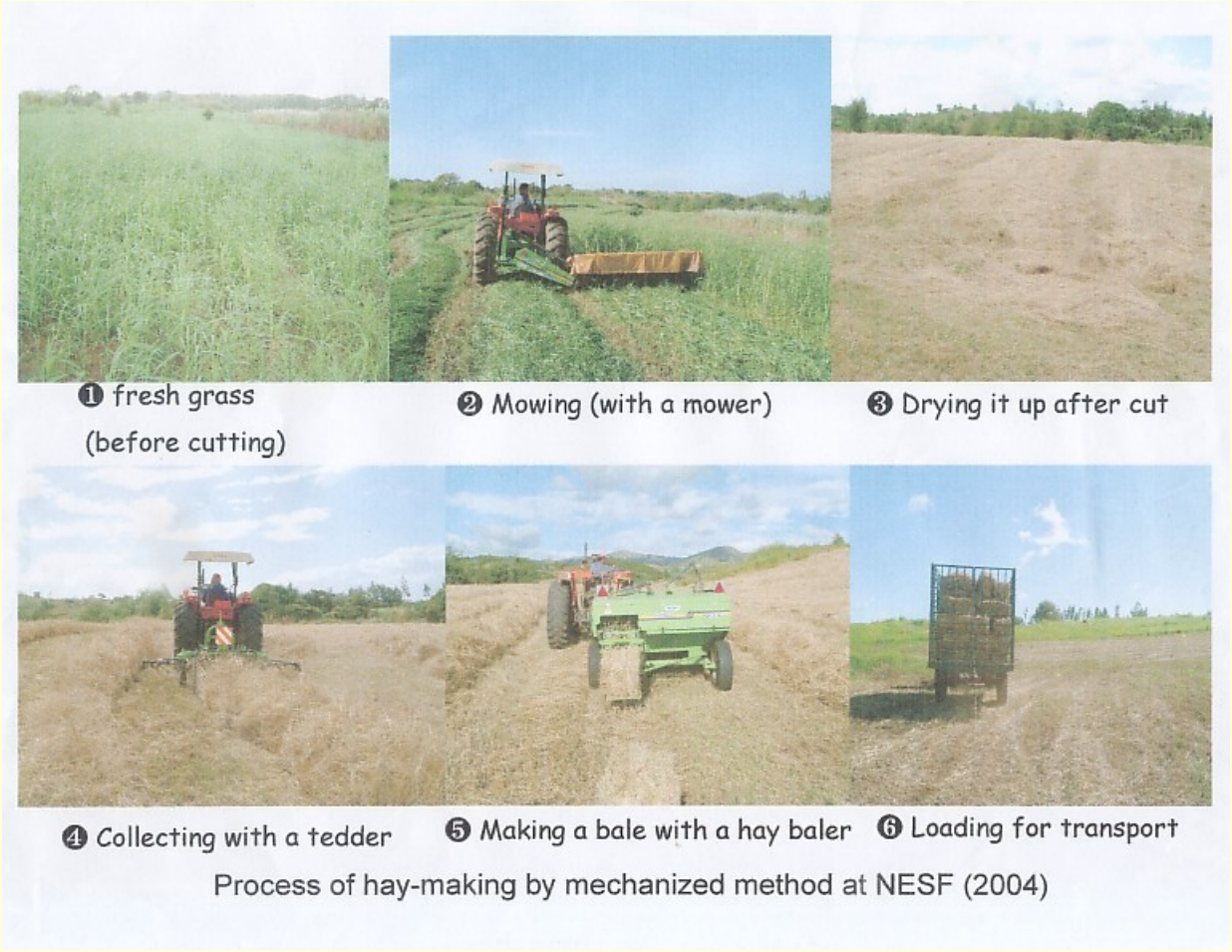
- No systematic seed production program yet
- No reliable statistics on pasture seed production
- 17 member agencies of forage and pasture network organized in 1994 through FSP of CIAT
- Cook stylo seed production in selected areas under supervision of BAI
- Farmer adaptors of FSP project in Matalom Leyte produced 100 kg of CIAT stylo seeds in 1994
- PCC at CLSU ranch produced 60 kg of CIAT stylo seeds on November 1994

Other seed production activities

- 90 hectares of Brachiaria humidicola as source of planting materials in Albay and neighboring provinces of Camarines and Sorsogon
- 1 hectare Andropogon gayanus – established in 1992 but seed harvesting is not efficient. Fallen seeds germinated in the ground are utilized as source of planting materials. Fallen seed can reach a distance of about 100 meter radius and could germinate even in uncultivated field and shaded areas.
- About 300 hectares of humidicola pastures in Nueva Ecija stock farm was used for haymaking and source of planting materials

Figure 9. Andropogon gayanus seed production

Figure 10. Brachiaria humidicola pastures in Nueva Ecija stockfarm



Process of hay-making by mechanized method at NESF (2004)