

# Acknowledgments

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- Ensure adequate financial and human resources to village volunteers for veterinary extension services to cover all rural areas
- Upgrade local pig breeds with improved variety for better genetic performance in rural livestock production
- Attract private sector investment to finance all livestock support infrastructure, such as cold chain, cold storage, animal feed mills, veterinary drugs, and meat and milk processing plants
- Ensure effective policies and strategies in maintaining a wide diversity of agro-ecological natural resource, such as animal breeds, water, and grazing land
- Build social networks among rural farmers by establishing rural co-operative societies (e.g.a cattle farmers group, pig owners group, poultry farmers group) that share knowledge and skills among members
- Promote the participation of rural women in capacity building training with gender equality perspectives

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# Abbreviations

AI	Artificial insemination
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus group discussion
FSWG	Food Security Working Group
GDP	Gross domestic product
LBVD	Livestock Breeding and Veterinary Department
LFME	Livestock, Feedstuff, and Milk Products Enterprise
UVS	University of Veterinary Science

Regarding input, commercialization implies that both traded and non-traded inputs are valued in terms of their market value.

Commercialization of farm production systems leads to greater market orientation of production; progressive substitution for non-traded inputs in favor of purchased inputs; and the gradual decline of integrated farming systems and their replacement by specialized enterprises for crop, livestock, poultry, and aquaculture products. The farm level determinants of increasing commercialization are the rising opportunity costs of family labor and increased market demand for food and other agricultural products. Commercializing the rural livestock sector promotes food production for food security. Success in even small-scale commercialized farming can greatly reduce poverty of landless, rural people by improving productivity of producers and producer groups.

## 1.2 Rationale of the Study

The livestock sector encompasses the meat and dairy industry, cultivation and transport, and agriculture fertilization. Livestock breeding is a main function of the agriculture sector, and its labour-intensive activities provide regular income to numerous small, landless farmers. In total, the agriculture sector fosters food security and promotes the living standards of rural people.

An estimated 13.57 million cattle and 2.97 million buffalo are used for cultivation of land and transportation on most small farms that total an annual net sown area of 33.7 million acres of agricultural land.<sup>1</sup> Pigs, goats, sheep, and poultry are also raised at small farms. The products of livestock are to satisfy immediate food needs of families or are sold for cash. Most of the common livestock, including some smallholdings of dairy cattle, are raised traditionally. Pigs and poultry are most common with poultry being more numerous in rural areas. Livestock are dependable cash sources for most smallholder households and are from which households derive a large percentage of their annual income. Fattening a single pig and raising even one or two native chickens may contribute as much as half of all household income. Backyard chicken and layer duck are particularly important among the landless as they are the only affordable livestock for these households.

Agricultural growth, including the livestock sub-sector, can be highly effective in reducing poverty as the majority of the nation's poor live in rural areas. Livestock provide food and income to the majority of these people. Demand for livestock products are growing quickly in neighbouring countries and will continue increasing into the foreseeable future. This demand can provide significant opportunities for many rural and peri-urban poor to increase returns from their livestock resources.

Production systems of any crops or goods can be characterized as subsistence, semi-commercial, or commercial systems. Commercialization for poor, rural livestock keepers can be an effective intervention for poverty reduction and rural development, as well as a key component of nutritious food production.

The research study contributes evidence-based information from livestock farmers' own successes and failures. Additionally, it identifies constraints and opportunities of commercializing the rural livestock sector for policy makers, donors, and members of FSWG to inform food security policies. It

<sup>1</sup> Statistical Yearbook 2011, Central Statistical Organization

### 1.3 Objectives of the Research

The objectives of this research are:

- To highlight the importance animal husbandry sector and to give recommendations and suggestions on future strategies for commercialization of the rural livestock sector.
- To provide suggestions to policy makers and decision makers by identifying important factors for commercial development of the rural livestock sector

### 1.4 Organization of the Study

This study is organized into four sections. Section 1 introduces the study and is followed by the research methodology applied in the study in Section 2. Section 3 shares the results and discusses findings from the literature review, focus group discussions (FGDs), and surveys. Section 4 concludes with recommendations regarding the commercialization of the rural livestock sector.

## 2. Research Methodology

Three research methodologies were used in this study:

1. Literature Review
2. Focus Group Discussions
3. Surveys

### 2.1 Literature Review

Several secondary sources of information were references and analyzed for qualitative and quantitative data. These sources include official Government reports, relevant institutes' reports, studies relevant to raising animals and on the livestock sector, and research studies by livestock technicians.

### 2.2 Focus Group Discussions

Focus group discussions (FGD) were conducted at the national level. Five technicians and professors from the University of Veterinary Science, members of the Myanmar Livestock Federation, and retired officers from the Livestock Breeding and Veterinary Department (LBVD) participated. The study also conducted in-depth interviews with village leaders, Township LBVD members, and other stakeholders, such as retailers and wholesalers in the livestock sector (see Annex 6, 7, and 8 for participant profiles).



Direct observation was utilized to understand the conditions of sample villages.

### **2.3.3 Data Collection Procedure**

Primary data and information were collected in October and November 2013 in collaboration with Action for Green Earth. Household interviews and FGDs were major modes of information gathering and thus, all interviewers were trained to understand the questionnaire's content in order to communicate the research objectives. Interviewers were also trained in electronic data coding, data editing, and data entry.

It also needs to control the factors that undermine the validity and reliability of the results. Clear instructions were also provided to each interviewer to ensure data quality, validity, and reliability throughout the interview process. Further, if selected respondents were unwilling to participate in the survey, then another survey was conducted in its place. The leading researchers U KyawKhie, Dr. TheinHtunHla, and Dr. Chit Swe conducted FGDs and in-depth interviews with village leaders and other stakeholders in the livestock sector. Direct observations of the condition of the livestock sector were also made.

### **2.3.4 Data Analysis and Processing**

Surveys were checked for errors and omissions prior to data editing and entry. Experienced data analysis personnel edited the data, which was then entered in accordance with standardized data entry methods that match the SPSS software package.

### **2.3.5 Scope and Limitation of the Study**

This study only analyzes factors and policies that have affected the commercialization of the livestock sector in rural areas.

## **3. Results**

### **3.1 Literature Review**

#### **3.1.1 Status of the Livestock Sector**

Livestock production in Myanmar is based on the household rearing system. Since modern livestock breeding is capital intensive and technology-specific, both of which are limited in Myanmar, small-scale livestock breeding and production with traditional technologies and practices is more common. More than 98% of the total livestock population resides in small-scale, also known as backyard, farms. Farmers keep a few draught cattle for land preparation and rear pigs, chickens, and duck to supplement their regular income. The majority of farmers' earnings come from their agricultural produce, such as paddy, pulses, and beans, and small livestock products. Livestock farming accounts for only a small portion of income. To meet national policy objectives for livestock production, the rural farming system must be improved and upgraded.

from its local breeds and strains of chickens and also from its traditional production management system.

Village chickens are an important livestock species in Myanmar’s rural areas. They provide not only income but also dietary protein for the household. Poultry diseases, in particular Newcastle disease, and poor poultry management are considered to be the major limitations to improve chicken production in Myanmar villages (Henning et al., 2006)

### 3.1.5 Rural Development

The Government recognizes the potential of the agricultural sector to stimulate broad-based rural development and therefore alleviate poverty. Myanmar has a relatively high land to population ratio, and half of its arable land is still left unused. The Government is also conscious that sector growth has been constrained by low productivity, poor marketing, and farmers’ lack of access to quality research and extension support. Providing the rural marketing system access to the private sector, better infrastructure, improved access to credit, approval of new land laws, and the progressive establishment of a market-determined and competitive foreign exchange rate are important steps in enabling livestock sector growth.



### 3.1.6 Degenerated Breed Stock in Livestock

The livestock sector is primarily composed of smallholder farmers who own small herds of livestock, including cattle, goats, and buffalos, which are kept for draft purposes. Currently, there are small numbers of privately owned pig and poultry commercial farmers, who breed primarily for home consumption and sell surplus livestock for additional off farm income. Almost all of the breed stocks in rural areas are raised by domestic breeding practices.

Due to degenerated breed stock, the growth of most livestock animals is relatively low compared to private livestock raising farms. Artificial insemination could play an important role in providing genetically improved animal breeds. However, improved artificial insemination services are likely to be available only for larger, commercial herd operators around Yangon and Mandalay rather than for low performing farmers in rural areas. As a result, the LVBD is providing breed stock and technical services in rural areas to encourage indigenous poultry breeding. However, it is difficult to introduce intensive breeding systems to household backyard livestock breeding. Relevant techniques for suitable breeding management that increase livestock production need to be developed.



### 3.1.10 Livestock Extension Capability

The LBVD is headed by the Director General and is comprised of the Research and Disease Control Division and the Animal Health and Development (AHD) Division. Veterinary officers head state/division and field office, and they are each responsible for an average of four townships and 30 village tracts. Veterinary assistants are responsible for approximately two townships and 15 village tracts.

There are limited human resources and little incentive to deliver useful field programmes, which is the most significant impediment to effective delivery of state-provided animal health and production services. Sub-district level veterinary offices are typically understaffed. Those who are staffed are reportedly often assigned unrelated tasks by local authorities, are rarely provided transportation, and are not given adequate allowances to finance extensive fieldwork.

### 3.1.11 Credit for Livestock Production

Lack of start-up and operating capital for existing and interested small-scale producers is an important constraint in the livestock sector. Micro-financing for small-scale livestock owners is essential to purchase or expand their livestock populations, as well as purchase additional inputs for livestock management and afford operational costs.



Landless households are present in every village, but most are without the capital or the collateral to borrow for livestock production despite demonstrating high capability to manage small-scale livestock enterprises. Therefore, an ability to purchase small numbers of livestock (chickens, pigs, and cattle) would provide them the opportunity to improve their food security and increase household income.

### 3.1.12 Improved Food Security and Nutrition

Poverty reduction and food security efforts vary across states and regions. The conditions of food security are particularly weak in the remote areas of states, divisions, and regions where the incidence of poverty is high. Substantially improving the Government's extension and other support services would alleviate these poor conditions.



A workshop to finalize the National Plan of Action for Food and Nutrition (2011-2015) was held in March 2013. As a result, there will be more collaboration and integration amongst all sectors related to nutrition activities, such as agriculture, livestock and fisheries, and education, to holistically address food security and nutrition education. The Government is also prioritizing the development of livestock breeding and fisheries. Reform strategies will be developed to reduce production costs, improve

### **3.2.2 Current Expenditure or Operational Expenses**

Commercial livestock farmers pay for labour, feeds and feed additives, vaccines and medicines, and transport charges in cash daily, weekly, or monthly. However, inconsistent or inadequate cash flow has hampered the consistency of small-scale livestock farming operations and needs to be addressed.

### **3.2.3 Technical Knowledge and Skills**

Advanced technical knowledge and systematic farming skills are important to improve production performance and profitability; however, due to limited financial resources, UVS students are less motivated to perform the necessary research and educate the public. Hence, rural livestock farmers that lack advanced knowledge and skills in farming and livestock raising instead utilize indigenous technical skills.

### **3.2.4 Water Supply**

Clean water is essential for drinking, washing, and cleaning. In commercial livestock production, it is necessary to rear a large number of animals in a confined area, and this requires a sufficient amount of clean drinking and cleaning water available all year.

### **3.2.5 Animal Feed Supply, Mixed Feed (Ration), or Raw Form**

An adequate and appropriate daily supply of animal feed is essential. Additionally, the quality of feed should meet basic nutritional standards. It is also important to add feed additives and vitamin supplements for improved production performance.

### **3.2.6 Availability of High Production Potential Breeds**

Commercial production requires high genetic potential for mass livestock production. Under the same conditions, high quality breeds produce larger pig litters and improved calves, thus can make higher profit margins for more productivity. Unfortunately, high breed varieties of all animals, but especially of dairy cows and pigs, are limited throughout the country. It is important to begin early phase planning for the supply of high quality breed to rural areas.

### **3.2.7 Animal Disease Prevention and Treatment Opportunity**

In livestock production farming, disease outbreak is major challenge and can determine whether a farmer makes a profit or loss. Annual disease outbreaks can be common in specific, local areas, though other infectious diseases occur sporadically. Vaccinating against infectious diseases and providing timely treatment of illnesses are critical, and farmers should develop close relationships with local veterinary technicians, who can prevent and manage diseases.

### **3.2.8 Market Situation**

The market for inputs supply and outputs distribution is determined by commercial livestock production. To enable commercialization of farming, adequate supply of the inputs must be available

### 3.2.14 Financial Management, Bookkeeping, and Recording Skills

Once businesses commercialize, farmers must manage large amounts of cash on daily or monthly cash flow systems. They must maintain well-kept records of the farm’s financial operations and technical performances. Particularly, technical records should include the current number of livestock raised, age, breed, daily feed consumption, daily number of culled or dead animal, production records, and vaccination and treatment records. Financial records provide data to analyze the profit and loss of the livestock farm operation. The value of all capital investments in cash (kyats) and operating expenses in cash (kyats) should be correctly recorded regularly. Without correct financial data, the proper review and financial analysis cannot accurately predict future earnings or losses.

### 3.2.15 Other Factors

Ruminants, such as draught and dairy cattle, buffalo, sheep, and goats, feed on roughage to efficiently maintain their bodily health and production, and they also need a small amount of concentrate feed additives. This requires sufficient grazing grounds or pasture lands to develop a range system.

Licensed butchers influence the pork market, and they control the market price of pig meat distribution networks in certain townships or local areas. This causes low market accessibility for farmers.

Sudden market price changes directly affect farmers’ earned income, which parallels production performance of the livestock business.

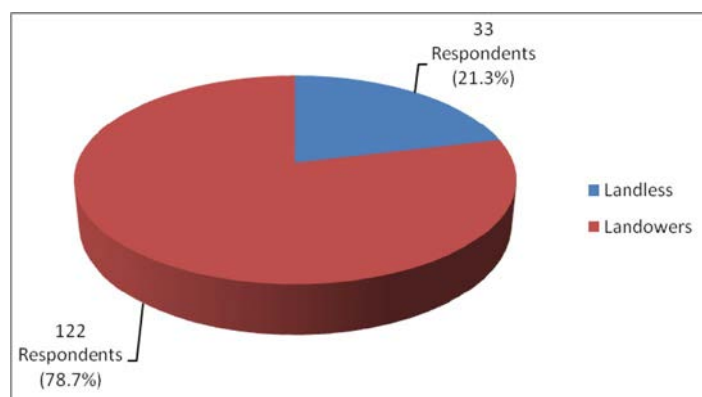
Lack of housing materials in local village or township makes it difficult to build systematic housing or shelter for animals. Further, the environmental condition directly affects animal production in open-air type housing systems. Sudden changes in temperature, ventilation, humidity, and heavy rainfall directly influence the production, feed intake, growth, health, and emitted odor.`

## 3.3 Results from Survey Data

### 3.3.1 Land Ownership of Respondents

Respondents in the household survey shared their land ownership statuses as shown in Figure 1.

**Figure 1. Land Ownership of Respondents**



Source: Survey Data

Based on household surveys, 21.3% of respondents (33 out of 155) are landless, small livestock raisers in rural areas of Pauktaw and Taungup Townships in Rakhine State.

**Table 1. Buffaloes and Cows Ownership in Each Township**

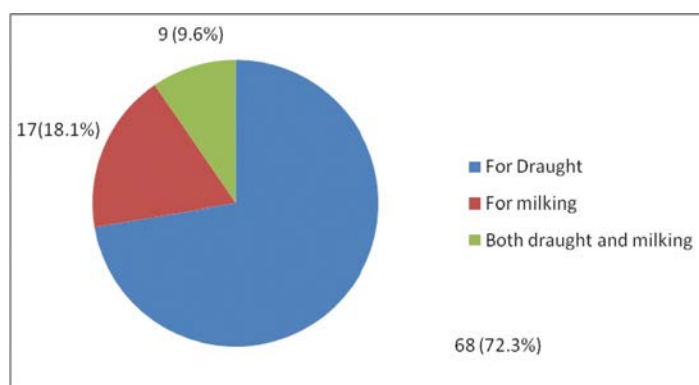
Location	Buffalo Raisers	Total Head of Buffalo	Average	Cow Raisers	Total Heads of Cows	Average
5 Sampled Villages in Pauktaw TSP	53	517	9.75	40	162	4.05
5 Sampled Villages in Taungup TSP	4	7	1.75	3	116	3.2
<b>Total</b>	<b>57</b>	<b>524</b>	<b>9.19</b>	<b>76</b>	<b>278</b>	<b>3.66</b>

Source: Survey Data

Among the 76 cow owners, 40 cow owners are from Pauktaw Township, and 36 are from Taungup Township. Each cow owner has an average of 3.66 cows.

Pauktaw Township raises more buffaloes and cows, and farmers also own more land than farmers in Taungup. Greater land areas potentially increase natural animal feed resources and feasibility for livestock commercialization.

**Figure 3. Reasons for Cattle Raising**



Source: Survey Data

Among the 94 cattle raisers, 68 of respondents (72.3%) raise cattle for draught and tilling the land, while only 17 of respondents (18.1%) raised for milking. Nine respondents (9.6%) raised cattle for both draught and milking. Thus, cattle are not raised specifically or exclusively for dairy production.

The 60.6% of cattle raisers (57 out of 94) earn 25% of their annual income from cattle raising, and 27.7% of cattle raisers earn 50% of their annual income from cattle raising. Only five households earned 75% of annual income from cattle raising, and four households could earned all their income from cattle raising (see Annex 15).

### 3.3.6 Status of Vaccines

Of the 94 cattle raisers in both Townships, 60.6% (57 out of 94 respondents) have received vaccination services from the LBVD, while the remaining 39.4% have not received vaccination services from the LBVD. Thirty-six out of the 57 respondents (63.2%) that receive the LBVD services vaccinate their cattle once every six months. The remaining 36.8% (21 out of 57) vaccinate once a year. This high rate and frequency of vaccination is promising for potential commercialization of the sector.

### 3.3.7 Feed Availability

The majority of farmers can feed their animals. Between the two Townships, 37.4% of respondents are able to feed their animals adequately and 46.5% can feed their animals partially, while only 16.1% are unable to properly feed their animals. Only 17% (16 out of 94) of respondents feed concentration to their cattle; cost (19 respondents), unfamiliarity (38 respondents), and low accessibility (21 respondents) are reasons why concentration is not used.

Almost half of cattle owners (42.1%) did not know that grass can be grown as fodder crop in suitable land areas. This is critical knowledge about feed that must be shared as 60.6% of cattle raisers are interested in growing grass for their cattle. . Thus, implementing above said grass growing and fodder crops growing projects could access sufficient forage as a solving method of shortage animal feed and the problem of limited pasture areas.

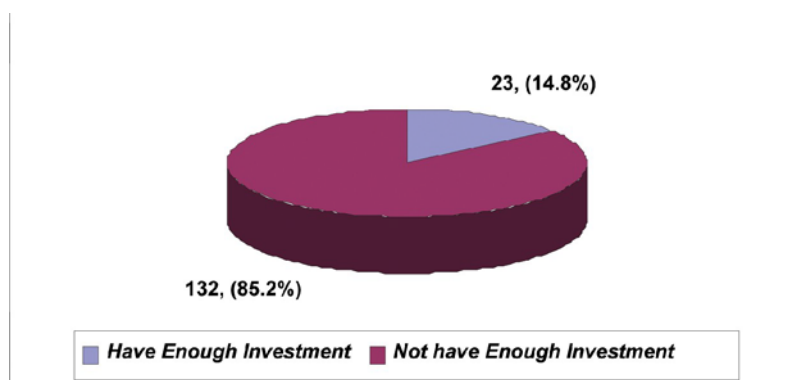
### 3.3.8 Interest in Commercialization

A total of 120 (77.4%) of respondents are interested in livestock commercialization, while the remaining 35 (22.6%) of respondents do not favor it. These ratios are nearly the same in both Townships; however, Taungup residents are interested in pig and poultry raising, while more Pauktaw residents are interested in cattle raising (see Annex 14).

### 3.3.9 Sufficiency of Investment for Livestock Commercialization

Lack of initial capital investment is a major challenge for the rural livestock sector. Only 14.8% (23 respondents) indicated having enough investment to start a commercial livestock business; the majority of respondents (85.2%) do not have any capital.

**Figure 5. Having Enough Investment**



Source: Survey Data

### **3.5 Opportunities of Livestock Development**

Improving and commercializing the livestock sector is the second priority within the national rural poverty alleviation strategy, which aims to reduce the overall poverty to 16% by 2015. Additionally, as the new government has made substantial social, political, and economic reforms, the potential business opportunity in the livestock sector has become one of the top sectors attracting foreign investors to Myanmar.

#### **3.5.1 Opportunities of Private Sector Development in Rural Livestock Industry**

Many multinational and local companies are seeking to enter Myanmar's livestock market with veterinary products, exotic breeds, and feeds.

Two local companies already own a large market share. Myanmar CP Livestock Company, Limited produces feeds; imports genetically improved breeds, such as broilers, layers, and grower pigs; imports veterinary medicines from Thailand; and makes ready-to-eat chicken. Maykha is the second largest local private company, and it also produces and distributes animal feeds and medicines to commercial livestock farmers in Myanmar.

The opportunities for public-private partnerships are abundant in the animal feed industry. In fact, most of the feed mills and cold storage facilities and factories owned by LFME are being transferred to the private sector for livestock production commercialization.

#### **3.5.2 Opportunities of Market Development**

Myanmar's meat, milk, and egg consumption rates are lower than other countries in the region (annual per capita consumption for meat, milk, and egg are 31.1 kg, 26.3 kg, and 127 units respectively). Thus, if consumption increases, the potential for expansion of the domestic livestock market may be feasible..

The Government has encouraged livestock owners to export their products; India and China are large potential markets. However, the export potential is limited by a lack of modern processing infrastructure and facilities, as well as regulatory measures on disease control. The Ministry of Livestock, Fishery, and Rural Development is providing extensive artificial insemination (AI) services by introducing crossbreed dairy heifers to small holders through an installment system and providing livestock loans to rural pig farmers. The Government has also initiated the School Milk Programme in all States and Divisions as an extension of AI services.

The Government has also been granting land use rights by offering certificates to land owners. As a result, rural farmers' investment in livestock should increase.

#### **3.5.3 Potential for Development in the Financial Sector**

The current Government has undertaken a series of economic reforms to improve the business and investment climate and facilitate financial sector development through trade liberalization and foreign direct investment. Reforms include managing the floated exchange rate regime and increasing the deposit-to-capital ratio from ten to 25 in banking sector. Further, the Ministry of

- ◆ Explore additional opportunities for rural infrastructure development, including electricity, good road transportation, and other livestock infrastructure, such as hatcheries in suitable locations
- ◆ Ensure market accessibility and easy access to market collection points in rural areas

#### **4.3 Recommendations to Improve Natural Capital Development**

- ◆ To achieve the sustainable livelihood of rural people, availability and ownership of natural capital is one of the main influential factors in rural livestock production.
- ◆ Provide institutional and financial support to undertake more research on availability of registered and unregistered natural grazing ground for commercial livestock production
- ◆ Share international and regional experiences and best practices in maintaining and developing natural capital for livestock

#### **4.4 Recommendations to Improve Financial Capital Development**

- ◆ Provide rural farmers with financial infrastructure to access affordable credit for livestock raising activities
- ◆ Include credit policies for rural livestock owners in Myanmar's banking sector
- ◆ Strengthen rural livestock production by using a comprehensive and inclusive approach and supporting the efforts of Cooperative Societies, particularly the Ministry of Co-operatives
- ◆ Ensure an enabling policy and legal environment for nongovernmental organizations, UN agencies, and other community-based organizations to establish rural credits and development programmes
- ◆ Seek bilateral and multilateral assistance for commercialization whenever possible

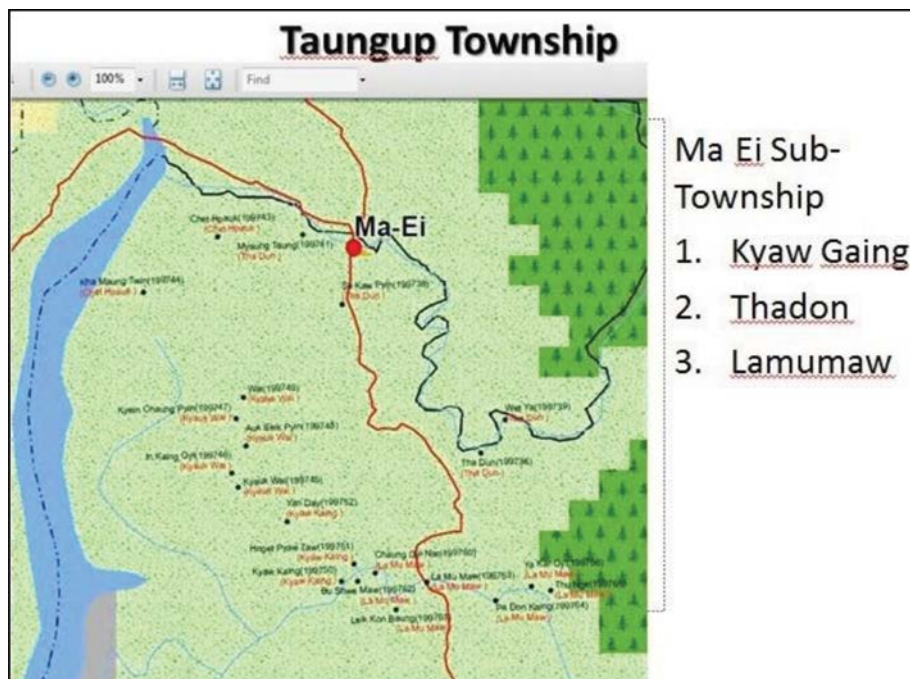
#### **4.5 Recommendations to Improve Social Capital**

- ◆ Build social networks among rural farmers to share knowledge and skills by establishing rural co-operative societies (e.g. cattle farmers group, pig owners group, and poultry farmers group)
- ◆ Promote the participation of rural people in capacity building trainings
- ◆ Create more opportunities for rural farmers seeking knowledge, skills development, and behavioral change through rural veterinary extension services
- ◆ Provide media outlets the facilities necessary to promote public awareness and education about livestock best practices

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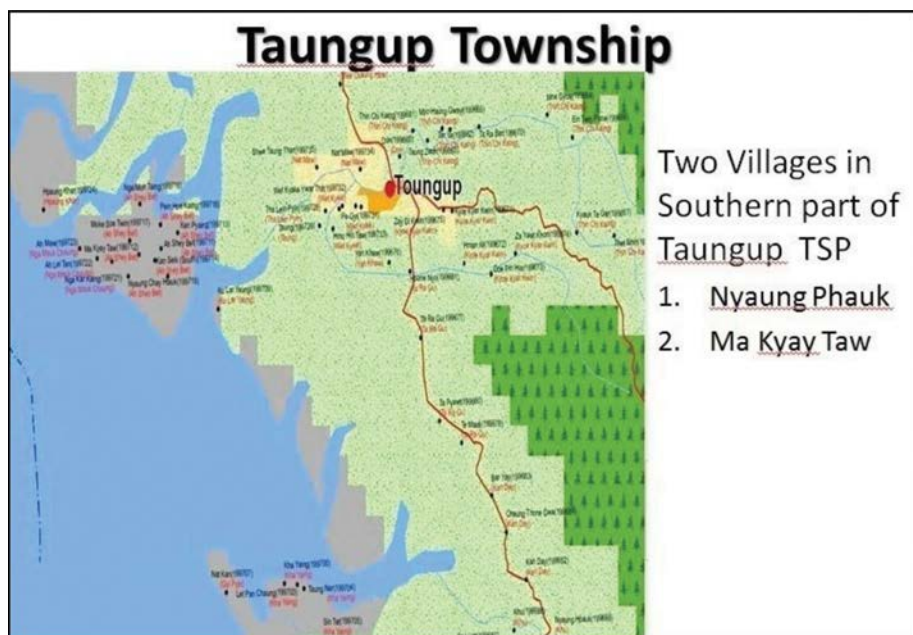


**Annex 3. Map of Northern Taungup Township**



Source: www.mimu.com

**Annex 4. Map of Southern Taungup Township**



Source: www.mimu.com

**Annex 7. FGD Participant Profiles Held in Green Field International, Yangon on  
11<sup>th</sup> November, 2013**

<b>Sr. No</b>	<b>Name</b>	<b>Male/Female</b>	<b>Title</b>
1	Dr. HlaHlaThein	Female	MD GFI Co., Ltd.
2	Dr. Tin Hla	Male	Retired Director, LBVD
3	Dr. KyawMyintSoe	Male	Retired Director, LFME
4	Dr. Chit Swe	Male	Livestock consultant, Broilers Associates

**Annex 8. FGD Participant Profiles Held with Township LBVD**

<b>Sr. No.</b>	<b>Name</b>	<b>Male/ Female</b>	<b>Title</b>	<b>Date of FGD</b>
1	Dr. KyawPhoe San	Male	Veterinary Officers	5.10.13
2	U U Saw Hla	Male	Retired Assistance Veterinary Surgeon	5.10.13
3	U OuePhaungMaung	Male	Retired Assistance Veterinary Surgeon	5.10.13
4	Dr. New NewAung	Female	Veterinary Officers	31.10.13
5	Dr. Aung Moe Min	Male	Veterinary Surgeon	31.10.13
6	U ZawZaw	Male	Village Veterinary Worker	31.10.13

**Annex 9. Participant Profile for In-Depth Interviews in Pauktaw Township Villages**

<b>Sr. No</b>	<b>Name</b>	<b>Village/ Township</b>	<b>Male/Female</b>	<b>Title</b>	<b>Date of Interview</b>
1	U Sein Nu Ag	NatTaungByin	M	Administrator	17.10.13
2	U Saw Ye Pru	NatTaungByin	M	Village Leader	17.10.13
3	U Mg TunMyint	NatTaungByin	M	Village Leader	17.10.13
4	U Ah TheunChay	TaungNyo	M	Administrator	18.10.13
5	U Mg Than Chay	TaungNyo	M	Village Leader	18.10.13
6	U San MraTun	TaungNyo	M	Village Leader	18.10.13
7	U KyawNyunt	LatPanBya	M	Administrator	20.10.13
8	U WaiZanPru	LatPanBya	M	Village Leader	20.10.13
9	U Mg Aye Chan	LatPanBya	M	Village Leader	20.10.13
10	U Mg TheinTun	Lat Ma Yar	M	Administrator	21.10.13
11	U KaungKyawZan	Lat Ma Yar	M	Village Leader	21.10.13
12	U EinTunAung	Lat Ma Yar	M	Village Leader	21.10.13

**Annex 12. Land Ownership \* Township of Study (Cross Tabulation)**

Status of Land Ownership		Township of Study		Total
		Pauktaw (Number of Respondents)	Taungup (Number of Respondents)	
Landless		17	16	33
Land Ownership	1 to 5 arcs	14	46	60
	6 to 10 arcs	12	12	24
	11 to 20 arcs	15	1	16
	21 to 40 arcs	17	0	17
	41 to 80 arcs	4	0	4
	81 to 120 arcs	1	0	1
<b>Total</b>		<b>80</b>	<b>75</b>	<b>155</b>

Source: Survey Data

**Annex 13. Socioeconomic Status of Respondents and Cattle Owners**

Socioeconomic Status	Cattle Owner	(%)	Non-Cattle Owner	(%)	Total No. of Respondents	% In Total
High	39	76.5	12	23.5	51	32.9
Middle	40	74.1	13	25.9	53	34.8
Low	15	30.0	36	70.0	51	32.3
<b>Total</b>	<b>94</b>	<b>100.0</b>	<b>61</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>

Source: Survey Data

**Annex 14. Desire for Livestock Commercialized Business**

Do you want to do livestock commercialized business?			
	Yes, want to do	No, don't want to do	Total
<b>Pauktaw</b>	60 respondents(75%)	20(25%)	80
<b>Taungup</b>	60(80%)	15(20%)	75
<b>Total</b>	120(77.4%)	35(22.6%)	155

Source: Survey Data

**Annex 19. Ability to Earn Market Value of Animals**

<b>Response</b>	<b>Number of Respondents</b>	<b>Percent</b>
Yes, can get current price of worth	145	93.5
No, cannot get current price of worth	10	6.5
<b>Total</b>	<b>155</b>	<b>100.0</b>

Source: Survey Data