

Program Factsheet



Improving production
and harvesting
practices to increase
incomes of sugarcane
farmers on Madura
Island, East Java

A partnership for innovation between the Indonesian Centre for Sugarcane Research (P3GI), PT. Perkebunan Nusantara X (PTPN X), and University of Trunojoyo assisting 1,000 sugarcane farmers to increase production quality and quantity and to access markets

Sugarcane has been produced for over three centuries in Indonesia, with three quarters of the production occurring in Java. 70% of the cane is grown by small to medium-scale farmers. Since the 1980s, production has been static or declining while demand has been increasing, forcing Indonesia to import increasing amounts of sugar.

There are a multitude of reasons for declines in production including: planting of poor yield varieties; lack of use of inputs such as fertiliser; not regularly renewing the cane; minimal mechanisation; poor harvesting techniques; inefficient extraction of sugar in the mills and; farmers shifting to more profitable crops, such as rice. However, by 2019 the Indonesian Government wants the country self-sufficient in sugar production and is looking to expand production of sugar into new geographic areas.

In Madura productivity of sugarcane is low, averaging 40 tons/ha compared to the national average of 70 tons/ha. The technology innovation in the project is centred on introducing techniques which research has shown increases productivity. These techniques include: selection of varieties well adapted to the drier climate on Madura; increasing soil fertility; balancing fertilizer application; water management; land regrouping and; developing new planting patterns. This project will be implemented through a partnership facilitated by ARISA between P3GI, PTPN X, and the University of Trunojoyo, working with sugarcane farmers in Madura.

Until recently the island of Madura was isolated from the mainland. A bridge from East Java to the island was built, opening up new economic opportunities and access to markets, including sugarcane. PTPN X operates the closest sugar mill but is now looking to establishing a mill in Madura if sugarcane production increases.

This technological innovation will assist farmers by:

- Improving sugarcane farming techniques, thereby increasing productivity and quality;
- Developing mechanisms for effective replication and scale-up of the innovation;
- Improving harvesting techniques;
- Providing access to markets that will provide a premium price for high quality sugarcane;
- Formulating policy support that can increase farmers' motivation and interest to grow sugarcane.

Demonstration plots and Farmer Field Schools will be used to show farmers best agricultural practices and encourage the adoption of these practices on their own land. Farmers who are willing to adopt will be offered credit for inputs and be supported through an income guarantee scheme managed by PTPN X. They will also be taught cut-load-carry loading processes by PTPN X to ensure higher sugar content in the cane when it arrives at the mill.

INNOVATION IS MORE THAN TECHNOLOGY

Organisational and institutional change in conjunction with technology transfer is key to innovation. This partnership between P3GI, PTPN X and the University of Trunojoyo is driving this innovation.

It is anticipated that through this multi-pronged approach sugarcane production will increase and the quality of the cane arriving at the mill will improve, resulting in increased profits and incomes for sugarcane farmers.

This project commenced in January 2016. It aims to have a positive impact on the incomes of over 1,000 smallholder households in Madura over the next three years.



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ARISA is an Australian Government program, implemented in partnership with the Government of Indonesia and managed by CSIRO. ARISA aims to increase incomes of smallholder farmers in eastern Indonesia by piloting competitive agricultural innovation. ARISA tests ways to stimulate collaboration between the private sector and research institutes in applying new technologies to improve farmer competitiveness.