

# **INCREASING THE ROLE OF CHAIN ACTOR FOR CASSAVA (*Manihot esculenta* Crantz) DEVELOPMENT IN EAST NUSA TENGGARA, INDONESIA**

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## **Introduction**

Cassava is a root crop commonly used as a food and a source of starch and other industries. Cassava commonly also used as animal feed both in fresh and dry form in the form of flour processed from cassava chips. Indonesia is third largest cassava producer but also a large importer of starch. A major problem is high cost of transportation considering Indonesia is a large archipelago with 16,056 islands. Indonesia is a tropical country with regional differences in land conditions and environments. In the west (e.g., North Sumatra) climate is equatorial with higher rainfall and in the east (e.g., Nusa Tenggara Timur = NTT) climate is monsoonal with wet and dry seasons. NTT has a dryer climate compared with western Indonesia, with only about 4 months for rain. NTT is dominated by dry land with the main food crops are corn, cassava and beans. Most farmers growing cassava with low productivity for food and feed livestock with a small portion being sold to the market gradually. The ACIAR research project in NTT has been doing the agronomic trials and disseminating that technology to farmers to increase farmer's productivity and income. The objective of this study was to analyze the role of cassava as a subsistence and commercial crop and how to increase the role of chain actors in cassava development on the island of Flores in eastern Indonesia.

## **Methods and Design**

The study was conducted in Sikka Regency, Flores, NTT, selected to represent areas where cassava is a major staple food. There were 3 surveys, are :

- Value Chain Survey, interviewing groups of farmers in three villages, traders, and small-scale processors in 2016
- Household Survey, interviewing 114 cassava farmers selected by simple random sampling and field observation in 2017
- Workshop on “Policy and business model development in NTT” with stakeholders are researcher from University of Brawijaya, ILETRI, Local government are “Bupati” Sikka Regency, Agriculture regional agency from Sikka and the other district in Flores, farmers, trader and scientist from many universities in NTT on March 2019.

## **Results**

Cassava is one of the main crops in Sikka. The average of farms size in Sikka Regency is 0.9 ha. At higher elevations cassava is cultivated within an agroforestry cropping pattern and at lower elevations cassava is intercropped with maize and beans. Farmers cultivate cassava for subsistence consumption, to sell as a food crop, and for livestock feed. Cassava mainly used as food, whether consumed by farm-household or traded in local markets. Utilisation of cassava, are:

- 30% for home consumption, including food and livestock feed
- 20% sold directly to local market
- 50% sold to traders

Farmers sell cassava gradually in small quantities (about 10-20 bundles, 1 bundle = 5-10 kg). There is no starch factory in Sikka Regency.

The value chain survey of cassava in Sikka Regency was known that the cassava productivity is around 10 ton/ha. The amount of about 20% from total production directly sale fresh root in local market and about 50 % from total production sale to traders. How about the rest around 30%? 25% belong for household consumption, 4% belongs for feeding and 1% for processing into dried cassava and they called it “gapek” (Figure 1).

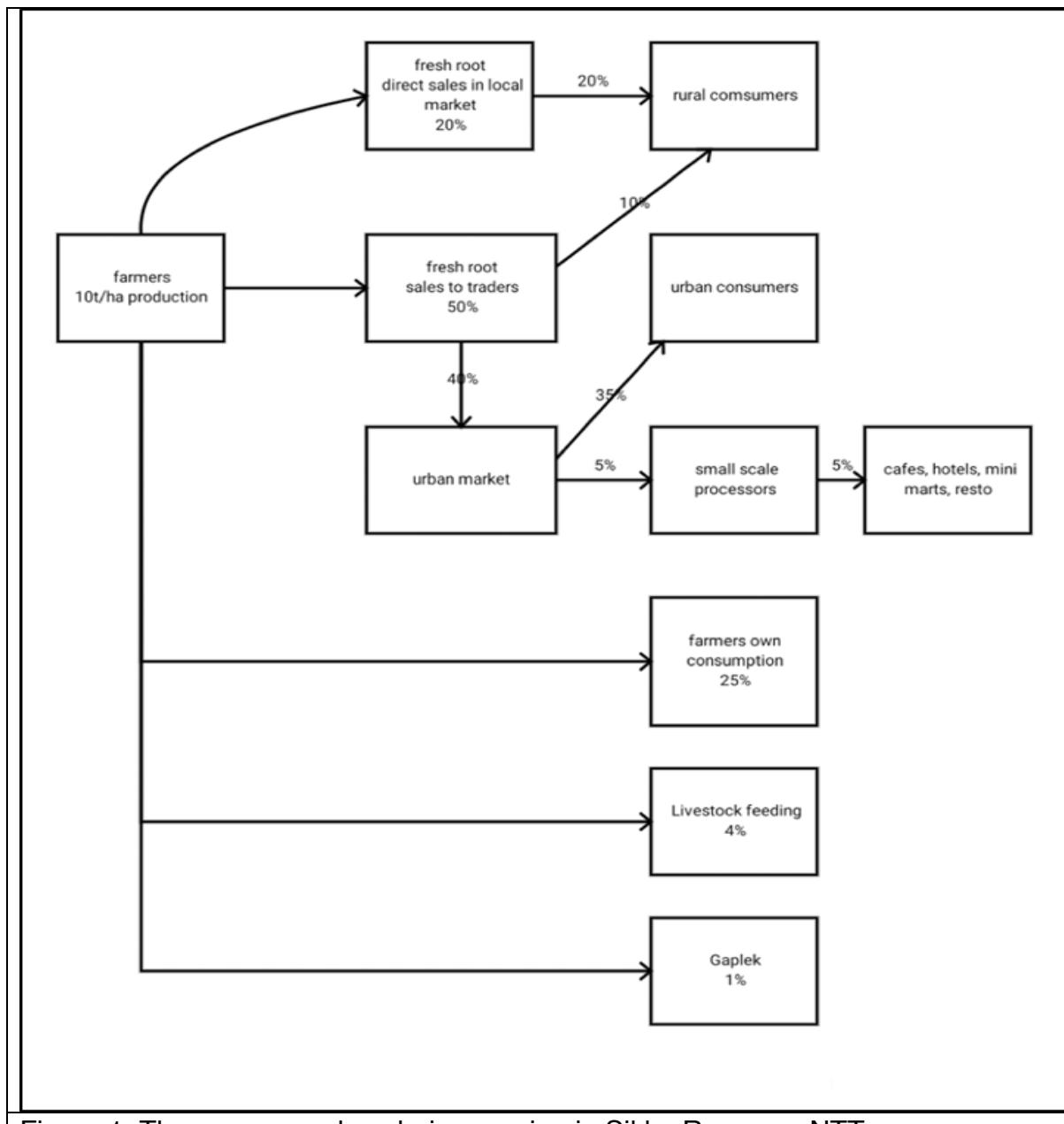


Figure 1. The cassava value chain mapping in Sikka Regency, NTT

A workshop on “Cassava development in East Nusa Tenggara based on business model” was conducted on 14 – 15 March 2019 at Maumere, East Nusa Tenggara. The workshop was attended by 40 participants from government officials (District Agricultural Service), Researchers form University and Research Institute, Extension Services, Cassava trader and industries, and farmers. The workshop was aimed to collect information from various cassava stake holder industry for developing of cassava in East Nusa Tenggara. Workshop was opened by the Bupati of Sikka District, East Nusa tenggara Province, with many speakers from East Nusa Tenggara BPTP (Balai Pengkajian Technology Pertanian), University of Brawijaya and trader. On the following day, the participant visited fertilizer experiment and some adopter farmers’ field.

The key opportunities identified through the stakeholder consultation process in the role of stakeholders for each actor are:

- The regional government will provide support for cassava development in NTT
- The private sector has the role of buying cassava farmers and processing them into chips cassava as raw material for animal feed
- The field officials such as field farm extension doing assist to farmers
- The local government also support for provide land for planting cassava
- The Universities and research institutes provides research, development and technology that will help farmers.

The constraints were identified are the limitation of water and farmers capital for farming system and there are no feed factory in NTT.

## **Discussion and conclusion**

In 2019, there were 21 farmers from Sikka and East Flores District participated the project by adopting the improved technology demonstrated by the project (new varieties and improved cropping system). Project help with the seeds (cassava and maize), fertilizers, and supervision (in cooperation with the Field Extension officer). Because maize is the main food for East Nusa Tenggara people, all farmers planted cassava in between their maize crops.

The importance issue in cassava development in Flores NTT are,

- The regional government will support for cassava development in TT, with The Agricultural Agency, local government and field farm extension.
- The trader will buy the farmers cassava and it will be processed to cassava chips for as raw material for animal feed.
- The Universities and research institutes provides research, development and technology that will help farmers.
- The farmers will be plant cassava.

To enhance sustainability of cassava development, there is need effort to expand the land area of cassava to other district in Flores, subsidies for farmers include fertilizer subsidies, develop the business model with win-win solutions and develop the cassava processing.