

# The Integration between the Smallholder Beef Cattle Group and the Large-Scale Farm for Commercial Production

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## ABSTRACT

Beef cattle is one of the major livestock raised in most parts of Thailand especially in Northeastern part also including the Central region (Lindsay Falvey, 2000).

There were two main beef cattle farming systems in Thailand particularly in the Central region : the Smallholder Beef Cattle Group(SBCG), and the Large-Scale Farm (LSF). These two farming types were roughly differentiated by their herd size, and their capacity of farm management and production. The qualitative research mainly focused its study in major factors that could affect to the effective integration between the SBCG and the LSF. This qualitative research was done under the in-dept study process in two types of farm levels under the case studies context: the LSF and the SBCG in Suphanburi Province.

The SBCG which was selected as the representative of the smallholder Beef Cattle Groups consisted of 25 members who have initiated continuously around 5 years for its group operation. The other was the LSF (Large Scale Farm) which purposively selected to be the case study named "Lungchaw Farm" which had its main integration activities strategies of Win & Win management from the beginning up to present.

Data gained from qualitative approaches were the structured and the unstructured interview, the direct and indirect observation, the focus group activities, and the relevant secondary data.

From the literature review, there were 4 main factors : the socio-economic factors, the socio-cultural factors, the management factors, and the environmental factors which proved to be major factors that could influenced to the effective integration between the SBCG and the LSF.

Most of the respondents were males, the average age was 41 years old with the primary school level. Their family members were average 4 persons and most of them had their own land with average 26.95

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rais per family. Majority of their farming system were the integration between crop and animal raising. Smallholders beef cattle raising were their dominant farming type. For the selected LSF case, their modern farm technologies and management were used and applied to the whole production system and facilitated to the SBCG under the integration farming system.

The results proved significantly that four main factors had their positive impact on the effective integration between the SBCG and the LSF. This results indicated the possibility and need to the integration model between the SBCG and the LSF in the quality beef cattle production. This model could be mentioned as the innovative model which open the opportunity for any smallholder to develop themselves in doing quality farming system by their own.

**Key words:** smallholder beef cattle group, large-scale farm, commercial production, the integration beef cattle production system

## INTRODUCTION

Beef cattle is one of the major livestock raised in most parts of Thailand especially in Northeastern part also including the Central region. A boom in demand for export cattle in the 1920s led to a three-fold increase in cattle prices which also led to changes in many of main relevant technologies and farm management such as disease control, pasture improvement, animal breeding, and also quality farm management under the Government allocation to fulfil the modernised livestock industries (Lindsay, 2000).

There are two main beef cattle farming systems in Thailand in general, and in the Central region in particular: the Smallholder Beef Cattle Group(SBCG), and the Large-Scale Farm (LSF). These two farming systems is roughly differentiated by their herd size, and their capacity of farm production.

Most of the rural people considered as the smallholders, mostly live in rural areas and some in

puri-urban. Due to limited area and growing populations, most rural farms are relatively small in size and generally practice mixed farming, with crops as a major component and livestock to provide draught power and manure as well as food and cash income. The role and contribution of animals are far more complex than that in special commercial farms since there exist so close and sophisticated relationships among farm family, animals, crops, social and agricultural systems.

The small farm animal production helps conserve animal genetic diversity, there are numerous breeds of native cattle, etc.

While the LSF or sometimes we call as “intensive farming” or the intensification of animal production which is the type of animal farm which can operate competitively at the commercial or the industrial farm level which high level of technologies are employed : from farm raising up to the quality market (Department of Livestock Development, 2001).

Commercial livestock production generally

use exotic stock or crossbreeds, in order to obtain the maximum yield.

Suphanburi province is one of the provinces in Central part of Thailand which has its good capacity for animal raising especially the quality beef cattle raising which is now expanding its cooperation network in other areas of the province up to the Central region and also the other areas of the country. The successful beef cattle farm case study named "Lungchaw Farm", in Dermbang Nangbuat District is one of the examples in Suphanburi province. This case study is a very good example in its cooperation in type of integration management of their beef cattle raising for the SBCG, and the LSF. Their interrelationship and collaboration under the social, economic, and environment aspects has its significantly important to the rural people development especially for the sake of economic development, and human resources development particularly for the smallholder group.

Integration Farm System which has its origin idea from the concept of integration of animal production with crops. The integrated farmings are characterized by complementary and supplementary relationships between two or more commodities in the system, the combined result of which is higher total returns. Large ruminants provide draught power as well as manure to be used as fertilizer in crop production, which crops provide wastes such as straw and by-products such as bran for animal feed. Fodder trees such as leucaena provide leaves for animal feed and firewood for household use, and preserve soil fertility in the ley-farming system. Wherever water resources are available, ducks, pigs,

and chicken can be integrated with fish and vegetable production in order to obtain higher returns than mono-culture production can give. Diversification of crops and livestock with appropriate management practices can also reduce crop losses due to pests. Furthermore, diversification of agricultural commodities can also help reduce problems of market fluctuations and economic uncertainty (Charan, 2002).

Arora, 1962 noted that the integrated resource management is helpful for record keeping and evaluating an operation. These functions are vital to assess the economic health of the operation and to measure progress towards goals for beef cattle production.

Beef cattle for holistic management is a decision making process that promotes the establishment of a single goal for promoting and production of the beef, which includes quality of life, plans for income generation, and the future vision for the land. The holistic practitioner considers the effects on the goal of daily and long-term decisions for beef cattle raising and integration of the farmers.

Sustainable beef production should be implemented from a whole-system prospective enhancing of land, water, energy, labor, technology, and capital management to meet the goals of the farmer and resiliency. The social and environmental factors concerns its including of food safety, quality, and environmental conservation. This points out the importance of matching production goals with social and environmental objectives (Alim, 1978).

Beef cattle integration management between the two types of farming system : the SBCG and the

LSF in this study focused its study in the topic of “The Integration between the SBCG and the LSF for Commercial Production : Case study in Suphanburi Province”. This in-dept study in the two mentioned farms could be one of the innovative management for the beef cattle farming system of Thailand too which its concepts is mainly based like types of integrative farming system which has already mentioned above.

## MATERIALS AND METHODS

This qualitative research mainly focus its study in what kinds of major factors that could affected to the positive or the effective integration between the SBCG and the LSF. This qualitative research was done under the in-dept study process in the case study of two types of animal farm levels : the LSF and the SBCG in Suphanburi Province.

The SBCG which was selected as the representative of the smallholder Beef Cattle Groups of the study consisted of its 25 members who has initiated and now running their beef cattle group activities up to presented which is around five years of its group operation and aimed to expanding including upgrading their farm quality to the commercial demands.

The other is LSF (Large Scale Farm) which purposively selected to be the case study named “Lungchaw Farm”. The main criteria in selecting “Lungchaw Farm” as being the case study is their integration farming activities which has already initiated and operating together with the SBCG up to presently. And their integration activities seems

to proved itself in it effective integration between the 2 type of farms : the SBCG and the LSF. One of its main strategies used which affected to their successful integration is their Win & Win strategy. The owner of the farm was the key informant of this study.

Data gained from all kinds of qualitative approaches such as the structured and the unstructured interviews were used, both of the direct and indirect observation were used. Also included with some of the relevant secondary data such as the beef cattle farm documents which could be included by its type, its history, and its management, etc. The group discussion, the focus group techniques were mainly used.

For the criteria in selecting the relevant factors which assumed to affected the effectiveness of the farming integration between the LSF and the SBCG, many of the relevant literature studies found that the main factors which are mostly affected to the effectiveness of beef cattle farm management are generally covered in 4 main factors : 1) the socio-economic factors, 2) the socio-cultural factors, 3) the management factors, and 4) the environmental factors. So, this in-dept case study would also follow that criteria to be as the study framework.

In general practices, beef cattle integration production of the SBCG and the LSF needed to be under its full systematic management together with full attention. Therefore this study was focused its study in the topic of “The Integration between the SBCG and the LSF for commercial production : Case study in Suphanburi Province”. According to the result of the study, the researchers aim to

dissiminate this innovative farming management to the development of beef cattle raising in Thailand under this integration model between the SBCG, and the LSF of Suphanburi area. This could be contribute to any level of development for the beef cattle industry starting from the grassroot level to the provincial level as well as the national level during the times and in this coming up future (DLD, 2000).

## RESULTS AND DISCUSSION

The findings reveal that to achieve a sustainable integration between smallholder beef cattle groups and the large-scale group or farm have to use the holistic farming systems approach. The said holistic farming system has to consider all production factors of the system which is included : land, water, energy, technology, capital, and management, to meet the goals of the farms. The results showed that both groups : the SBCG, and the LSF were strongly integrated and that integration was reinforced by good management practices that included animal feeding, veterinary care, animal housing, water, sanitation, and the management of whole integration process.

The study has revealed that the LSF had a very effective collaborated with the SBCG in ways that both can have mutual benefits from each other. The LSF takes its role as facilitator and trainer for the SBCG which all of its members are mostly the smallholders. The SBCG takes its role as the producer who works at the farm level. Their participatory working starting from planning, operating, monitoring, and evaluating together under their main

factors which started from the socio-economic activities, the socio- cultural context, the management factor, and also the environment factor. This could be said that this integration activities are running up their production activities from farm level up to the market level, and also to the customer consumption level.

The group discussion and the focus group technique were mainly done with the SBCG members. All the SBCG members agree in the benefits of the integration system which could be said as one of the supportive tool for smallholders to let them gain more opportunity to produce more quality farm as well as more generated income among them. So, it could be said that this integration model could at least gurantee for the samllholders income.

And for the aspect of the socio- cultural factor, it found that this integration model could be very compatible with the livelihood of the Thai samllholders. Because mostly the rural people of Thailand, they naturally group themselves to help each other but mostly more on voluntary efforts without any kind of systematic management. So, when this integration model being implemented into their farm system, it found to be quite compatible accepted to their livelihood. But at the beginning of the integration process, the SBCG might have its role only as the farm producer, but gradually this kind of role could be developed into the farm manager role who can manage their own quality farm in the coming future.

To prevent degradation of the natural resources used for cattle production in farm production, the

SBCG and the LSF agreed to use the integration farming management under the sustainable resource management principles. Because from the TAC/ CGIAR, 1989 definition involves the successful management of resources to satisfy changing human needs, while maintaining or enhancing the quality of the environment and conserving natural resources. To preserve the bio-diversity is an important parts of conserving the environment which is considered also among the members of both farm levels : the LSF and the SBCG.

This integration model among all those main factors proved to be positively agreed among all members from both farm levels. The systematic integration management should needed to be done under the holistic process of livestock farming system then the output of any type of farm will come out under the concepts of sustainable production which composed of social –economic and environmental responsibility and compatibility with cultural values. Their food safety and food quality issues for production goals to satisfy consumer's preferences and address their concerns These factors can contribute to higher livestock production in other areas both in the province and the others.

Some of the fundamental information such as their education, and their occupation of the SBCG members who are the main respondents of this indept study as follow in Table 1 and Table 2.

Education level of the SBCG members were mostly at the primary level ( 68% ) follow by the senior high school ( 28%) and only few (4%) graduated at the college degree level as show in table 1.

The SBCG members mostly have their main occupation in integrative farming system (48%) follow by being only the farmer (28 %). Only few of them are being the civil servant (8%) follow by being the livestock trader(4%) as show in Table 2.

## CONCLUSION

It is generally agreed that the organization of smallholders is a key factor in successful livestock production. In developing backyard production into economically viable livestock enterprises, there are limits to what individual farmers can achieve. The development of small farm enterprises has been most successful when farmers are organized, either horizontally into agricultural cooperatives, or vertically so that production is tied to the firms which supply farm inputs and handle the marketing of animals and/ or processing of their products. Many successful programs combine these in the form of a strategic partnership between a local group or the could be in type of local cooperative such as the smallholder groups and the commercial farm.

The integration between the SBCG, and the LSF at Suphanburi province was one of the significant case study for the future development of the rural community at this area, Majority of the farmers (64%) owned cattle and also take part in collective raising so it would be a more useful to have a data base on research, technical information and practical experiences, for supporting all related factors: socio-economic, socio-cultural, management, and environmental factors. This study could be developed to be the model of beef cattle production

**Table 1** Educational level of the SBCG members.

(n=25)

Educational level	Number of frequency	Percentage
Illiterate	-	-
Primary(1-6)	17	68.0
Junior high school	-	-
Senior high school	7	28.0
Certificate	-	-
Bachelor Degree	1	4.0
Master Degree or above	-	-
	25	100.00

**Table 2** Main occupations of the SBCG members.

(n=25)

Occupation	Number of frequency	Percentage
Crop farmer only	7	28.0
Livestock raising with crop farming	12	48.0
Livestock trading	1	4.0
Civil servant	2	8.0
Others	3	12.0
	25	100.00

farm in this coming future. Because the effective integration between the SBCG, and the LSF could enable the production more in high quality of beef and farmers satisfaction.

In the traditional backyard production system, livestock eat whatever forage is available, supplemented by crop residues, cut grasses, and any other foodstuffs the farmer can find. Typically, traditional livestock breeds can tolerate a rather poor

diet but are slow to gain weight. Once farmers change to more intensive commercial production, the feed supply becomes a major problem. High performance livestock need a high quality diet. The small size of Asian farms limits the amount of feed that can be grown on the farm itself, and most farmers use feed concentrates. Nearly all Asian countries are highly dependent on imported foodstuffs, and feed is generally the largest part of production

costs. Programs to lower the cost of feed and make more use of local feed resources can be a great help in improving small farm efficiency, and integration with Large-scale farm. to ensure the ultimate goal of this integration, it should be encouraged and emphasized to proceed and develop this study.

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## LITERATURE CITED

Alim,K.A. 1978. "The productive performance of Egyptian Beef cattle and buffalo in a dairy Herd". *World Rev.*14 (2),57-64).Cairo; Animal Production Research center.

Anne, Fanatico. 1999. "Production System In Tropical Countries". pp147-62. *In Sustainable Beef Production* UK: Blackwell Science Ltd.

Arora, S.,P. Bajpai, L.D And A.R. Muley. 1962. *Influence of Dry Period on Beef Cattle and Dairy Cattle Milk Yield and Effects of Season on Lactation Yield and Lactation Days of Murrah Buffaloes*. Mhow: Animal Husbandry Research Center.

Charan Chantalakhana and Pakapun Skunmun. 2002. *Sustainable Smallholder Animal Systems in the Tropics*. Kasetsart University Press, Bangkok, Thailand.

Department of Livestock Development (DLD). 2001. *Report paper on Livestock Production*. Bangkok: Livestock Extension Division.

FAO, 1999. *Country Information Brief For Livestock Development Programs In Tropical Countries*. Different Volumes (1983-1998). Rome: FAO

Lindsay Falvey.2000. *Thai Agriculture : Golden Cradle of Millennia*, Kasetsart University Press, Bangkok, Thailand.

Ron, Morrow.1999. *Sustainable Beef Production*. Livestock production guide. Washington DC: International Food Policy Institute.