

## The Use of Mango Stones as a Source of Valuable Fats and Renewable Energy project

Mango is one of the most important agricultural products in Cambodia. Nowadays more and more processors are producing dried mangoes to avoid spoiling overproduction during the high season. However, a new problem began to arise, when a large amount of waste accumulates during fruit processing, especially mango stones. The seeds, which have not been used until now, represent a significant potential for the production of energy, valuable fats, and fodder.

A joint team of experts from the Czech Republic, namely from the Mendel University in Brno and the Czech University of Life Sciences Prague, found out the way how to make fuel briquettes from mango stones. After a thorough analysis, the material has proven to have very useful properties, such as mechanical resistance, high calorific value, low emissions of nitrogen and carbon oxides, and low ash content.

Mango stone briquettes can be utilized as an alternative source of energy in stoves and boilers used for firewood. This has a positive effect both on the reduction of landfill waste and on the protection of local forests stands against the excessive logging and deforestation, from which the country suffers greatly. Regarding the calculations, the middle-size fruit drying plant can reduce the fuelwood consumption by 41,42 % when fabricates mango pits briquettes as a fuel. Doing that, Cambodian fruit processors can fabricate some 6000 tonnes of mango stone briquettes yearly, sparing fuelwood grown on 200 ha of forest.

Experts from the Czech Republic also helped the locals select the machinery for processing the stones. The partner company Holistic Solutions presented machines of both Czech and foreign manufacture. The local partners took the results of the project as an opportunity not only to save money but also to lean more towards sustainable farming methods and thus protect the local environment.

The project was financed the Challenge Fund: Czech Solutions for SDGs, an effective driver of innovation and change in the region.

If you are interested in the initiative or Challenge Fund: Czech Solutions for SDGs, please use the following contacts:

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