



Food and Agriculture  
Organization of the  
United Nations



# PACIFIC INNOVATION PROFILES – HOT AIR DRYER METHOD

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PACIFIC SIDS SOLUTIONS FORUM  
28-30 NOVEMBER 2022



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## THE PROBLEM ADDRESSED

Local food losses are mainly due to poor infrastructure, power outages, extreme weather conditions, and high transport costs. In addition, traditional processing and preservation are of limited value in extending the shelf life of food such as roots and tubers, fruits, and nuts, thereby restraining the creation of a value chain and market system to support sustainable livelihoods for farmers. These traditional systems also present the risk of contaminating food with smoke.

## SOLUTION

The hot air dryer extends the shelf life of products. For instance, cassava can be preserved for 3 months instead of 3 days. This technology supports farmers in fulfilling their consumption needs throughout the year, producing a surplus, and selling the extra to the market. This food processing technology has also helped extend value chains to urban centers and islands.

## INNOVATIONS AND FEATURES

- Incremental innovation, built on the drum cooking oven system, provides multi-functional capacities.
- A hot air dryer can cook bread and buns, make chips, and dry fruits.
- The dryer has a food retention rate of 80 percent and a lifespan of 4 years. It takes 8–12 hours to dry a batch of 10 kg. The equipment weighs 40 kg and costs SBD 2 500 (equals USD 312). Constructing the dryer from bricks keeps the costs down but inhibits its mobility.

## EVIDENCE OF VISIBILITY

- Userbase/beneficiaries: farmers.
- The shelf life of some farm products increases 30-fold.
- Twenty hot air dryers have been deployed, saving up to 50 percent of the harvest yield in the form of dried stock. The pressure of going daily to the garden has been reduced by 70 percent.
- Families reported how easy it was to maintain healthier diets from their stock of locally processed food items. As a result, they gained food security, and harvest spoilage was reduced by 80 percent.
- This innovative system has begun a certification process to comply with food standards.
- Farmers can access financing for the equipment, and the costs are repaid through products that progressively reimburse the loan.

## SWOT ANALYSIS OF SCALABILITY/REPLICATION POTENTIAL

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• connection to farmers in need of solutions for harvest storage,</li> <li>• secured business deals with retailers,</li> <li>• creation of a value chain with farmers the most in need,</li> <li>• innovation operated off-grid,</li> <li>• tuning the dryer for a higher yield,</li> <li>• training is well-received,</li> <li>• life span of 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>• limited output (5–10 kg per batch),</li> <li>• cost/benefits are yet to be optimum,</li> <li>• product quality and compliance with food safety standards,</li> <li>• the drying process reduces the nutritional properties,</li> <li>• promotion and marketing development.</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• local and regional demand,</li> <li>• partner identified to improve productivity and effectiveness of the dryer,</li> <li>• actors are interested in replicating the dryer in new places.</li> </ul>	<ul style="list-style-type: none"> <li>• certification on food standards requires high quality,</li> <li>• unstable provisions due to the unpredictability of farmers' yield and selling decisions,</li> <li>• renting the dryer could be an option if insurance is to be used and paid.</li> </ul>

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