Assessment of cattle marketing in Ea Kar district, Daklak, Vietnam in 2008

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Acronyms and Abbreviations

AI Artificial Insemination
CIAT Centro Internacional de Agricultura Tropical
DARD District Agriculture and Rural Development
FAP Fodder Adoption Project
GDP Gross Domestic Product
HMC Ho Chi Minh City
HH Households
Laisind A stabilised cross cattle between Red Sindhi and native (Yellow) cattle
NIAH National Institute of Animal Husbandry
TNU Tay Nguyen University
VND Vietnam Dong, Vietnam’s currency
1 Summary

This paper describes and discusses the results of a Cattle Market Study conducted in Ea Kar district, Daklak province of Vietnam in 2008. Since 2000, CIAT, TNU and NIAH, in partnership with the Ea Kar Extension Service and District Government, have worked in Ea Kar to introduce the concept of cultivating forage grasses and legumes on farmers’ land for improved smallholder beef cattle production. By 2007, more than 2400 smallholder farmers had adopted cultivated forages to feed to their animals. This new feed resource has enabled farmers to change their cattle production system. They have intensified their production systems from grazing to pen-fed cattle using planted forages as the main feed for fattening, and by changing from local breeds to raising Laisind and cross-bred cattle.

This intensification has resulted in much higher productivity and beef quality, and has enabled local traders to develop access to higher paying city beef markets. Prior to 2004, all cattle produced in Ea Kar were sold for markets in Ea Kar and in the provincial capital Buon Ma Thuot. By 2008, 50% of all cattle produced in Ea Kar were sold to city markets in Nha Trang, Da Lat and Ho Chi Minh City. Market demand for high-quality beef is strong and there are opportunities to expand production of cattle that meet the demands of exacting city markets.

Conversely, the market for smaller, native animals is less promising and prices paid for such animals remain low. Unfortunately, many farmers in Ea Kar (and the neighbouring districts such as M’Drak) practicing extensive cow-calf production systems are still producing local cattle breeds despite there being a low demand for such animals. This means that there are insufficient Laisind and cross-bred calves and cattle available for fattening for city markets. Addressing this lack of supply of high-quality animals for beef production is a high priority.

The Ea Kar example has shown that smallholder farmers can successfully and rapidly change from traditional cattle raising system to a productive market-oriented production system that can compete in city markets with imports from other countries. The long-term partnership between farmers, traders, extension workers and researchers in Ea Kar has contributed significantly to this change.

2 Introduction

Ea Kar is one of 13 districts in Daklak province. In Ea Kar, agriculture accounted for about 65% of district GDP in 2007 (Daklak 2008). Cattle production is a very important agricultural activity. Ten thousand households in the district raise cattle, and income from cattle production accounts for 40% of the total income of these households. In the past, cattle production was practiced at a ‘subsistence’ level: farmers used cattle for draught power and raised cattle to increase herd size as a form of saving. In this subsistence production system, the link between producers and markets was minimal. The results of a cattle market study in 2004 (Khanh et al. 2004) showed that farmers sold cattle when:

- They needed money for large expenditure items or family emergencies;
- Cattle were old, ill or no longer able to produce calves;
- There was inadequate grass to feed the herd;
- They no longer needed an animal for draught power;
- Male calves reached the age of one year;
- They wanted to change their cattle breed from local to improved breeds.

In 2000, forage production was introduced by researchers from CIAT, TNU and NIAH during a project which worked in partnership with the Ea Kar extension service and local government. With this introduction, cattle production in the district started to change and by 2007, more than 2400 households had adopted forages for feeding to cattle. This resulted in
new cattle management systems: cut and carry for fattening cattle; cut and carry for cow-calf production and a change from raising the local cattle breed to raising Laisind or cross-bred cattle (Laisind x exotic breeds such as Droughtmaster). Concurrently, local traders developed new markets for these higher quality animals. These changes meant that production in the district changed from a traditional to a more market-oriented system.

In a market orientated production system, farmers raise cattle as a commodity for markets, so market information is important for the production of the type of cattle demanded by the market. In Ea Kar, during the last 5 years, market information has come to farmers mainly from the local traders in the district and through personal contacts.

This study focused on the collection and analysis of information and data from key actors in the beef production to consumption chain. The study was designed to provide basic information for stakeholders in order to improve both production and marketing systems. Information on market demands and the production situation was analyzed and discussed in order to identify opportunities for improving the cattle production and marketing system in Ea Kar, providing benefits for both producers and traders. The objectives of this market study were to:

1) Describe the current cattle market environment and assess its influence on cattle production in the area.
2) Analyse constraints and opportunities for improving cattle production and trading systems in Ea Kar to meet the requirement of the changing market environment.

3 Methods

A field survey was conducted between June 15th and September 15th 2008 by the Fodder Adoption Project (FAP) partners from TNU and Ea Kar district (Table 1). Destination market surveys were carried out in Buon Ma Thuot, Da Lat and Ho Chi Minh City in December 2008.

The study used the Rapid Market Appraisal (RMA) method, developed for agricultural commodities (Wandschneider et al., 2007). The main components of the study were:

1) A review of research and interventions in cattle production and the market chain in the Ea Kar district.
2) Collection of secondary data and information.
3) Group discussions with three farmers’ groups, each of which practiced one of three different cattle production systems (Table 2):
   - Extensive grazing system
   - Intensive cow-calf system
   - Fattening cattle system.
4) Group discussion with 8 small and 4 large traders in Ea Kar which focused on the market chain and trends in trade patterns, and discussed constraints and opportunities for improving the cattle marketing system.
5) Individual interviews with traders and authorities were completed. These were designed to gather information on production and market characteristics; numbers of cattle sold; cattle trade pattern; quantity, quality and supply of cattle; and demand trends.
6) Interviews with individual traders and other stakeholders involved in the chain at the three main destination markets of Buon Ma Thuot, Da Lat City and Ho Chi Minh City (HMC), where most of cattle from Ea Kar were sold. The interviews were designed to elicit information on market demands and consumers’ comments on beef cattle from Ea Kar.
7) A feedback meeting with all stakeholders in Ea Kar to discuss the results of the market study and explore opportunities for improving cattle production and marketing.
TABLE 1: CATTLE RMA TEAM MEMBERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Truong Tan Khanh</td>
<td>Site coordinator, Deputy Dean of animal production and veterinary science of Tay Nguyen University</td>
<td>Main organiser of the process, liaison with provincial, district and commune authorities and destination market.</td>
</tr>
<tr>
<td>Dr. Van Tien Dung</td>
<td>Head of Animal Production Department, Animal Production and Veterinary Science of Tay Nguyen University</td>
<td>Facilitator for Focus Group Meetings, main technical resource person.</td>
</tr>
<tr>
<td>Mr. Nguyen Van Ha</td>
<td>DARD in Ea Kar</td>
<td>Facilitator for Farmer/Trader group discussions, Individual interviews with traders, authorities in the district and destination market.</td>
</tr>
<tr>
<td>Mr. Hoang Van Nhien</td>
<td>Ea Kar Extension</td>
<td>Facilitator for Farmer/Trader group discussions, Individual interviews with traders, authorities in the district and destination market.</td>
</tr>
<tr>
<td>Mr. Tran Van Dong</td>
<td>Ea Kar Extension</td>
<td>Facilitator for Farmer/Trader group discussions, Individual interviews with traders, authorities in the district and destination market.</td>
</tr>
<tr>
<td>Mr. Ngo Van Hieu</td>
<td>Trader in Ea Kar</td>
<td>Destination market survey team member.</td>
</tr>
<tr>
<td>Mr. Kieu Thanh Dung</td>
<td>Vice Chairman of Ea Kar district</td>
<td>Destination market survey team member.</td>
</tr>
<tr>
<td>Mr. Nguyen Tan Loc</td>
<td>Chairman of Ea Kar district</td>
<td>Destination market survey team member.</td>
</tr>
<tr>
<td>Prof. Bui Xuan Anh</td>
<td>Thu Duc University, Ho Chi Minh City</td>
<td>Facilitated the destination market survey in Ho Chi Minh City.</td>
</tr>
<tr>
<td>Dr. Werner Stur</td>
<td>CIAT project leader</td>
<td>Contributed to planning, analysis and writing of this report.</td>
</tr>
</tbody>
</table>

TABLE 2. PARTICIPANTS IN CONSULTATIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Consultation</th>
<th>No of people participated</th>
<th>Location</th>
<th>Responsible researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Extensive grazing systems farmers’ group</td>
<td>30</td>
<td>Ea Pal, Ea Gar and Ea Knop villages in Cu Ni commune</td>
<td>Khanh and Nhien</td>
</tr>
<tr>
<td>2</td>
<td>Intensive cow-calf systems farmers’ group</td>
<td>30</td>
<td>Doan Ket and Chu Cuc villages in Ea Kmut commune, Village No.2 in Xuan Phu commune, Village No.11 in Cu Ni commune</td>
<td>Dung and Nhien</td>
</tr>
<tr>
<td>3</td>
<td>Fattening cattle systems farmers’ group</td>
<td>30</td>
<td>Chu Cuc village in Ea Kmut commune, Village No.2 in Ea Dar commune and Village No.8 in Ea Pal commune</td>
<td>Dung and Ha</td>
</tr>
<tr>
<td>4</td>
<td>Traders’ group</td>
<td>12¹</td>
<td>4 large traders and 8 small traders</td>
<td>Khanh and Dung</td>
</tr>
</tbody>
</table>

¹ All 8 large traders of the district, as well as 12 smaller traders known to the extension office were invited to attend the meeting. 12 of these traders were able to attend the meeting.
4 Results

4.1 Cattle production systems in Ea Kar

Stakeholders described different types of cattle production:

- Extensive cow-calf production: Cattle were grazed on natural grasslands during the day and no, or very little, additional feed was supplied at the stable at night. Farmers practicing this production system raised cattle to produce calves, which they kept to increase herd size and sold whenever the family needed money.

- Intensive cow-calf production: Cows and their offspring were grazed for 1-3 hours each day around the farm and kept in stables for the remaining time. Farmers cultivated grasses and cut these daily to feed their animals. Many farmers practicing intensive cow-calf production raised cattle to produce their own calves for growing, fattening and sale for slaughter. Others sold weaned calves and yearlings to other farmers to grow/fatten or use for breeding. Cultivated grasses were the main feed for animals, and these were sometimes supplemented with locally-made concentrate.

- Intensive cattle fattening: Cattle were kept in stables and fed ad libitum with cut, cultivated grasses in the stable until ready for slaughter. Farmers either bought (i) thin, older cattle for short-term fattening (1-3 months) prior to sale for slaughter or (ii) grew/fattened young male cattle for longer periods (up to 6-18 months) for beef destined for city markets, and young female cattle for sale to other farmers. Most farmers fattening cattle raised 1-3 cattle at a time (a few farmers raised 5-10 cattle) and repeated this 2-4 times per year.

Farmers thus could be characterised in practicing one of three cattle production systems:
1) Extensive cow-calf production
2) Intensive cow-calf production (and fattening of male calves for slaughter)
3) Intensive cattle fattening

4.2 Cattle breeds used in the different cattle production systems

The breed of cattle raised by farmers varied according to the production system. In extensive cow-calf production, farmers used predominantly native cows (Table 3) and either local or Laisind bulls (Table 4). Farmers practicing intensive cow-calf production used Laisind and cross-bred cows (Table 3) and mostly used artificial insemination (AI) with semen of exotic breeds with a Laisind bull as backup (Table 4).

In cattle fattening systems, farmers fattening thin, older animals used both local and Laisind breeds while farmers growing/fattening young cattle used either cross-bred and Laisind breeds (Table 5).

<table>
<thead>
<tr>
<th>TABLE 3. BREED OF COWS USED IN COW-CALF PRODUCTION SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer groups</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Extensive cow-calf group</td>
</tr>
<tr>
<td>Intensive cow-calf group</td>
</tr>
</tbody>
</table>

\[1\] Cross-bred = a cross between Laisind and exotic cattle breeds such as Brahman or Droughtmaster
### Table 4. Breed of Bulls or Semen (AI) Used in Cow-Calf Production Systems

<table>
<thead>
<tr>
<th>Producer groups</th>
<th>Bull breed / semen used (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local bull</td>
</tr>
<tr>
<td>Extensive cow-calf group</td>
<td>50</td>
</tr>
<tr>
<td>Intensive cow-calf group</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Using artificial insemination with semen of exotic breeds such as Droughtmaster and Brahman

### Table 5. Breeds Used in Cattle Fattening Systems

<table>
<thead>
<tr>
<th>Producer groups</th>
<th>Breeds in use (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local</td>
</tr>
<tr>
<td>Fattening older, thin cattle (%)</td>
<td>50</td>
</tr>
<tr>
<td>Fattening young cattle (%)</td>
<td>5</td>
</tr>
</tbody>
</table>

1 Cross-bred = a cross between Laisind and exotic cattle breeds such as Brahman or Droughtmaster

### 4.3 Stakeholders

The main stakeholders in the production and marketing chain in Ea Kar were farmers (producers), small traders, large traders and local slaughterhouses. There were no brokers who worked on a commission basis.

**Farmers:** In the market chain, local farmers were the producers using three distinctive cattle production systems: Extensive cow-calf system, intensive cow-calf (+ fattening) system, and cattle fattening system. A survey, carried out by the Fodder Adoption Project in 2007, showed that there were approximately 7700 households practising extensive cow-calf production, 1800 households practising intensive cow-calf production, and 500 households practising cattle fattening.

**Small traders:** Small traders bought cattle directly from farmers. These traders, using their own money, purchased cattle from farmers and then sold these to large traders, local slaughterhouses or to other farmers for fattening or breeding. The traders benefited from the difference in price between the farm gate and their buyers. On average, these small traders bought and sold 3 to 7 cattle per week. Often, small traders were local farmers, and trading was one of several household livelihood activities. There were approximately 40 small traders in Ea Kar; with 1-3 small traders active in each commune.

**Large traders:** These were traders who bought cattle from small traders or directly from farmers. They collected, bulked and then transported and sold these animals to markets outside Ea Kar or Dak Lak. The large traders in Ea Kar sold cattle mainly to the cities of Buon Ma Thuot, Da Lat, Ho Chi Minh and Nha Trang. 15 large traders were operating in Ea Kar. 13 traders were based in Ea Kar district, one trader was based in Da Lat and one trader based in Buon Ma Thuot. The large traders from Da Lat and Buon Ma Thuot had offices in Ea Kar and employed staff to buy cattle from small traders or directly from farmers. The traders' group estimated that, on average, 80 cattle per day were transported and sold to markets outside Ea Kar by the 15 large traders.

**Local slaughterhouses:** In Ea Kar there were 7 local slaughterhouses, all of which were privately owned. The owners of these slaughterhouses bought cattle directly from the farmers, slaughtered the cattle and sold the beef to different markets in the district and/or transported chilled beef to markets in other provinces/cities, mainly Nha Trang.
4.4 Market chains for beef cattle from Ea Kar

The RMA team asked participants in the four group consultations (3 farmer groups and 1 trader group) to draw flow diagrams to show the market chain, as perceived by them, and explain the flows.

4.4.1 Extensive cow-calf farmers’ market chain

Almost all farmers practicing extensive cow-calf production lived in the more remote villages of the district where there were usable grazing lands. Farmers sold 75% of their cattle to small traders in the district, who either sold these animals to other farmers for fattening or sold the animals on to other traders (Figure 1). Another 20% of cattle were sold to farmers practicing cattle fattening and 5% of animals were sold to other farmers for breeding. Farmers in the group didn’t know exactly where their cattle went after being sold to small traders.

Traders reported that most beef cattle from this system were of low quality, being thin, having small bodies and giving little meat. Most of the beef from these cattle was absorbed by local markets in Ea Kar or Buon Ma Thuot.

![Image of market chain diagram]

**Figure 1: Market chain for cattle traded in the extensive system**

Farmers were asked to list the main problems with cattle production and marketing. They identified the following issues:

- Little grazing land. Grazing land was becoming scarce as the land was being used increasingly for reforestation and agriculture.
- Grazing cattle was very time consuming. Farmers reported that free grazing was no longer permitted in many areas, so farmers had to use a lot of labour to supervise and control grazing of their animals.
- Cattle were thin, especially in the dry season, because of lack of feed
- Low prices for their cattle. The prices they were offered for their cattle were low because of their poor quality, and few traders or farmers wanted to buy cattle with a small body size.
- Lack of market information.
- Many farmers from this system had visited other farmers who successfully fattened cattle and practiced intensive cow-calf farming. They wanted to learn more about it but lacked the necessary capital and technologies.
4.4.2 Intensive cow-calf farmers’ market chain

Most all the farmers practicing intensive cow-calf production (and some fattening) were located in intensively cropped agricultural areas near Ea Kar town and other urban areas in the district. They either grew and fattened calves themselves or sold them to other farmers for fattening or breeding. Farmers in the group meeting estimated that 60% of all farmers practicing intensive cow-calf production kept male cattle for fattening and sale to city markets.

Farmers sold fat cattle (50% of animals sold) to large traders (Figure 2). Calves were sold directly to other farmers for breeding (30%) and fattening (10%). The remaining 10% of animals were calves bought by small traders who then sold these on to large traders and other farmers.

The problems faced by farmers practicing intensive cow-calf production were:

- Limited area of land available for planting forages; this limited the expansion of herd size.
- AI service was still poor. In many cases, the AI technician did not respond in time and so the heat cycle was missed.
- Poor body condition of calves after weaning.
- Fluctuating prices for fattened cattle during the 12 months (2007-08).
- Farmers lacked market information, so they were very poor in price negotiations. Traders always gave many reasons for reducing the price: too fat, small body, too old.

4.4.3 Cattle fattening farmers’ market chain

Farmers practicing cattle fattening bought thin cattle and fattened these using cut, cultivated forages supplemented with locally-made concentrates. Many of the farmers practicing cattle fattening were located in intensively cropped agricultural areas near Ea Kar town and other urban areas in the district. Farmers purchased thin, older cattle and calves for fattening from three sources (Figure 3). They bought 80% of animals directly from other farmers in M’Drak
(a neighbouring district which produced mainly local cattle) and Ea Kar, with the remaining 20% of cattle coming from small traders.

Farmers sold all of their fattened cattle to large traders: Eighty percent to large traders from Ea Kar and 20% to traders from Da Lat and Buon Ma Thuot. The cattle were then transported to markets in the cities of Da Lat, Nha Trang, Ho Chi Minh and Buon Ma Thuot.

The problems faced by farmers practicing cattle fattening were:
- Traders always complained that cattle were too fat, in order to reduce the price.
- Fattening cattle required considerable financial inputs, so it was difficult for poor farmers to develop this system.
- The availability of cattle and calves suitable for fattening was limited, so farmers had to spend a lot of time sourcing animals for fattening. Farmers preferred to buy Laisind and cross-bred animals but supply was limited.

**4.4.4 The market chain drawn by the trader group**

Large traders almost exclusively traded fat cattle for slaughter. The trader group estimated that large traders bought approximately 50% of fat cattle for slaughter directly from farmers practicing cattle fattening and intensive cow-calf systems, and the remaining 50% from small traders (Figure 4). Most of these cattle were then transported and sold to traders and slaughterhouses in Buon Ma Thuot (35%), Ho Chi Minh City (20%) and Da Lat (20%). The remaining 25% of cattle were sold to local slaughterhouses, which supplied both the local market and sold high-quality chilled meat to the Nha Trang market (40% of animals slaughtered). Nha Trang is a tourist center on the beach, located 130 km from Ea Kar, with demand for high-quality beef.

Small traders bought 60% of their cattle from farmers in the extensive cow-calf system and 40% from farmers practicing intensive cow-calf production. They sold fat cattle for slaughter to large traders (70% of their trade), thin cattle to farmers practicing cattle fattening and female calves for breeding to other farmers. They estimated that they sold approx. 30% of the animals traded to farmers for fattening or breeding.
**Figure 4: Market Chain of Cattle Traded in Ea Kar, Drawn by the Trader Group**
The problems mentioned by traders were:

- The trading system is too complicated with too many small traders.
- There is no good marketing system for beef cattle in Ea Kar (no market place / limited supply of large number of animals at any one time).
- Farmers and traders don’t have a good relationship; there is a lack of trust. This is partly because of the way prices for animals are established: Traders estimate the amount of meat on the animal and calculate the price while farmers think the animal should be worth more since another farmer got a higher price for his animal.
- There are not enough cattle available that meet the requirements of city markets (large body, good condition and young).
- It is difficult to sell cattle that do not meet market demands (those that are old and thin).
- Small traders complained that they have to spend a long time looking for cattle they can buy in the villages.
- The large traders complained that it takes too long to buy and gather enough good cattle for transporting to destination markets. Sometimes, they lost contracts because they cannot deliver in time and then have to slaughter and sell the beef themselves; this often results in a loss of money.

4.5 Supply trends

Quality trend
The quality of beef cattle from Ea Kar has improved greatly during the last 5 years, as farmers have started to fatten cattle before sale. The traders liked the higher-quality cattle, as did consumers in large markets of Vietnam like Da Lat, Nha Trang and Ho Chi Minh cities. The increasing number of cattle sold to these cities over the previous three years was evidence that the quality of beef cattle from Ea Kar had improved.

The main factors contributing to the quality improvement of beef cattle in Ea Kar were the (i) increased number of cross-bred cattle, and (ii) improved cattle nutrition, through *ad libitum* feeding of cattle with high quality forage from planted grasses and supplementation with locally-made concentrates during the last few weeks of fattening.

Traders mentioned that the major issues are that they cannot buy enough good-quality animals that meet market demands: those that are large, in good body condition and young. They also mentioned that some farmers fattening cattle produce animals that are too fat. This is likely related to feeding too much high-energy concentrates like cassava meal. City markets demand animals that have a lot of meat on the carcass but not when they have a lot of fat.

Quantity trend
The results of the trader consultations in Ea Kar showed that the number of beef cattle sold and transported from Ea Kar had more than doubled during the previous three years from 8000 cattle in 2005 to 17,000 in 2008 (Table 6). Traders explained that since 2005 the number of farmers who fattened cattle had increased rapidly. By 2007, there were 500 farmers who practiced cattle fattening and on average, each household fattened 12 cattle per year resulting in a total of 6000 heads fattened. In addition, there were more and more farmers practicing intensive cow-calf production, who also sold fat cattle. Despite this rapid increase in sales, the total cattle population has been relatively stable, indicating a dramatic increase in productivity and efficiency (Table 6).
TABLE 6: NUMBER OF CATTLE SOLD FROM EA KAR IN THE LAST 5 YEARS

<table>
<thead>
<tr>
<th>Items</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle population in Ea Kar(^1)</td>
<td>23,000</td>
<td>28,900</td>
<td>28,000</td>
<td>28,000</td>
<td>28,000</td>
</tr>
<tr>
<td>Number of cattle sold annually from Ea Kar(^2)</td>
<td>6,000</td>
<td>8,000</td>
<td>10,000</td>
<td>15,000</td>
<td>17,000</td>
</tr>
<tr>
<td>Percentage of cattle sold as a % of total cattle population (%)</td>
<td>26</td>
<td>28</td>
<td>36</td>
<td>53</td>
<td>60</td>
</tr>
</tbody>
</table>

\(^1\) Dak Lak Province Statistical Office (2009).
\(^2\) Cattle being sold from Ea Kar; as estimated by traders in the consultative meeting.

Prices and trading margins
While the study did not attempt to collect prices and trading costs, traders consistently mentioned margins of VND 4,000 per kg of meat on an animal for each step in trading. Farm gate prices paid where in the order of VND 90,000 – 92,000 per kg of meat on animals at the time of the survey. At the same time, beef price in supermarkets in destination market sold for VND 110,000 – 120,000 per kg.

4.6 Demand trends
Researchers visited and interviewed traders and slaughterhouse staff and owners in destination markets in Da Lat, Nha Trang, Buon Ma Thuot and Ho Chi Minh City. Combining the information collected in these consultations and the discussions in Ea Kar, the trends in market-demand were identified as follows.

Quantity trend
The demand for beef overall, and consumption of domestic beef, has continued to increase in all of the markets surveyed. All traders and slaughterhouses said that the demand for domestic cattle continued to be very high, despite the fact that there was strong competition from imported beef with the recent reduction of tax on imported beef. Imported beef from countries like Australia and the USA provided a big challenge as these were higher quality than the average local beef and priced cheaply. The destination survey carried out in Ho Chi Minh in December 2008 showed that, on average, 300 to 400 heads of cattle were slaughtered each day in Ho Chi Minh City. Most of these animals came from the Mekong delta, the Central Coast and the Central Highlands of Vietnam.

Beef consumption in Vietnam has increased annually. AGROINFO (2008) estimated that the amount of beef consumed in Vietnam increased from 200,000 tons in the year 2002 to 268,000 tons in 2008, when per capita beef consumption was 3.35 kg per person per year. The demand for livestock products had risen steadily over the last few years and was projected to continue to increase, driven by increasing living standards and urbanization. This increasing beef consumption in Vietnam confirms the forecast by Delgado et al. (1999), predicting an annual increase of 3% in demand for meat and 2.7% for milk products in Southeast Asia, resulting in stable and increasing prices for livestock products. Vietnam is one of the countries in Southeast Asia with the fastest growing economies and with more than half of the population is expected to live in urban areas by 2030. This increasing urbanization will inevitably be associated with changes in the patterns of food consumption, as urban diets are usually characterized by higher consumption of livestock products.
Quality trend
The individual destination markets for Ea Kar beef had different quality criteria for accepting beef cattle (Table 7). The two most important factors deciding acceptance and price were the live body weight and the body condition score of cattle. The third most important criteria was the age of animals. The markets in Da Lat and Ho Chi Minh City were looking for relatively young, heavy animals with a body condition score of 4-4.5. Animals that were too fat (body condition score of 5) were not wanted.

Table 7 Characteristics of preferred beef cattle traded in the different markets

<table>
<thead>
<tr>
<th>Quality criteria of cattle sold for slaughter in different markets</th>
<th>Ea Kar</th>
<th>Buon Ma Thuot</th>
<th>Nha Trang</th>
<th>Da Lat</th>
<th>Ho Chi Minh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination markets for cattle from Ea Kar (%)</td>
<td>15</td>
<td>35</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Body condition score (1 = very thin; 5 = very fat)</td>
<td>any</td>
<td>any</td>
<td>First grade chilled beef</td>
<td>≥4</td>
<td>≥4</td>
</tr>
<tr>
<td>Live body weight (kg)</td>
<td>any</td>
<td>any</td>
<td>First grade chilled beef</td>
<td>≥300</td>
<td>≥300</td>
</tr>
<tr>
<td>Age (years)</td>
<td>any</td>
<td>any</td>
<td>First grade chilled beef</td>
<td>≤3</td>
<td>≤4</td>
</tr>
</tbody>
</table>

In Vietnam, the farm price for cattle is based on the amount of lean meat on the carcass, as estimated visually by the traders and farmers. The trader and farmers agree on the amount of lean meat on the carcass and multiply this amount by the price of beef sold at the market at that time. Traders and slaughterhouse staff explained that cattle with a condition score of 4 or higher (on a scale from 1 = very skinny to 5 = very fat) and a body weight of at least 300 kg usually have a lean meat value of 28 - 30% of live weight, while cattle with a lower condition score and/or body weight have a lower lean meat value of 25 - 27% of live weight.

In Ea Kar, traders were willing to pay an extra VND 200,000 for an animal that had been fed mainly on grass (minimal concentrates only); animals supplemented with too much cassava meal were too fat and traders paid less. Traders in Ea Kar were willing to pay an extra VND 200,000 to 500,000/head ($10 – 30 per animal) for cattle meeting all quality criteria of the destination market.

Traders in Dalat did not accept cattle that did not meet the quality requirements. In Ho Chi Minh City, traders accepted them but paid a lower price. Traders in Ea Kar explained that, although the demand for live cattle in Ho Chi Minh and Da Lat was very high, they only sold a small number of cattle to these markets because a small proportion of cattle in the district met the minimum requirements of these markets. The challenge for cattle from Ea Kar was that they had to compete with imported cattle and beef from Australia and America.

Price trends
While the price of many agricultural commodities in Daklak province has been very unstable over the last 7 years, the price of beef sold in markets has increased steadily, despite the recent economic crisis, by an average of 12% per year (Figure 5). This consistent price increase has been a major factor attracting farmers to engage in cattle production. The difference between destination market price and farm gate price (estimated by traders) was relatively small and lower in 2008 than 2005.
5 Discussion

A stakeholder feedback meeting was organized in Ea Kar on 19th January 2009 to report the results of the RMA, confirm the main issues identified and discuss ways of improving cattle production and marketing. Participants included 6 representatives of farmers’ clubs of which 3 were also acting as small traders, 3 large traders, 5 representatives from district administration, 7 commune and district extension workers, three scientists from Tay Nguyen University, one staff member from the provincial DARD and one staff member of the provincial Agricultural Extension Center.

Participants confirmed that there had been significant changes in cattle production and marketing in Ea Kar. Traders estimated that, in 2004, 70% of cattle traded in the district were sold to other farmers for breeding and only 30% were sent to slaughterhouses. Approximately 2/3 of these animals were slaughtered in Buon Ma Thuot and 1/3 supplied the local Ea Kar market. No animals left the province. This was very different by 2008 when 50% of beef cattle were sold to city markets (Nha Trang – chilled beef; Da Lat and Ho Chi Minh City – fresh meat) in other provinces. Prices for animals sold to these city markets were higher but they were subject to strict quality requirements. These could not be met by producing native cattle, as their body size was too small. While Buon Ma Thuot and Ea Kar markets accepted all types of cattle, the Ho Chi Minh City and Da Lat markets accepted only animals with a body weight of at least 300 kg. In terms of demand, there was plenty of scope to increase supply to city markets but there was only limited scope to increase supply in local markets which accepted native cattle.

The strong demand from city markets had influenced cattle production in Ea Kar, and farmers changed their production systems to meet the quality demands of these new markets. Clearly, cultivated forages, which replaced grazing systems, played a major role in enabling farmers in Ea Kar to change from grazing native pastures to fattening cattle in stables. It also enabled farmers to raise Laisind and crossbred cattle, which had a much higher feed demand than local cattle. This change from native to Laisind and crossbred cattle has not been simple and
significant production issues remain. The RMA survey identified several key issues, which were confirmed and discussed during the feedback meeting. These were:

(i) A lack of supply of Laisind and crossbred male calves for growing / fattening from within Ea Kar and from M'Drak, a neighbouring district which supplies predominantly native breed calves but not the urgently needed Laisind and crossbred calves.

(ii) Limited farmer knowledge of how to produce beef cattle most efficiently for meeting market demands.

(iii) The need for improvements in the trading / marketing environment.

(i) Lack of Laisind and crossbred male calves for growing / fattening.

There was a high unmet demand for Laisind and cross-bred calves in Ea Kar. The main sources of calves were other farmers in Ea Kar practising extensive and intensive cow-calf production, and farmers practising extensive cow-calf production in M'Drak, a neighbouring district which supplied calves and thin cattle for fattening. Unfortunately, farmers practicing extensive cow-calf production produced mainly local breed calves while farmers in Ea Kar, who wanted to produce beef for city markets, needed high-quality Laisind and crossbred calves. This mismatch created a lot of discussion during the RMA survey. Farmers practising extensive cow-calf production complained about the low price offered for native cattle by traders while their labour inputs into extensive cow-calf production continued to increase as grazing lands became more and more limited. Furthermore, cattle were very thin during the dry season because of a lack of feed. A cattle market study carried out in M'Drak in 2006 confirmed the importance of Ea Kar as a destination market for calves and thin cattle from M'Drak and identified similar problems for farmers practising extensive cattle production (Bourgeois Luthi et al., 2006).

Participants in the feedback meeting discussed the lack of high-quality calves and agreed on several avenues for improving the supply of high-quality calves:

- **Strengthening the AI service**
  Ea Kar district has developed a good government-sponsored AI network, which covers nearly all communes in the district. Unfortunately, the situation has changed and the AI providers have had to change from a subsidized to a user-pays business system. Previously, the semen was supplied under a subsidy system from different government programs and projects, but this is no longer so. The AI system now has to be run on a commercial basis. This will require some time to develop.

- **Improving the Laisind bull and cow selection**
  A program for cattle breed management is needed to manage cattle breeds in the district. Selection of Laisind cows and bulls to improve breed quality is very important for the production of high quality beef cattle meeting the requirements of the markets. Also, breed plans are needed to help farmers with semen and bull selections for F1 and F2 heifers.

- **Assisting farmers with the change from extensive to intensive cow-calf production**
  Unless more farmers change their production system from extensive to more intensive production methods, the supply of high-quality Laisind and crossbred calf will remain limited. Avenues need to be explored to help farmers with this change; this will involve keeping cows in stables and feeding *ad libitum* cultivated forages. There is a role for both the extension service and traders in promoting this shift in production and assisting farmers in making this shift.
A similar change in production system (more confinement, more on-farm feed production and change of breed) is needed in neighbouring M'Drak to continue its role of supplying calves to Ea Kar for fattening.

(ii) **Limited knowledge of how to produce beef cattle most efficiently for meeting market demands**

Participants in the feedback workshop concluded that farmers producing beef cattle will need to continue to improve their production system to be able to produce beef cattle that comply with increasingly higher market demands. Farmers will need to improve their knowledge of how to produce high quality beef cattle. This encompasses the growing of high quality fodders, and feeding and animal husbandry techniques.

Producing high quality forages is a key ingredient that would enable farmers to reduce feeding costs. The adoption of planted grasses was very high in Ea Kar but there has been little uptake of forage legumes. These have a higher protein contents than grasses but are less productive. Grasses such as *Panicum maximum* and *Pennisetum purpureum* produced a high yield, were easy to cut and manage and responded well to fertiliser application. Farmers needed a lot of feed and, by *ad libitum* feeding of grasses their animals achieved much higher liveweight gains than previously when they used grazing as the main feed source. Thus grasses were the best choice for farmers with small land holdings and legumes were not adopted widely. Feeding good-quality grasses alone works well for fattening older, thin animals but grasses provide insufficient protein for young growing animals, particularly for the larger cross-bred calves. To overcome this situation, farmers have started to use supplementary feeding with a high-protein concentrate. Unfortunately, this type of concentrate is very expensive and on-farm experiments have shown that using forage legumes as a supplement can achieve similar growth rates to using concentrate feed. Forage legumes can be a cheap alternative for supplying protein supplements on smallholder farms and options for growing and scaling out legumes need to be explored further.

Animal feeding and husbandry is another key area targeted for improvement. Many farmers have difficulties in producing beef cattle that meet the higher quality demands of the growing city markets. Apart from the genetic component, this is mainly related to feeding and husbandry. Many farmers lack knowledge of the different nutritional requirements of calves, young growing animals and older animals. For example, many farmers use concentrates, made up mainly of cassava meal, as a supplementary feed. While this is an excellent source of energy, it contains little protein. Using it in the late stages of fattening is an excellent strategy but many farmers also giving it to calves and other young animals. During the market study participants talked of the poor growth of recently weaned calves. This reflects a lack of knowledge of how to feed and manage animals at different stages of growth. Learning about differential feeding, based on animal needs, is the key that will enable farmers to improve growth rates and, at the same time, reduce the cost of feeding. Helping farmers to improve their knowledge in this area, developing guidelines for farmers practising intensive cow-calf production, cattle fattening and producing specific guides on topics such as feeding of calves, will be essential. Other areas needing improvement are general cattle husbandry, managing seasonality of feed supply and pen and waste management.

(iii) **The need for improvements in the trading environment.**

Several constraints and opportunities for improving the trading environment were identified during the market study. One was the mismatch between the current production of native breed
calves and cattle, when the demand is for Laisind and cross-bred cattle. Many farmers in Ea Kar and M'Drak were producing native calves using the extensive cow-calf production system. There is a market-led opportunity for these farmers to change their production system and produce Laisind and cross-bred cattle. This change is already happening but more is needed. There clearly are many obstacles that farmers need to overcome to make this change. Grazing of the poor-quality and over-grazed pastures in Daklak provides insufficient feed for improved breeds as these are larger than native cattle and need more feed than they can find in the current competitive grazing environment. Thus, farmers need to grow at least part of their own feed to supplement the daily feed cattle can gather from grazing. Nevertheless, this change would provide a real opportunity for these farmers to significantly improve their returns from cattle production.

Another trading issue was the question of understanding market demand and pricing of animals. Farmers practising extensive cow-calf production, in particular, were poorly linked to markets and often did not know where the animals they sold were going. Conversely, farmers practising cattle fattening, in particular, had frequent interactions with traders and had a very good understanding of the market environment. Traders, especially large traders, have played an important role in providing information to beef producers about the different destination markets. Ways of better linking those farmers who are currently poorly connected with markets is an important step in helping them to improve their production systems. Traders and extension services have a key role in this area.

Another option that has been discussed extensively in Ea Kar is the establishment of a cattle market in the district which would help farmers to obtain up-to-date information on market demands and pricing. The district government has indicated its willingness to provide land for a cattle market and would like to see private investment in organising and managing such a market.

There is also an opportunity to assist local traders in Ea Kar to establish better linkages with traders and slaughterhouses in destination markets outside Daklak province. Increasing daily trade with particular city markets would help to establish cattle and beef from Ea Kar as a consistent and valuable source of high-quality beef. This may involve supply contracts that would help to manage risk for producers and encourage investments in cattle production.

Finally, contract farming involving traders and farmers has emerged in some farmer clubs in the district and this may be another avenue of encouraging regular and high-quality supply. It may also enable farmers with little capital to engage in cattle fattening and cow-calf production.

6 Conclusions

During the past five years there have been significant changes in cattle production and marketing in Ea Kar. The introduction of forage cultivation on farmers’ land had enabled many farmers to change their production system from extensive cow-calf production to more intensive production systems, which are able to produce beef cattle for city markets. These changes have had a strong impact on cattle production in Ea Kar. The main conclusions from the cattle market study were:

1) The markets for beef cattle from Ea Kar have changed markedly over the last 5 years. In 2004, all cattle were sold within Ea Kar or Daklak province. Of the cattle sold, 70% were sold to other farmers for breeding and only 30% of animals were sold for slaughter.
(Khanh et al., 2004). By 2008, 50% of cattle were sold for slaughter to city markets in Ho Chi Minh, Da Lat and Nha Trang. These markets have strict quality requirements which demand a minimum body weight of cattle of 300 kg, a body condition score of 4-5 (with 5 being the highest score for fat animals) and a maximum age of 4 years.

2) Farmers in Ea Kar have changed their production systems to produce cattle that can meet the demands of the new markets. They have intensified their production systems from grazing to pen-fed cattle using planted forages as the main feed for fattening, and by changing from local breeds to raising Laisind and cross-bred cattle. This intensification resulted in much higher productivity: In 2008, the number of cattle sold was 3 times greater than in 2004, despite a similar cattle population in both years.

3) Market demand is for high-quality beef and there are opportunities to expand production of cattle that meet the demands of city markets. Conversely, the market for smaller, native animals is less promising and prices paid for such animals are low.

4) Many farmers in Ea Kar (and M'Drak) are still producing local breeds using extensive cow-calf production despite there being a low demand for such animals. Farmers practising cattle fattening want to buy Laisind and cross-bred calves and cattle so they can produce beef for city markets. Addressing this mismatch is a high priority.

5) Finally, the Ea Kar example has shown that smallholder farmers can successfully change from traditional cattle raising system to a productive market-oriented production system that can compete in city markets. The long-term partnership between farmers, traders, extension workers and researchers in Ea Kar has contributed significantly to this change.

7 References


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