



# CRF-Benin : Soyabean processing

Capitalization of the results of the Project Soyabean Aftin-Milk (ProSAM)



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# PAEPARD



## Background

The soybean Consortium of Benin (CSB) is a multi-actor platform created in 2011 by a group of actors involved in promoting soybean sector with the technical and financial support from the Platform for African-European Partnership on Agricultural Research for Development (PAEPARD II) ([www.paepard.org](http://www.paepard.org)). PAEPARD supported CSB and its partners RUFORUM ([www.ruforum.org](http://www.ruforum.org)) and ICRA (<http://www.icra-edu.org>) by organizing a writing workshop in Entebbe/Uganda in order to respond to the call for proposals, Food&Business Applied Research Fund (ARF), of NWO/WOTRO (The Netherlands) (<http://www.nwo.nl/en>). This writing workshop equipped SOJAGNON and his partners with skills to write and submit the project entitled Matching grain quality attributes to the requirements of soybean processors in Benin (ProSeSS), which was selected because of its quality, but also the significant impact it will have on the actors of the soybean sector in Benin. ProSeSS aims to promote the production

and use of seeds of good quality through the elaboration of a strategic plan for the soybean seed sub-sector and provide actors of the sector with a range of soybean varieties adapted to different end-products (cheese, afitin, milk, oil, cake, cookie, etc.). Added to ongoing projects such as Project Soybean, Afitin, Milk (ProSAM) of CRF/PAEPARD, Soybean Seeds Project (ProSeSS) will contribute to the development of soybean value chains in Benin. (<http://paepard.blogspot.be/2014/10/re-engineered-soybean-milk-processing.html>) SOJAGNON NGO, Leader of the Consortium, ensures the coordination of these two projects and Patrice Lagnon SEWADE is the Coordinator. ProSAM addresses the low productivity of soybean processing units in South and Central Benin

and the low quality of the soybean milk and soybean "Afitin", two soybean derived product which have great opportunity for development since their demand on the market is high. Research is conducted by UAC/FSA, WU/FQD, INRAB and ISA-LISBOA, jointly with SOJAGNON and FUPRO to develop improved soybean processing technologies, based on processor needs and consumer preferences to deliver good quality soybean milk and soybean 'Afitin' especially for rural and urban populations.



Family picture after ProSAM launch

### ProSAM Objectives

Increased household income through improved food chain of soybean derived products (milk and afitin)

Small farmers and processors (especially women) and their organizations take ownership and use SM & SA processing technologies and improved marketability of these soybean derived products

## ProSAM RESULTS

### 4 Baseline studies

- A survey was conducted in 08 municipalities of Southern and Central Benin: 530 processors were investigated  
 - Diagnostic study of soy Milk processing technologies  
 - Surveys of processors on processing practices: In total, 134 processors were interviewed. This survey pointed that most processors applied African Locust Bean (ALB) afitin technology to soya bean Afitin production with some changes in the process operations. Three processes imply the use of soya bean in afitin production:

- Process 1 (85% of the interviewees). Soya beans are slightly roasted, grinded and winnowed to be dehulled, then boiled and fermented. The fermented soya beans are grinded into a paste and mixed with ALB afitin (1:3) before commercialization;
- Process 2 (14% of the interviewees). Soya beans are steeped crushed between fingers to be dehulled and winnowed, then boiled and fermented. The fermented soya beans are grinded into a paste and mixed with ALB afitin (1:3) before commercialization;
- Process 3 (1% of the interviewees). Soya beans are slightly roasted, grinded and winnowed to be dehulled, then boiled and fermented. Fermented soya beans are dried and bottled.

- Economic profitability study: 0.07 Euro/L from soy milk processing per household and 0.11 Euro/kg from soy afitin processing per household

#### Afitin

- Three types of taste enhancers: cubes, powders, liquids
- Twenty-three commercial brands
- Preferences for taste enhancers are determined by sensory properties such as taste, aroma and appearance of the product.



#### Milk

Processing 1 kg of soybean with 12 L of water gives 9 L of milk, which is equivalent to 30 bottles of 0.30 L. The duration of this

production is about 4 hours. This milk is stable for at least three months to ambient temperature. The analyses on the quality of the soy milk produced showed that

it kept its physical, chemical and microbiological characteristics during storage. The practice of steam sterilization has a positive effect on stability of the soy milk.



Figure 12: Validation test : production of stabilized milk at Zogbodomey by women's group called Wimakon

### Project management

- Regular technical and steering committee meetings were held with the implementing partners.
- Many field visit missions were carried out to support groups in the achievement of pre-tests on soy milk and the process of drafting a business plan
- The available information are regularly transmitted to all members of the consortium either by email or Skype or WhatsApp. New information on ProSAM are regularly posted on SOJAGNON-NGO website : [www.sojagnon.org](http://www.sojagnon.org)

### PARTNERS' MAPPING

