Field Note on Field Study on **Improving Living Conditions of Palm Sugar Producers through Improved Processing Technology and Marketing**

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In Cambodia, palm sugar production is a family economic activity of rural people in some provinces but is mostly concentrated in Takeo, Kampong Speu and Kampong Chhnang province. Approximately, around 20000 families engage in this activity. Generally, they can earn a gross income of about 2-4 million Riel (500-1000USD) from sugar production within a season of about 7 months. However, this cottage industry faces some constraints. Lack of appropriate processing technology and marketing of the product are considered to be the main constraints. Palm sugar production consumes a large amount of firewood for cooking palm sap until it becomes sugar, about 4 tons of dry firewood is needed to produce 1 ton of sugar (GERES 2006). Firewood used in this production is mostly collected unsustainably from the natural forest. This practice puts further pressure on the country's natural forest resources which are declining day to day. Consequently, the producers are facing a firewood shortage. For those who are lucky enough to have the local forest resources still available to them to cut and use, from year to year they have to go further away. Before they only needed to spend half a day, but now they spend almost 2 days for cutting an ox-cart of firewood (case sudy in Kampong Chhnang province in 2007); while the others spend almost a quarter of their total sugar income on fuel (buying firewood or textile garment waste for fuel). Although facing such problems, some people still continue this activity as they have not found an alternative job that can provide a better income for their family.

Contributing to address those problems, through international aid, some NGOs (CEDAC, DATe and GERES Cambodia) have supported palm sugar producers to improve their production, particularly on the processing technique and marketing of the product in order to enhance their living conditions as well as to reduce the environmental impact.

Improving sugar processing technology

Improved stove

In traditional practice, palm sugar producers use inefficient traditional stoves for cooking palm juice, which consumes a lot of fuel. Through the development projects of NGOs, fuel efficient or improved stove technology was introduced to reduce energy consumption, and at the same time, improve sugar quality. This enables the producers to sell it at a higher price. The improved stove has a higher fuel efficiency, equipped with chimney which can remove smoke, exhausting heat and shoots from the cooking place resulting in the production of more hygienic food and better working environments for the users who are mainly women and children. Changing to using improved stove saves fuel around 20% or helps the producers to reduce around 1.2-2 ton of firewood per family, per year. A study in Kampong Speu province shows that more than 80% of the producers have spent on average 125-150USD per family, per year or about 25% of their sugar income on cooking fuel for palm sugar processing.

The impact of using improved stove helps them reducing fuel expense, reducing time and labor on firewood collection, and in return they can use this opportunity for other activities to improve their livelihoods. Other environmental benefits from using the improved stove is to avoid carbon emission into the atmosphere, accounting for 2.5-6.6 ton CO_2 equivalent per year per family from less burning of the firewood which contributes to fighting global climate change.

However, promoting tree planting, either on family or community base, for firewood supply to the sugar industry as well as for reforestation is a challenge and effort to be taken into account.

Improved sugar processing technique

Using improved stoves combined with other improvements in the processing technique and production management can help enhance sugar quality without adding chemical substances to bleach sugar for attracting consumers. It is noted that a simple way that the producers have used to bleach their sugar, instead of finding a better processing technology, is the application of the chemical Sodium Hydrosulfite which is now banned as it is harmful for health. In most cases, the chemical application in sugar is recommended by the middlemen. Although it is a common practice, most consumers are not aware of it.

Alternatively, with technical assistance from the NGOs on the processing and management such as selection of good quality palm juice, cleaning of processing equipment/tools (particularly the juice container and wok), and hygiene during the cooking process , storing sugar in appropriate containers and places can help the producers process sugar with a high quality and can sell it at a good price. More interestingly, the producers can make granulated sugar which can compete with imported sugar. Granulated sugar can be sold at double the price than typical sugar, 3000 riel/kg; while the latter is around 1200-1800 riel/kg.

Helping with the marketing of palm sugar

Along with improving sugar quality, marketing strategy has been also promoted to help the producers sell their produce at a better price, so that they can earn a good income. It has been noted that the determination of the palm sugar price is dependent on the middlemen as some producers take a capital loan from them and give them sugar produce for repayment; while the other producers have no access to the sugar market information. Addressing market constraint, the sugar producers are helped to seek market opportunities both in domestic demand and exporting to international market. For instance, national NGOs like **CEDAC** and **DATe** have provided not only technical support in production to the producers but also marketed the sugar through own-run business and seeking partners to buy sugar from the producers. Recently, the Ministry of Commerce of Cambodia in collaboration with its development partners is implementing a pilot project **“Geographical Indications (GI) Protection in Cambodia”** to support the legal registration of some special products in a special location as well as to promote the marketing of those products in the country and abroad. Palm sugar from Kampong Speu province was identified as one of the selected GI products and has been promoted by the GI project. In addition, there are private companies (e.g. Confirel) that have also exported Cambodian sugar to some countries in Asia and Europe.

This marketing improvement provides further opportunities for the Cambodian palm sugar producers to enhance their economic conditions.