



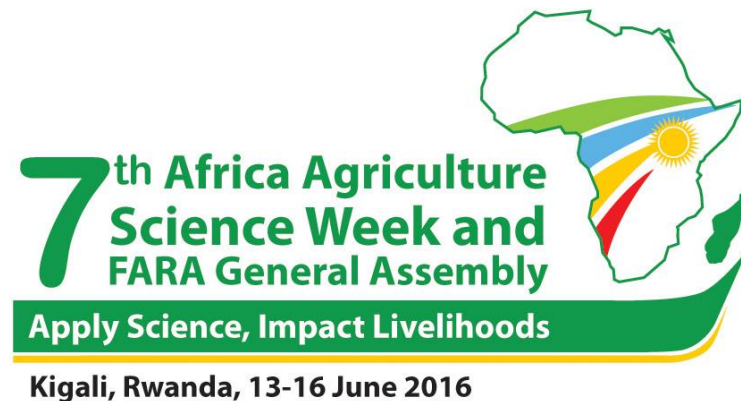
PAEPARD



What progress has CRF-Soja Benin made in the frame of food security and agribusiness promotion?

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June 14th, 2016





Outline

Why ProSAM?

What is ProSAM aiming at?

What have we achieved so far?

The agribusiness in ProSAM: BAIH

The way forward ...



Consortium Soja-Benin



**Project Soya
Afitin Milk
(ProSAM)**



Introduction: Why ProSAM?

- About 60% of Beninese consumes vegetable proteins: soybean, cowpea, moringa, etc.
- During the soybean regional forum organized by the Soy Alliance and gathering the actors of the soybean sector (farmers, processors, extension services, researchers and NGOs) in 2013 in Bohicon (Benin), a diagnosis revealed:
 - the low productivity and quality of processed soybean foods
 - the low fulfilment of market demand



Introduction – why ProSAM?

- This diagnosis confirmed the low technical support to soybean processors and highlighted the lack of cooperation between researchers and processors that hinders the emergence of solutions adapted to the constraints encountered by the processors
- To address these issues the current participatory project has been funded EU through FARA

- Two sub-projects:





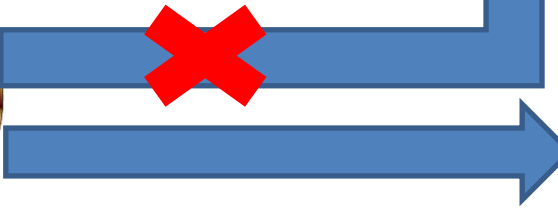
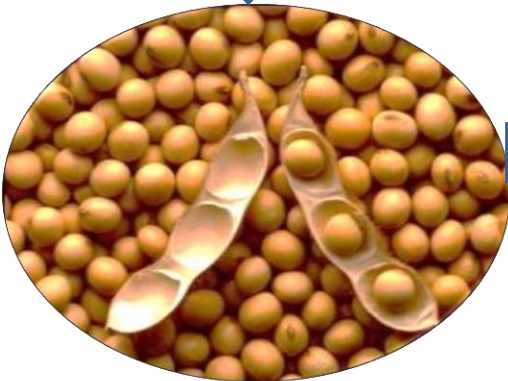
What is ProSAM aiming at?

Overall

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

More specifically

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





What has the consortium achieved so far?

in relation with project aims





Expected Result 1: **The existing soybean processing technologies are inventoried**

- Appraisal on soya based foods in Bénin
 - Survey in 08 municipalities with 530 processors
 - **Six products:**
 - **Milk, as the most commonly processed soya product**
 - **Cheese,**
 - **Afitin (fermented condiment)**
 - **Kebab (seasoned soya meat skewer)**
 - **Goussi**
 - **Infant foods (porridges)**



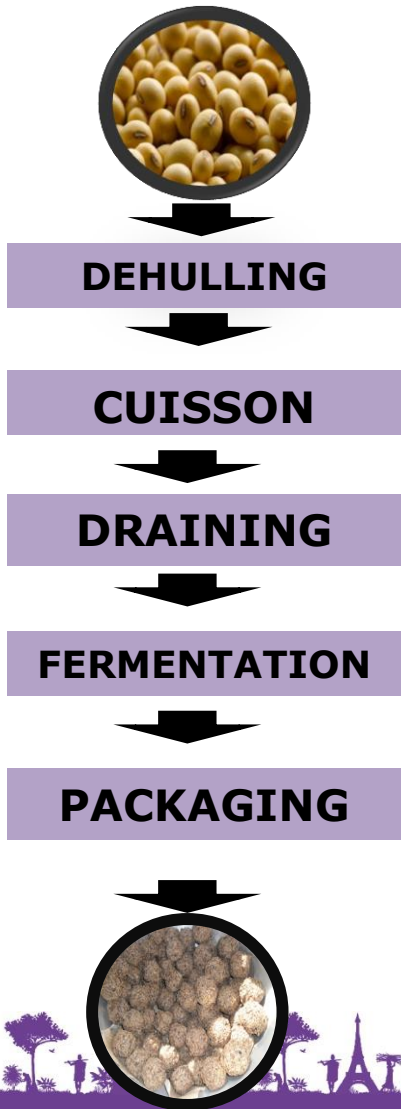
Expected Result 1:

Baseline studies on Soya Milk

- Surveys revealed 03 processing technologies based on
 - Soaking time of soya beans (4 hours - overnight)
 - Number of sieving steps (1 – 3)
- Purely traditional processing system
 - Milling with tomato machine made of ordinary iron
 - Boiling to separate the cream followed by cooling and bottling
- Soya milk yield 8L per Kg of soya beans

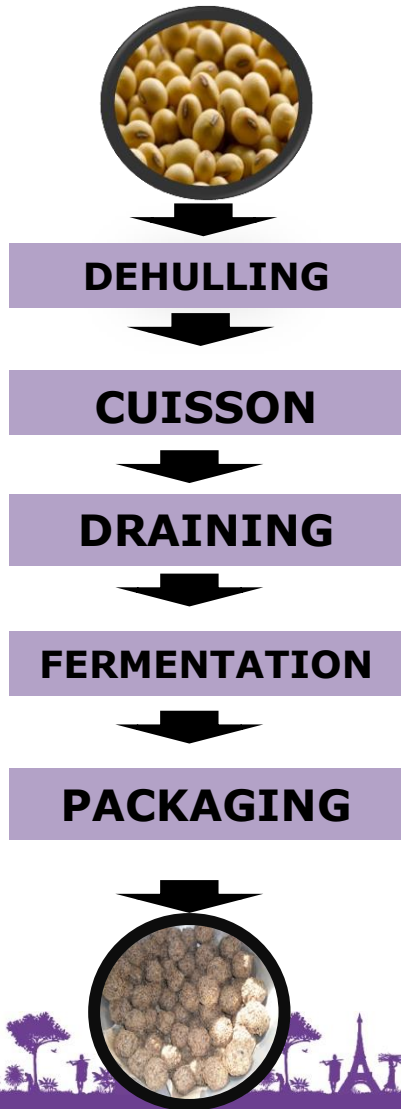
Expected Result 1:

Baseline studies on Soya Afitin



Expected Result 1:

Baseline studies on Soya Afitin



- Three identified technologies

- Roasting + mixture with fermented African Locust Bean
- Wet dehulling + mixture with fermented African Locust Beans
- Roasting + drying of end product



Expected result 2 :

Nutritional value, safety, consumer preference of Soya milk are assessed and documented

Shelf-life study of soya milk

Soya milk as produced by farmers can only be stored for 2-5 hours at ambient temperature.

Soya milk is packed in plastic bottles recycles (mineral water bottles), plastic sachet



Expected result 2 :

Nutritional value, safety, consumer preference of **Soya afitin** are assessed and documented

- Shelf- life study

The Afitin obtained only from soya bean have been stored for 12 days and sampled every 3 days.

- A significant change occurs in the product between day 0 and day 3
- However, from day 3 onto day 12, most the product traits did not significantly change





Expected result 2 :

Nutritional value, safety, consumer preference of **Soya afitin** are assessed and documented

- Shelf- life study
 - Dry matter content of soya bean afitin significantly increases indicating water loss certainly to be associated to the use of absorbent paper. Such water loss should favor product storage. Salt addition has contributed to this observation



Expected Result 3.

A1. Identification of suitable equipment for Soya milk processing



Expected Result 3.

A1. Identification of suitable equipment for Soya Afitin processing

- PRL dehuller
- Locally made Roaster
- Wooden fermentation box





Expected Result 3.


Optimization of soya milk production technology

- 10 processing technologies have been assessed
- Three technologies are the most appropriate based on the quality of the end product
 - Wet dehulling of soya grains (D)
 - Soaking soya grains for 20s in boiling water (B)
 - Roasting soy grains (T).
- Improved soya milk yield : 12L per Kg of soya beans
- Milk quality was of good hygenic quality



Expected Result 3.

Optimization of soya milk production technology

- The milk has been stabilized through **wet steam sterilization** increasing the shelf-life to at least three month.
 - The adopted sterilization equipment can easily be used by soya milk producers after training; soya milk stabilization technology can be easily transferred to the beneficiaries of the Project.
- 

Expected Result 3.

Sensory assessment of soya milk

Milks obtained **without roasting** are more appreciated by consumers than milk from roasted grains



Expected Result 3.

Validation of stabilized soya milk production par processors

Two pre-tests were conducted, with 27 soya milk processors in Zogbodoméy and 13 in Glazoué

The first pre-test focused on exchange on good hygiene and processing practices.


The second pre-test validated the stabilized milk pilot production by processors





Expected Result 3.

Optimization of soya afitin production technology

- Optimisation process focused on processing steps that have been reported as critical:
 - Dehulling through roasting and grinding
 - Fermentation
 - Formulation of a cooking aid receipy
 - Optimal conditions where set for the use of the identified roaster, dehuller and wooden box in a reproducible manner
 - Formulation of a cooking aid recepy is in progress.
- 



Expected Result 3.

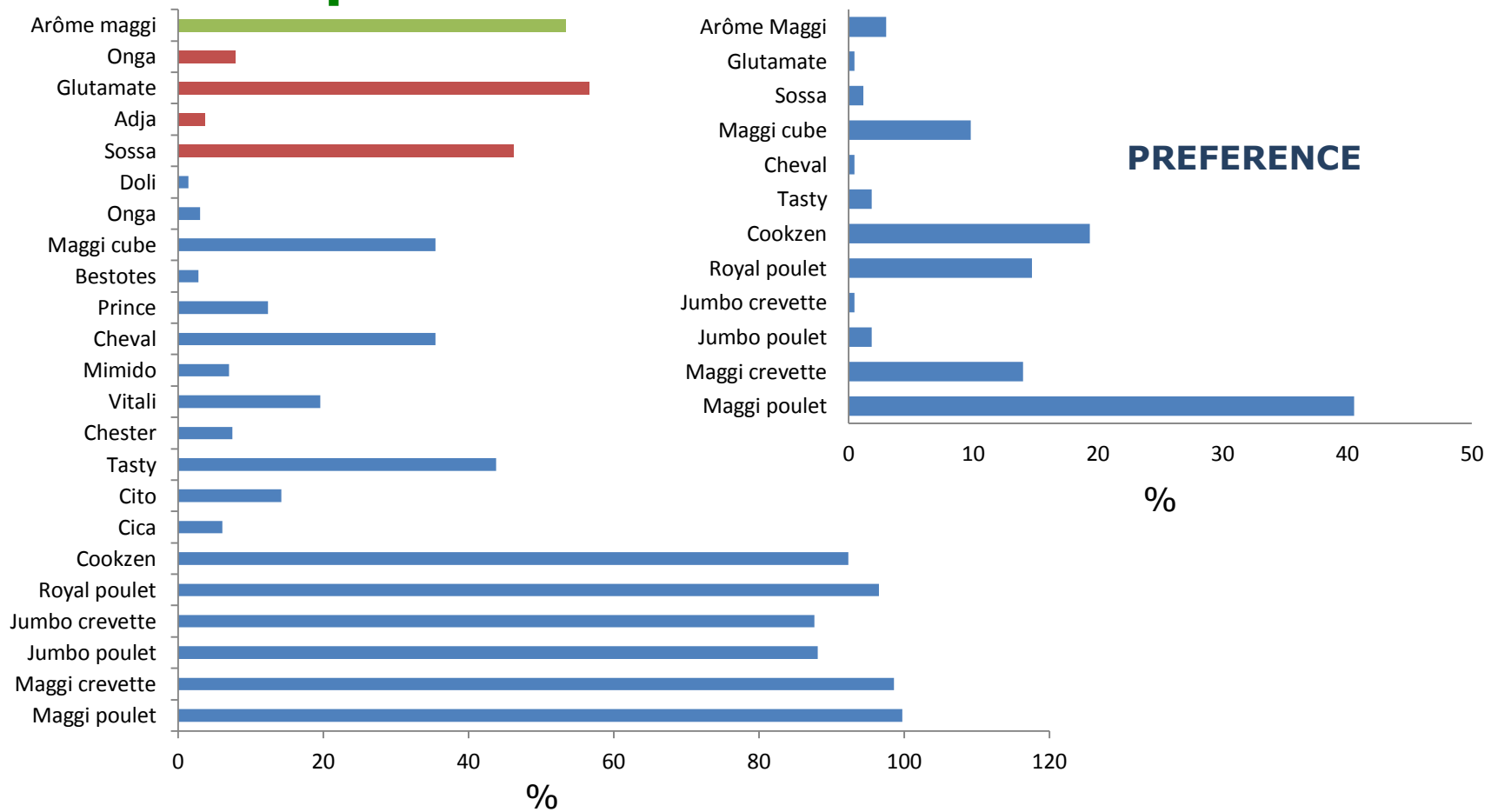
Consumer preferences and market study for **afitin** and developed formula

- Quality criteria for a good and fresh afitin have been documented.
- Experienced consumers prefer ALB afitin to the fermented soya beans but are in favor of soya based project



Expected Result 3.

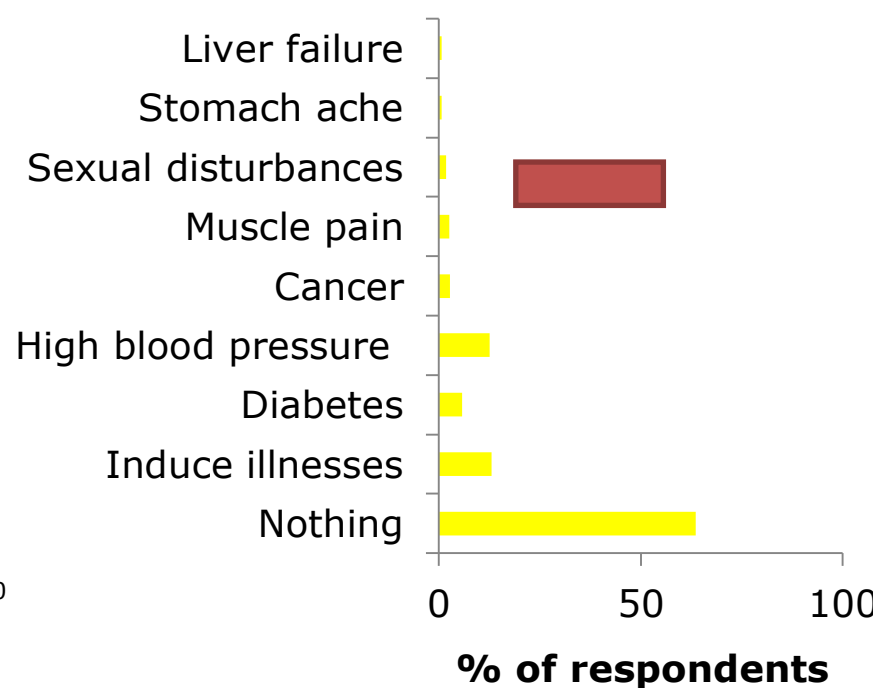
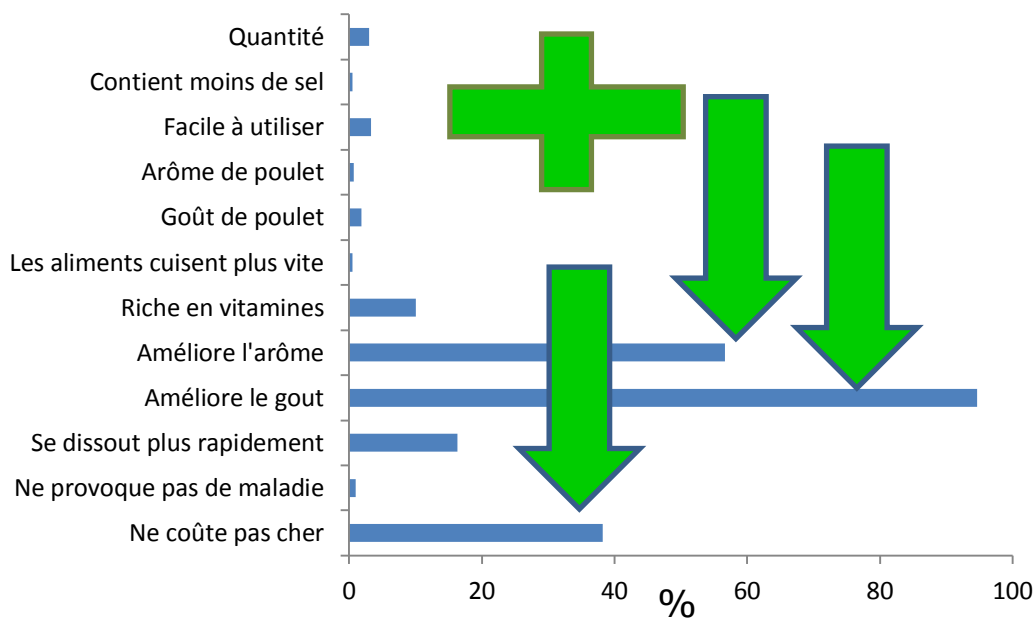
Consumer preferences market study for **afitin** and developed formula



Expected Result 3.

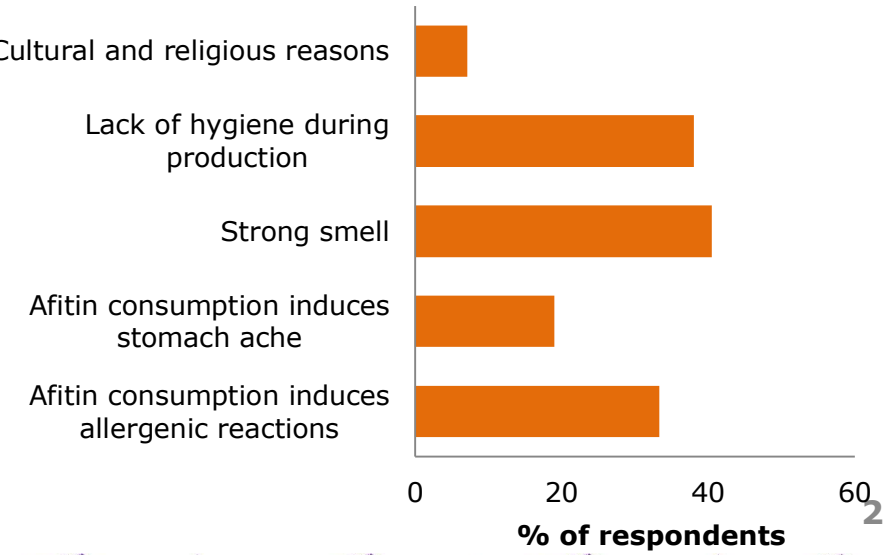
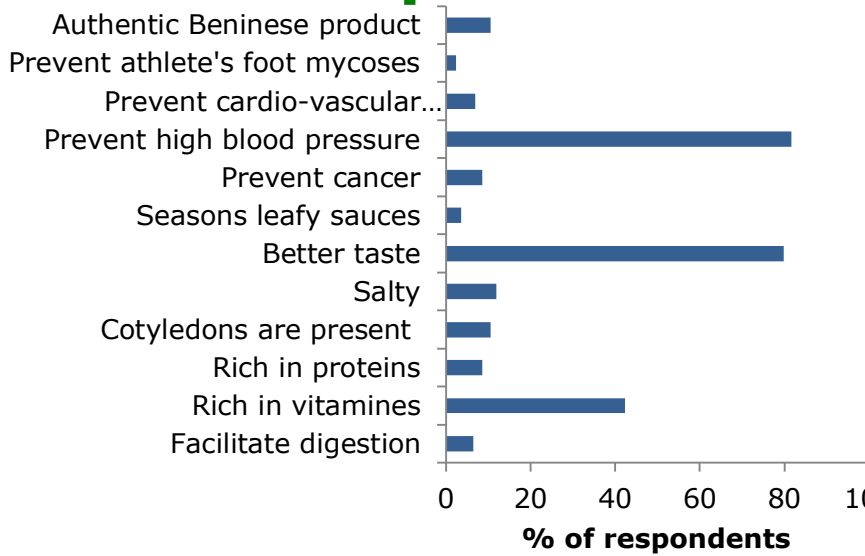
Consumer preferences market study for **afitin** and developed formula

- 80% of 429 respondents consume commercial taste enhancers and are aged less than 45 years



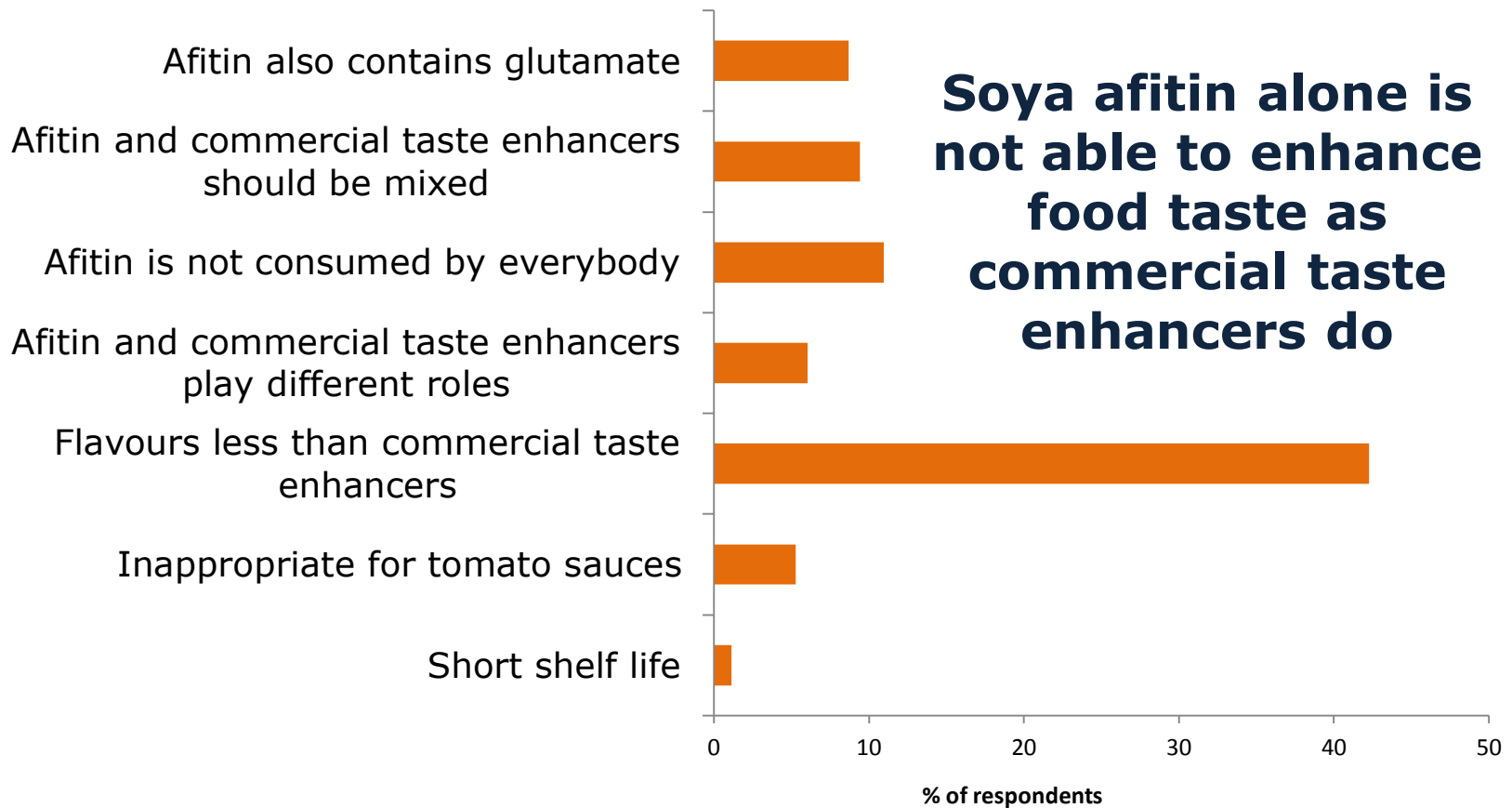
Expected Result 3.

Consumer preferences market study for **afitin** and developed formula



Expected Result 3.

Consumer preferences market study for **afitin** and developed formula





Expected Result 4. Improved technologies, skills and knowledge disseminated to consortium members and stakeholders

A1: Publications

The expected result of the activity is to ensure greater visibility of the project to the scientific community and other projects / programs.



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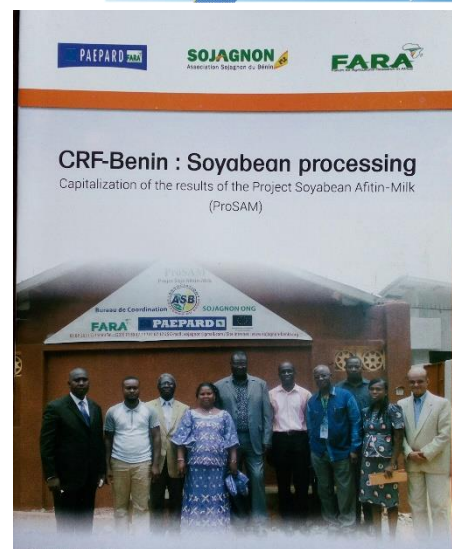


Lancement du Projet Soja Afitin-Milk (ProSAM)
«Re-engineered Soybean "Afitin" and Soybean Milk processing
technologies in South and Central Benin»

IMP Adhesion.com 07 07 08 10

Organisé par
l'Association pour le Développement du Soja au Bénin
(SOJAGNON-ONG)

Cotonou, le 29 octobre 2014





Expected Result 4.

Improved technologies, skills and knowledge disseminated to consortium members and stakeholders

A1: Publications

- **Posters (04)** were designed and presented at
 - Science and Technology Week organized by the University of Abomey-Calavi on April 21-25, 2016
 - ARF meeting in Entebbe/Uganda on Juillet – August 2015
 - GCARD EXPO forum on April 5-6, 2016 by PAEPARD.
 - AASW7 on June 13-16, 2016
- **Oral presentation** at FAO/FPPE on Improving rural soyabean processors' income through processing and packaging in Benin on November 3rd-5th, 2015 in Nairobi
- A BSc student defended his **dissertation on soya milk processing**



Expected Result 5.

The project is managed effectively and efficiently

- Technical meetings: a total of four technical meetings were held with the implementing partners
- Monitoring of the implementation of field work: a total of five monitoring missions were carried out to support groups in the achievement of pre-tests on soy milk and the process of drafting a business plan
- Capitalization of experiences: a total of 5 reports of missions, 4 reports of technical meetings, 2 quarterly reports (1 technical and 1 financial) for the period of October to December 2015 were drafted





Expected Result 5.

The project is managed effectively and efficiently

- The smooth flow of information among partners: The available information is regularly transmitted to all members of the consortium either by email or Skype or WhatsApp
- Information on ProSAM updated regularly posted on SOJAGNON-NGO website : www.sojagnon.org





What has the consortium achieved so far?

in relation with the partnership ...





Partnership development

- Consortium built based on bilateral already existing collaborations and trusts: helped to strengthen the consortium
- Dynamic consortium to address different issues and catch funding:
 - 02 ARF projects with different actors ProSESS (soya) & DAPIS (pineapple)
 - Application to a CRDI call on rice processing



Partnership development

- Submission of a proposal to the AAIF call of AAIN for funding the business plan on soya milk and soya cheese
- Initiated partnership with GIZ through ProCIVA to spread ProSAM research outputs to 17 municipalities outside ProSAM intervention area
- However,
 - Governance, fund rising and management competences of farmer organisations should be more reinforced



Bénin Agribusiness Incubation Hub (BAIH)

- BAIH to turn research results into Business
- **Initiate and promote** a network of agribusiness incubators in Benin
- **Mission**
Galvanise the entrepreneurship in Benin by incubation in agribusiness and monitoring of young entrepreneurs to create job and wealth



Bénin Agribusiness Incubation Hub (BAIH)

Specific objectives

- To facilitate the sustainable development of incubators in agribusiness
- To provide mentorship and consultancy services directly or indirectly related to the subject of the company
- To ensure general trades by import of materials and equipment for the agriculture industries and the export of agricultural products and their derivatives.



The way forward ...

○ Milk

- Chemical & nutritional characterization of stabilized soya milk (to be continued)
- Third validation session
- Training of processors on stabilized milk technology
- Profitability study of stabilized milk
- Business plan development for three women groups

○ Soya afitin

- Release of a cooking aid formula
- Developed cooking aid shelf life study
- Improved technology validation by processors
- Trainings on improved technologies
- Profitability study of stabilized milk
- Business plan development for three women groups





Coming opportunities

- ARF/NWO 2016 call
- Paepard writeshop for application to the UA call
- Co-cr ation ARF/NWO workshop organised in Benin by UAC/FSA (October 26-29, 2016)
- Agribusiness forum organised by AAIN in Ghana (October 4-6, 2016)





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