
Animal Recording in the Philippines

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The Philippines is an agricultural country with the agricultural sector contributing a significant portion in the economy absorbing about 49.7% of the labour force as of 1995 and 20 to 22% to Gross Domestic Product (GDP). Within the framework of the agricultural sector, the livestock and poultry sub-sectors play a significant role in the development of agriculture sustaining growth in this sector for the last several years. This pattern of growth is expected to be sustained and expanded in the coming years as demand for livestock and poultry products is expected to accelerate as may be brought about by the rapid increase in human population which is now estimated to be about 68.5 million with 2.3% annual growth rate.

The present situation of Philippine animal industry is characterized by a well-developed poultry and swine sectors and least developed ruminant sector. The most distinctive feature of the poultry and swine sectors why well developed is the fact that majority of the production comes from the medium to large commercial farms rather than the small subsistence farms. It also reflects fragility owing to the fact that a large percentage of its inputs are import dependent. On the other hand, the ruminant sector particularly the cattle, carabao and goat have been sluggish which suffered from eroded quality of breeding base resulted from relatively high extraction rate and low level of productivity. Specifically for water buffaloes, productivity parameters are expressed in different manner as majority of the animals are owned by farmers which are primarily used for work in a crop-dominant farming system.

While the livestock and poultry sectors play a significant role in the agricultural industries of the country, it is imperative that animal recording which is one of the important component of the general management for optimum production of the herd must be given attention. For an efficient operation to attain optimum production, systematic and accurate recording of day-to-day events of an animal is very important and the performance recording of an individual is usually associated with selection for genetic improvement. Recording is an aggregate information of an individual or group of animals which is necessary pre-requisite to effective decision

1. Introduction

making in breeding policy. Proper recording and record keeping practices will enable the farmer or the manager of the farm to use inputs and management skills effectively and economically. In most of the developing countries production figures on individual animals are usually available for only a small proportion of the total population and there is no systematic recording at all. The lack if not absence of reliable records from which performance efficiency and constraints could be monitored and evaluated is a serious problem to be taken into consideration. This paper tends to describe the status of the animal industry, the recording and animal identification systems in our country. Also, the standardized recording system adopted for use in buffalo is herein presented.

2. The Philippine animal industries

Majority of the Philippine livestock and poultry industries are in the hands of the smallholder who hold from 90.6 to 99.7% of the ruminant, 80.1% in swine and 56.7% of poultry (Table 1). The commercial raisers, however, while they have lower percentage of the animal population are highly efficient and some large corporations have full integrated system in their operations.

Table 1. Inventory of animals by species and by farm size, 1996, in the Philippines.

Species	Smallholder		Commercial		Total
	(' 000 hd)	%	('000 hd)	%	
Cabarbao	2 835.2	99.7	5.8	0.3	2 841.1
Cattle	1 929.0	90.6	199.4	9.4	2 128.4
Hog	7 238.9	80.1	1 786.9	19.9	9 025.9
Goat	2 834.5	99.6	10.6	0.4	2 845.1
Duck	8.335.1	77.6	2 107.2	22.4	9 442.3
Chicken	65 674.6	56.7	50 106.0	43.3	114 781.5

P=Preliminary estimate

Source: Bureau of Agricultural Statistics (BAS), 1996 as cited by Nazareno and Cruz, 1996.

3. Inventory and population

During the past few years, estimate of the total animal production in the Philippines clearly indicate that poultry and swine industries dominate the sector (Table 2). A review of these annual animal trend shows a steady pattern of growth for these two commodities while those of cattle and water buffalo were rather erratic. The large ruminants had negative population growth from 1982 to 1992 at an annual average of -2.2% and 0.22% for cattle and water buffalo, respectively. In the years proceeding thereafter, ruminant population bounced to positive growth.

Inventory of various animal species during the recent years (1992-1996) indicate robust development with an average annual growth rate of 9.3% for chicken, 5.4% among small ruminants, 5.2% cattle, 3.0% for hogs and 2.5% in carabaos (Table 2).

Table 2. Inventory of livestock and poultry by species in the period 1992-1996. ('000 000 heads).

Species	Year					Average Annual Growth, %
	1992	1993	1994	1995	1996P	
Carabao	2.57	2.57	2.55	2.70	2.84	2.5
Cattle	1.73	1.91	1.93	2.02	2.12	5.2
Hog	8.02	7.95	8.22	8.94	9.02	3.0
Goat	2.30	2.56	2.63	2.82	2.84	5.4
Duck	8.33	8.70	8.18	9.11	9.44	3.7
Chicken	81.52	87.15	93.10	96.21	115.78	9.3

P= Preliminary estimate Source: Bureau of Agricultural Statistics (BAS), 1996 as cited by Nazareno and Cruz, 1996.

The total volume of production from the industry in 1995 was 2 657.7 metric tons valued at US\$ 4.4 billion (Tables 3 and 4). Pork and chicken meat constitute 81.3% of the total meat production, with pork being the largest contributor equivalent to 50.3% of the total local meat supply. This results from the fact that chicken meat and pork remain to be the least expensive meat in the local market today and thus the consumer demand for these two commodities are the highest. In turn, the sector responds by increasing inventories. The value of animal products during the period 1992 to 1995 is presented in table 4.

Meat supply from ruminants also showed positive annual growth rate that ranged from about 1.4% in buffalo meat to a high of 8.4% in beef. This large increase in availability of beef can be associated with the influx of considerable number of reasonably priced feeder stocks from foreign sources in the last few years. This live animal importation increased from only 12 674 hd in 1991 to 188 348 hd in 1995 (Table 6).

Growth rate in goat meat production was also significant during the last five years. Aside from some quantities for export, the local consumers have already developed the taste for chevon.

The only commodity that has stagnant in production is the dairy sector. Slow rate of development manifested during the last decade is readily explained by the liberalized importation of highly subsidized milk from foreign sources depressing private sector initiatives for dairy development.

4. Production

Table 3. Volume of livestock and poultry production, 1992-1995, in the Philippines ('000 metric tons).

Species	Year				Average annual growth
	1992	1993	1994	1995	
Livestock	1 407.5	1 471.5	1 539.4	1 614.9	4.6
Carabao	108.6	108.3	108.6	103.9	1.4
Cattle	166.9	181.7	195.5	213.0	8.4
Hog	1 056.9	1 101.5	1 152.6	1 213.1	4.7
Goat	59.6	65.5	68.5	70.7	5.9
Dairy	15.4	14.3	13.9	14.0	3.0
Poultry	908.3	961.7	991.0	1 042.8	4.7
Meat	690.9	720.3	753.4	795.1	4.7
Chicken	651.9	678.7	709.4	747.8	4.6
Duck	30.0	41.6	44.0	47.3	6.6
Eggs	217.2	241.3	237.5	247.5	4.5
Chicken	180.5	202.1	196.0	199.9	3.6
Duck	36.7	39.2	41.5	47.6	9.9

Source: Bureau of Agricultural Statistics (BAS), 1996 as cited by Nazareno and Cruz, 1996.

Table 4. Value of Animal Product, 1992-1995, in the Philippines, (US\$ Million).

Item	Year			
	1992	1993	1994	1995
Livestock	1 986.1	1 968.8	2 223.7	2 566.2
Carabao	117.1	121.8	142.2	123.2
Cattle	237.0	253.3	149.1	330.3
Hog	1 555.7	1 506.1	1 842.9	2 013.9
Goat	72.5	83.9	85.8	94.9
Dairy	3.7	3.5	3.5	3.9
Poultry	1 712.2	1 772.8	1 946.7	1 863.5
Meat	1 365.3	1 397.2	1 487.7	1 390.4
Chicken	1 290.3	1 320.0	1 487.7	1 390.4
Duck	75.0	77.2	81.8	91.2
Eggs	346.8	375.4	377.0	381.6
Chicken	298.5	321.9	320.3	311.8
Duck	48.3	53.5	56.7	69.8
Total	3 698.4	3 741.7	4 170.5	4 429.7

Source of base data: Bureau of Agricultural Statistics (BAS), 1996.
US \$ = Phil peso 26.3 as cited by Nazareno and Cruz, 1996.

Many of the private commercial farms from where the bulk of the local milk production were derived have either shut down operation or decided to trim down their herd size.

Breeder stocks requirements of the poultry and swine industries are generally augmented through importation from US and European sources. Magnitude of importation of breeding stocks of cattle and buffalo during 1994 and 1995 was initiated by the government and represent genetically superior stocks (Table 5).

5. Importation

Table 5. Importation of breeder stocks, 1992-1995, in the Philippines.

Species	1992	1993	1994	1995
Poultry	1 024 535	1 295 952	982 006	2 037 117
Swine	1 746	5 016	6 340	2 452
Cattle	4 000	3 340	2 104	2 568
Buffalo	-	-	690	398
Goat	-	40	-	-

Source : Foreign Trade Statistics, Bureau of Animal Industry; DA; Philippine Carabao Center, DA as cited by Nazareno and Cruz, 1996.

Table 6. Importation of feeder stocks, frozen bovine meat and processed meat products, 1991-1995, in the Philippines.

Year	Feeder stock (hd)	Bovine meat		Processed meat (Metric tons)
		(Metric tons)	Value FOB US\$'000	
1991	12 674	11 000	19 000	94.2
1992	33 362	14 395	23 433	206.2
1993	74 672	17 895	28 920	1 848.2
1994	109 486	36 968	46 998	3 483.9
1995	188 348	44 189	57 322	2 853.3
1996	49 967*			

* Partial data, Jan. - June only.

Source: Department of Agriculture, 1996; National Statistics Office (NSO) as cited by Nazareno and Cruz, 1996.

In general terms, the local animal industry's level of production is not adequate to meet the local requirements. For this reason, the Philippines continues to be a net importer of animal and animal products. While the swine and poultry subsectors are at a level to be able to meet the current local demands, there remains a gap between the domestic requirements and the local supply from beef cattle and carabaos sectors. These deficiencies are largely met by importation of live feeder stocks, beef and processed meat products (Table 6).

One major contribution to the supply of beef is buffalo meat, the importation of which has seen remarkable increases in 1994 and on. The volume and value of the various importations are shown in table 6 and such has an impact on the local meat processing industry, an agro-industry sector that grew from merely 26 processors to 64 in 1995. It has, to some extent, lessened the pressure on the local buffalo population from where buffalo meat, widely used in processing owing to its inherent properties and reasonable price, are derived.

The local dairy industry, on the other hand, can only produce less than one percent of the local requirements. Therefore, 99% are met by importation of milk and dairy products (Table 7), mostly coming from Australia, New Zealand and Europe.

Table 7. Local milk production, milk importation and total milk supply, 1990-1995, in the Philippines.

Year	Local Production (M Kg)	Importation (Liquid Milk Equivalent) LME		Total Milk Supply (M Kg) LME
		Volume (M Kg)	Value (US\$)	
1990	19.1	1 650.3	266.5	1 669.4
1991	18.9	1 566.8	221.6	1 585.7
1992	15.4	1 625.0	264.7	1 640.4
1993	14.3	1 598.3	270.8	1 612.7
1994	13.9	1 893.5	330.0	1 907.4
1995	14.0	2 197.0	438.0	2 211.0

Source : National Dairy Authority, 1996 as cited by Nazareno and Cruz, 1996.

6. Philippine animal recording

Animal recording and keeping it in proper order is an important component in management. This aspect of management should be over-emphasized as generally Filipino farmer finds it difficult to keep his records religiously. The animal recording process in our country has been done primarily by government agencies/farms, research centers and institutions/universities. However, utilization in most of these recorded data have not been properly recognized and evaluated.

Recording may varied in many forms. However, under Philippine farmers setting having one or two head of animals, if in case he is doing recording, one simple way that he sometimes sorted to record important data and or events that need to attend to is to jot down information in calendars. Still another would be to keep simple diary. The advantages of these methods is simplicity. Their main disadvantage stem from the fact that they would be incomplete and may easily get lost. But generally, under smallholder level of production, no if not few animal recording is being done.

One may argue that if an enterprise is small and or if animal is less there is no need of written records. Transactions are few and infrequent and or in the other way a farmer is familiar with the one or two head of his animals, easier for him to remember and can be committed to memory. The disadvantages however outweigh the advantages. Memory recall is never accurate. This case practically happens in smallhold farmers.

In an organized commercial farms proper recording is always practiced. An objective recording system is adopted suited to their production schemes. Recently, they are now diverted to use computerized programs as part of their record keeping system and for easy analysis of data.

Animal performance are properly recorded and analyzed to accurately ascertain the genetic worth of buffaloes, whether of swamp or riverine type. Minimum data to be collected are as follows:

A. Bulls

1) Institution

- monthly body weight and structural traits (HG, BL, WHT);
- semen characteristics;
- semen production (Frozen Semen & Extended Liquid Semen) and disposal.

2) Outside of the center

- conception rate;
- calf drop/crop.

A minimum of 25 progenies per bull is required to assess his potential for growth and milk.

B. Heifer/Cows

- body weights;
- estrus variables;
- breeding data i.e. breeding date, bull's genotype, rebreeding date;
- parturition date/calf drop/crop.

7. Standardized recording system of Philippine Carabao Center

7.1 Records and recording system

C. Progenies

- birth weight and monthly body weight and structural traits (institutional herd) up to 24 months of age;
- birth weight and quarterly weights (village born offsprings) for 24 months.

D. Dams

- daily milk yield;
- weekly milk fat and monthly analysis thereafter;
- lactation length.

E. Other Data for Consideration

- herd health program;
- animal disposal;
- etc.

7.2 Animal identification of the Philippine Carabao Center

The most common methods of identification are hide brands, ear marks and tattoos. Our law requires animals like cattle and carabaos to be branded. Aside from the three methods, some animal husbandry men use eartags and horn brands.

An identification schemes implemented in each agencies were designed. At Philippine Carabao Centers alone, at least two identification of ear tags and or ear notch and skin/horn branding. Minimum information included in this scheme were: date and year of birth, genotype, location of the center where this animal belongs, and sex of the progeny.

8. Constraints to animal recording

Despite the advantage that animal recording might contribute to livestock improvement, it has not received much attention from farmers, researchers and extension workers. The implications are obvious. Lack of knowledge and awareness about the importance of records, organizational problems, inadequate budget for operation are the constraints to animal recording.

9. References

Nazareno, L.E. & L.C. Cruz. 1996. Animal Industries in the Philippines and their responses to trade liberalization. Paper presented at the 8th Asian-Australian Association of Animal Production Societies (AAAP) Congress, Japan, October 13-18, 1996.

R & D Program on Carabao. 1997. Philippine Carabao Center. Dept. of Agric., Manila.