

Sweet Potato

Priority statement

The sweet potato sector is a **LOW - MEDIUM** priority for pro poor development. Growth of production in NTT and the cultural significance of the crop and links to pig farming present opportunities that could be further investigated.

Traditionally, sweet potato has been a staple food in the eastern part of the country (Papua Province especially) and an important food security crop in the densely populated island of Java. It is a widespread crop, as sweet potato and pigs are connected to all the Papuan traditional events such as marriages, funerals, and the resolution of conflicts. In local culture certain varieties are the most important human food.

East Java has the highest productivity of the three provinces with 15.3 t/ha (see Table 1). This is higher than the national average of 12.2 t/ha. In 2011 East Java produced 219,324 tonnes of sweet potato. By comparison, NTT produced 125,048 tonnes and NTB only 12,021 tonnes.

A comparison between East Java, NTB and NTT shows that East Java and NTT have similar amount of sweet potato cultivation areas, while NTB has dedicated just over 1,000 ha for sweet potato production, making it by far the smallest producer alongside West Papua.

Table 1. Sweet potato production statistics for selected provinces in Indonesia

Basic Statistics	East Java	West Nusa Tenggara (NTB)	East Nusa Tenggara (NTT)	Indonesia
Area of Production (ha)	14,340	1,032	15,160	177,605
Volume of Production (tonnes)	219,324	12,021	125,048	2,172,437
Yield (t/ha)	15.29	11.65	8.25	12.23
<i>Source: Badan Pusat Statistik 2011</i>				

Poverty and sustainability

Is there potential to reach large numbers of poor households in production and post-production?

- A finite number of producers is difficult to identify. However given its growth characteristics (i.e. grown by poor households), an intervention in sweet potato will reach a larger number of rural poor households in EJ, NTT and NTB.
- As sweet potato is an important traditional food crop, especially for the rural poor on the Island of Java, many farmers grow it for their own consumption.

What is the potential to increase income?

- There is limited potential. While sweet potato is a major root crop it is not processed on a significant scale. Besides some snack and street food production, and some sales to larger scale sauce producers, the bulk of the crop is consumed fresh. Per capita fresh consumption generally declines as income and urbanization increases.
- A key challenge facing sweet potato is to develop new uses for the crop, especially in starch and flour processing. The trend toward greater utilization of sweet potato for agro-processing is slowing taking place. A critical requirement is new and improved production technology to raise yields and reduce unit production costs in order to make sweet potato a competitive source of raw material in agro-processing.
- Traditionally sweet potato is closely linked with pig farming, so any growth in this sector has some potential to deliver positive economic gains, especially for poor smallholder producers.

Does the chain/commodity fit with the focus of Government programs and priorities?

No. Sweet potato is not considered a commercially important species.

Having said that, there is a National Sweet Potato Program and a number of donor interventions exist that mainly focus on improving the varieties produced for home consumption.

How project-crowded is the sector?

There are a number of research institutions working in the sweet potato sector, such as:

- ACIAR, developing improvements to the sweet potato and pig production systems in the highlands of Papua;
- UPWARD (Users Perspective with Agricultural Research and Development) part of the (CIP) International Potato Centre network, who have identified four major sweet potato production systems; and
- The Central Research Institute for Food Crop (CRIFC) and the regional office of the International Potato Centre for East, Southeast Asia and the Pacific (CIP-ESEAP), who has released new varieties of sweet potato.

What is the agro - ecological feasibility?

- High. Sweet potato production in the Indonesian and Melanesian island groups dates back to pre-Colombian times.
- Indonesia possesses a rich set of indigenous sweet potato genetic material which is highly suited to the soil and climatic conditions.

Sustainability (economic and environmental)

Economic risks are relatively high because:

- Consumption of fresh roots tends to decline as per capita income rises and consumers will switch to more preferred foods.

- Future research must investigate the feasibility of improving quality and lowering unit cost, or channelling output into emerging specialist markets such as the starch market for upstream industries.

Environmental risks are low:

- Sweet potato is a crop that does not present any specific major environmental threats or concerns.
- The main negative impact is associated with the unsustainable land preparation practices of slash-and-burn often used by farmers growing crops for household food security.

External risk

There are a number of moderate risks associated with the production of sweet potato, including:

- As a source of starch sweet potato it cannot compete with cassava;
- Low multiplication rates – it takes longer to produce an adequate supply of the crop's planting material than that of cereals;
- Low status - sweet potato carries the stigma of being the “poor people's food” and as such, consumption is low; and
- There is no stable market for increased production.

Structure of the chain

Is there potential for post-harvest productivity value-added?

- There is limited potential linked to transformation of the product into starches and flours for food and non-food uses.
- Expanding sweet potato for industrial uses must be backed up by innovative postharvest technologies.
- Physicochemical properties of sweet potato significantly differ among varieties. Therefore, suitable varieties for each processed product are needed.
- There are two technical concerns that need to be addressed before sweet potato flour processing can be considered feasible:
 - (a) the browning effect during processing, and
 - (b) the unexpectedly low conversion rate.

What is the potential for improving market access?

- There is no immediate change in market prospects for sweet potato under current use and technology conditions. The demand for sweet potato will increase considerably if it can substitute for other raw materials, especially cassava, in the sugar, fructose, and maltose industries.

What is the scalability and transferability potential?

- Sweet potato production has not shown significant growth in the last decade and the transferability potential of lessons learned is limited to bulk perishable commodities of similar nature.

Is there sufficient infrastructure availability?

- No. Processing infrastructure does exist.
- The dispersed location of production and the natural characteristics of the product cause transportation costs to be a major component of the sweet potato price, thus linkages could be improved.