

# **STUDY OF DUE DILIGENCE IN THE VALUE CHAIN: LIVESTOCK AND HONEY FOR THE STATES OF MEGHALAYA AND TRIPURA**

## **DRAFT REPORT**



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## **EXECUTIVE SUMMARY**

### **TITLE OF THE STUDY**

#### **A STUDY OF DUE DILIGENCE IN THE VALUE CHAIN: LIVESTOCK AND HONEY FOR THE STATE OF TRIPURA**

#### **Background**

North Eastern Development Finance Corporation Ltd. (NEDFi) mandated N R Management Consultants India Pvt Ltd (NRMC) with a “*Study of due diligence in the value chain: livestock and honey for the States of Meghalaya and Tripura*”. The study was completed using a mix of secondary review and primary data collection. In Tripura, under livestock, 159 value chain actors and in honey 36 were covered as part of the study, and interactions were held with officials of the Animal Resource Development Department (ARDD) and other officials from NABARD, Biotechnology, ICAR institutions, and externally funded JICA project.

The economy of the state of Tripura is agrarian, with more than 42 percent of the population directly dependent on agriculture and allied activities. The contribution of agriculture to the Gross State Domestic Product (GSDP) at current prices was 26.96 percent in 2014-15. The contribution of the livestock sector to GSDP has risen from 1.75 to 2.97 percent between 2011-12 and 2014-15.

Tripura is characterized by small land holders. Above 95 percent of total operational holdings in the state are below two hectares in size and these cover 75 percent of the operated area. Average size of holding is 0.6 hectares in 2010-11, which is lowest in the North-Eastern States.

#### **Livestock Sector in Tripura**

The livestock sector provides livelihood opportunities for the small and marginal farmers in the state. Majority of the livestock farmers in the state practice composite livestock farming and rear more than one kind of livestock. Dairy, pig rearing and poultry rearing are popular activities. While pig rearing and broiler are practiced for income purposes, dairy and Kuroiler rearing is undertaken for meeting household nutritional needs and the marketable surplus is sold. Commercial production was observed in a limited scale only in dairy and broiler.

Despite constraints, Tripura has made significant progress in livestock development, particularly in meat production. As per Livestock Census 2012, of the total livestock in Tripura, cattle constitute 49 percent followed by goats at 31.55 percent, Pigs at 18.72 percent and others at 0.72 percent.

The ARDD of Tripura is responsible for the development of the livestock sector in the state. The overall sectoral impact of ARDD can be seen in the improved per capita availability of milk and the self-sufficiency achieved in meat. Between 2006-07 and 2014-15, the per capita availability of meat has

increased by 149 percent (from 3.65 kg/year to 9.08 kg/year), egg consumption by 53 percent (from 34 nos/year to 52 nos/year) and milk consumption by 44.32 percent (from 70 grams/head/day to 101.03 gm/head/day). Among the different meat types, broiler is the most popular with a production of 20,000 metric tonnes (MT) in 2014-15, followed by pork at around 10,700 MT and Chevon at 1,550 MT in the same year.

### **Dairy Sub Sector**

Dairy Sub Sector overview: The total milk production in Tripura is not sufficient to meet the demand and packaged milk and milk powder imports supplement local production (141,430 MT in 2014-15). Agartala is the biggest market for liquid milk and milk products, absorbing 40 percent of the milk produced in the state. The liquid milk market in the state is dominated by the unorganized sector, which has an estimated 90 percent market share and the share of the organised milk sector is limited to less than 10 percent. In the unorganised sector, the producers sell milk either to the aggregator or directly to the customer or sweetshops. The footprint of the organised dairy sector is limited to a few milk pockets in the districts of Gomati, West Tripura, Sehajhela, North Tripura and Unnakoti where the farmers are organised into village level milk cooperative societies and the milk is procured through the milk collection centre established in each village.

Value Chain Actors in Dairy: While the ARDD provides animals to rearers under different Government programmes, rearers also buy cattle from the weekly cattle markets organized across the state. Cooperative and private dairies in Agartala and North Tripura provide subsidised feed to the dairy farmers. Rearers not covered by the dairies buy feed from the market, where feed sourced from Guwahati as also branded feeds like Godrej and Tata are available. Most of the animal health care services are provided by ARDD through a network of veterinary hospitals, dispensaries, doctors and AI workers. Medicines for animals are also available in medical shops in the district markets. With banks reluctant to provide loans, most dairy farmers raise capital for buying animals from their own sources, private money lenders or microfinance agencies. Dairy entrepreneurs, who undertake commercial dairy operations, raise loans from banks or other credit linked Government programmes.

Most of the dairy producers are small rearing one to three local or cross bred (CB) cows for addressing household level milk consumption with a small marketable surplus. For most small holders, dairy income contributes to less than 10 percent of their annual income. Green fodder, dry fodder and other feed ingredients are inputs from the producer's own field. Usually the farmers employ their own household members in the dairy activities. It was also found that most cattle sheds are not well maintained and the overall udder and animal management is poor, thus leading to high incidence of mastitis.

In Tripura, the aggregators are a vital link in the milk value chain as they handle 80 percent of the milk being moved from producer to consumer. Field interactions revealed that milk collecting agents are not adhering to quality hygiene standards as milk collection equipment is not properly washed with detergents. In the village clusters where farmers are organised in dairy cooperatives, village level aggregation takes place at the milk collection centres. Some of the collected milk is sold to the dairy while the rest is sold in the open market. The overall hygiene at the collection centre was found to be good, where milk collecting agents wash cans with detergents before starting milk collection. However, milk utensils used by producers require improvement.

There are three milk dairy processing plants located in the state, of which two are owned and operated by cooperative dairies - Gomati Dairy in West Tripura and Uttarayan Dairy in North Tripura, and one by a private dairy called 'Nest n Crest'. Gomati is the biggest dairy handling 12-13,000 litres per day collected from 7,000 members located in Khowai, West Tripura, Sephiahela, and Gomati districts. The hygienic standards of the dairy plants are high. While the dairies supply good quality feed to the farmers at subsidized costs, the milk procurement price is also lower than the market.

There are shops selling traditional Bengali sweets in all parts of the state, in small and large markets in the state. These shops sell a variety of dairy products like *paneer*, curd, *chena* and a wide variety of sweets. Most of these workers come from outside the state, mainly from West Bengal.

Channels in Dairy Value chain: In Tripura, liquid milk moves from producers to consumers in five distinct channels. The producer-consumer channel, producer-aggregator-consumer channel, producer- collection centre-dairy-consumer channel, producer-sweet shops-consumer channel and producer-aggregator-sweet shops-consumer channel. While the producer-aggregator- consumer channel handles around 75 percent of the liquid milk consumption, the producer- collection centre- dairy-consumer channel offers the highest returns (in percentage) to the producers. However, currently this channel has limited outreach in the state.

Constraints: There are various constraints in the dairy value chain in Tripura. These are: limited land available for fodder development, feed and fodder availability, poor understanding of hygiene among the farmers and aggregators, very little marketable surplus milk available with producers, limited pockets of milk routes and dairy clusters, absence of chillers in all milk producing pockets and lack of strong branding and packaging for milk and milk products on scale.

# EXECUTIVE SUMMARY

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#### ➤ **Background**

North Eastern Development Finance Corporation Ltd. (NEDFi) mandated N R Management Consultants India Pvt Ltd (NRMC) with a “*Study of due diligence in the value chain: livestock and honey for the States of Meghalaya and Tripura*”. The study was completed using a mix of secondary review and primary data collection. In Meghalaya, under livestock, 242 value chain actors and in honey 160 were covered as part of the study, and interactions were held with officials of the Animal Husbandry and Veterinary Development (AHVD), officials from NABARD, ICAR institutions etc.

Between 2004-05 and 2014-15, the contribution of the primary sector to the Gross State Domestic Product (GSDP) has declined from 32.59 percent to 18.94 percent, while that of the secondary sector has risen from 16.80 percent to 26.80 percent and, that of the tertiary sector has changed from 50.61 percent to 54.24 percent of the SGDP.

One of the important feature of the social structure in the Meghalaya is that the society are matrilineal. Therefore, importance to livestock and other domestic earning and livelihood features also are involved extensively in the tribal communities. Therefore, livelihood options like livestock rearing where women plays an important role, are essential features of the society

#### **Livestock Sector in Meghalaya**

As meat is an integral part of the diet of people in Meghalaya, there are no taboos associated with consumption of chicken meat, pork or beef. Thus the focus of livestock farming has traditionally been to produce different kinds of meat. To improve the productivity, farmers are also open and ready to adopt modern technologies for breeding, feeding and management. There is availability of favorable markets within the State as well as in the adjoining States for meat. This sector also has benefitted due to availability of manpower and other facilities such as health care for control of Livestock and Poultry diseases, in the state.

Milk production in the state increased from 79 thousand tonnes in 2011-12 to 84 thousand tonnes in 2015-16. For the same time period, the production of meat in the state increased from 37.1 thousand tonnes to 42 thousand tonnes. Egg production in the state increased from 104.9 million units in 2013-14 to 106 million units in 2015-16. Applications of modern technologies have brought a high hope for commercial livestock and poultry farming as a full-time occupation for a decent living.

While the per capita availability of milk has increased by 4 percent between 2014-15 and 2015-16, the per capita availability of meat has decreased marginally with chicken recording a decline of around

2.7 percent. Pork availability grew by 2.7 percent while mutton by 2.5 percent. Egg availability also grew by around 3 percent.

Similarly, availability of eggs per person per year has been estimated at 38 Nos. only as against the National Research Council (NRC) recommendation of 180. In case of meat, the supply meets the demand, taking the import from other States into consideration.

- The key trends in the cattle population between the two censuses are;
- While the population of cross bred cattle decreased by 1.45 percent, the indigenous cattle population increased by 2.2 percent.
- The buffalo population, while small in numbers, grew by 10 percent.
- Goat population increased by nearly 30 percent
- The indigenous pig population decreased by 5 percent while that of cross bred pigs increased by 96 percent.
- While in poultry both indigenous and improved varieties recorded an increase, the population of ducks decreased significantly.

Most of the households keep between 6-10 bovines (around 31 percent of the population), followed by 2-5 animals (around 22 percent of the population) and 11-15 animals (around 16 percent of the population). While majority in Ri- Bhoi and West Khasi hills keep cattle size between 2 to 5, in North Garo hills, around 53 percent of the households own more than 26 animals.

#### **Dairy Sub Sector overview:**

The total milk production in the state is not sufficient to meet the demand. Packaged milk and milk powder imports supplement local production to meet the demand. The total milk production in the state was 83,000 tons in 2014-15. In Meghalaya, the average milk availability from 2013-14 to 2015-16 was 77 gm/capita/day which is much lower than the total per capita availability in India (307 gm/head/day in 2013-14).

Shillong is the biggest market for liquid milk and milk products, absorbing 45 percent of the milk produced in the state. The liquid milk market in the state is dominated by the unorganized sector, which has an estimated 90 percent market share and the share of the organised milk sector is limited to less than 10 percent. In the unorganised sector, the producers sell milk either to the aggregator or directly to the customer or sweetshops. The footprint of the organised dairy sector is limited to a few milk pockets in the districts of East Khasi Hills and Jaintia Hills where the farmers are organised into village level milk cooperative societies and the milk is procured through the milk collection centre established in each village.

Value Chain Actors in Dairy: Under different programs, units of animals are provided by the department to the respective livestock rearers. Due to proximity to bigger markets in Assam, the feed

is sourced from Guwahati or other nearby big markets in Assam by feed suppliers and is sold to farmers. Most of the services are provided by the Animal Husbandry and Veterinary Department through the veterinary hospitals, dispensaries, doctors and AI workers. Farmers incur an expenditure of INR 300 to 500 per visit towards veterinary services for their cow when availed from veterinary doctor. Small dairy farmers are provided animals from different Government programs. However, not all farmers have access to these programs and hence, they raise capital from their own sources such as relatives, private money lenders or microfinance agencies to buy animals. Dairy entrepreneurs who undertake commercial dairy operations, raise loans from banks or other Government programs. Those located in clusters where the NABARD DEEDS project is being implemented have been successful in raising loan funds from banks.

Consumption of milk in Meghalaya, especially the rural areas is low primarily because milk has not been a part of the daily diet of local communities. Livestock ownership in Meghalaya is more evenly distributed with landless laborer and, small and marginal farmers. Around 2 Lakhs milch cows and buffaloes are spread over 5000 villages. About 1.64 Lakhs households are engaged in rearing small animals and ruminants and other allied activities. The returns from livestock sector especially dairying and mixed farming in small and medium holdings are larger and highly sustainable. The cost of livestock rearing is high due to the higher cost of inputs like feed and fodder. While most rear cows for primarily addressing household level milk consumption, surplus is sold for cash incomes. The daily production volumes vary between 6 liters to 80 liters.

The aggregators are a vital link in the milk value chain as they handle 80 percent of the milk being moved from producer to consumer in Meghalaya. The aggregators collect milk from the producers' at their doorstep and supply to the customers in the cities. Some aggregators also collect milk on behalf on the retail shops. The aggregators operate within a radial distance of around 10 kilometers, usually supplying milk on motorbikes or bicycles. The aggregator handles around 50 to 80 liters per day. The incremental costs at this level vary from INR 5-10 per liter and the margins are between INR 3-7 per liter. Most of the costs are related to transportation of the goods.

There are shops selling wide variety of dairy products and bakery items made out of milk such as traditional cakes, pastry, cookies, sweets, curd, cottage cheese etc. in small and large markets in the state. While most sweets are consumed locally, a small percentage also is exported outside the state for gifts.

Channels in Dairy Value chain: In Meghalaya, liquid milk moves from producers to consumers in five distinct channels. The producer-consumer channel, producer-aggregator-consumer channel, producer-collection centre-dairy-consumer channel, producer-sweet shops/bakery-consumer channel and producer-aggregator-sweet shops/bakery-consumer channel. While the producer-aggregator-consumer channel handles around 75 percent of the liquid milk consumption, the producer-collection centre-dairy-consumer channel offers the highest returns to the producers. However, currently this

channel has limited outreach in the state.

**Constraints: There are various constraints in the dairy value chain in Meghalaya. These are:**

- Lack of Awareness - Majority of the farmers of the state are still ignorant about the modern technology and improved practices of livestock and poultry rearing. Various schemes implemented by the department benefit only a small percentage of farmers where application of modern technological practices hardly reached the masses. Rural folks are also ignorant about the funding source from where they can avail necessary incentive as required by them.
- Low Production - Low production and slow growth rate of the indigenous stock which most of the farmers are rearing.
- Feed - Almost all the feed ingredients needed for manufacture of a balanced feed are to be procured from outside the Region, resulting in very high feed cost not affordable to general farmers resulting in a decrease in the production status.
- Diseases - Being hilly and difficult terrain, disease control measures cannot reach remote areas which needs further improvement as morbidity from various diseases is also one of the constraints in production besides mortality causing economic loss.
- Market - There is no organized marketing facility available till date to ensure sustainable value addition from the Livestock and Poultry produce in the rural sector.