

## Factsheet final findings Applied Research Fund Call 1



### Agroecological food resources for healthy infant nutrition in Benin (INFLOR)

#### Summary

The INFLOR project aimed to contribute to improved access to better nutrition for children at the age of complementary feeding. The main research question was how to promote nutritious and affordable complementary foods for children based on local food resources (LFR)? The main objective was to develop and promote a certified, nutritionally improved, safe and affordable infant food based on LFR in Benin. Researchers, quality insurers and a private food company combined expertise and skills using appropriate tools for co-creation through seven work packages (WP). An LFR inventory identified nutrients and anti-nutrients composition and mapping; resulting in the successful development and analyzing of one infant food formula for industrial use and three generic formula for Agro-Ecological Zones (AEZ) of Benin. A comprehensive inventory on existing infant flours, as well as consumer acceptance and the effect of the newly developed formula on children's linear growth was assessed across the country. The project built the capacity of Group Pépité d'Or (GPO) on producing the commercial formula of the infant food (FARIFORTI) on a competitive manner. FARIFORTI produced by GPO was certified by the National Food Safety Agency according to standard procedures and allowed for sale on the markets. More than ninety households in the AEZ were trained on producing and cooking the new infant flours as complementary foods. A guideline for the choice of local food resources was produced, printed and disseminated to local partners involved in interventions related to human nutrition and local food resources valorization.

#### Final research findings

- Up to 116 species have been recorded as sources for infant foods (86 plant species and 30 animal species including insects, snails, and shrimps). Nutritional maps have been realised and compiled in a guide of nutritional choice according to AEZ.
- One standard recipe and three generic formula aligned with codex requirements were produced in a laboratory in close collaboration with GPO and accepted by consumers across the country.
- 28 brands of baby flours are listed on markets, of which 19 national brands. Only 10 brands (imported and national) are being used at household level and 63% of the households are still using the not-recommended flour for complementary feeding of the children.
- The commercial formula FARIFORTI contributes to total linear growth recovery of 37% to 75% and a partial linear growth of 25% to 43% of moderate malnourished children across eight different agroecological zones.
- The profitability index of a complementary food produced on the basis of local resources has been calculated and demonstrated the competitiveness of the production of FARIFORTI.
- The new formulation of the complementary food FARIFORTI was certified and allowed for sale on national and regional markets.

#### Outcomes achieved

A mother who participated in the efficacy test of FARIFORTI stated that before participation in the project her child was malnourished and would not eat the maize porridge she usually fed him with. The first time her child tasted FARIFORTI during a health session of the INFLOR project,

he liked the porridge a lot and asked for more. Further, she has learned that the diet of her child needs to be diversified to achieve nutrition intake adequacy. After using FARIFORTI for 12 days her child looked better and recovered. The product is tasteful and contains enough nutrients to help her child recover from malnutrition. She also mentioned that she learned how to use locally available resources to prepare similar porridge. FARIFORTI and the domestic formulas of baby food developed and disseminated by the project are efficacious in tackling specifically moderate malnutrition of children with complementary feeding age.

### Project messages to

#### A) Actors from private sector:

In a context of challenging rates of malnutrition such as in Benin, there are not enough specific baby flours formula for infant complementary feeding. This urges to promote enabling fair market access to healthy and certified baby food formulas based on local food resources.

#### B) Civil society and practitioners organizations:

Efforts are being made by agro-food companies to make a variety of baby flours available on the market, but only 14% of households have access to national infant food brands sold on markets. Therefore, there is a need to promote adapted domestic formulas, based on local food resources available in agroecological zones, through community nutritional education programs.

#### C) Policy makers:

Due to the low education rate, consumers can be misled by some brands offering not-recommended flours for complementary feeding. It should be mandatory that the assessment of the nutritional quality and certification of the formulas precedes the marketing of both national and imported brands of complementary flours. Regular quality control should be performed specifically to guaranty the quality of infant complementary foods at the markets.

### Knowledge products

- Paper "[Indigenous food ingredients for complementary food formulations to combat infant malnutrition in Benin: a review](#)", Journal of the Science of Food and Agriculture (July 2017)
- Paper "[Local agro-ecological condition-based food resources to promote infant food security: a case study from Benin](#)", Food Security Journal (July 2018)
- Technical note on nutritional food choice "[Guide de choix nutritionnel des ressources alimentaires local \(RAL\) au Benin](#)" - in French (July 2017)
- Methodological note on food ethnography "[Fiches methodologiques d'ethnographie alimentaire](#)" - in French (November 2017)
- Report "[Rapport d'étude des circuits de commercialisation des produits agroalimentaires entrant dans la formulation de la farine INFLOR](#)" (October 2017)
- Report "[Rapport d'analyse de la rentabilité de la production de farine infantile](#)" – in French (February 2018)
- Poster "[Bioavailability of iron, zinc and calcium in local foods resources traditionally used as ingredients in complementary foods for children aged 4-24 months](#)" (November 2016)
- Poster "[Ressources alimentaires locales riches en fer dans les zones agro-ecologiques du Benin](#)" (June 2017)
- Poster "[Local resources for infant food security based on agro-ecological conditions: a case study from Benin](#)" (November 2017)
- Poster "[Diversity of local foods resources traditionally used in infant feeding practices in Benin](#)" (November 2017)
- Video of the [launching workshop](#) (May 2015)
- Video of the [final workshop](#) (March 2018)
- Various theses and mémoires, see the INFLOR [Project page](#).

### Knowledge networks

Member of [AgriProFocus Benin](#)

### Knowledge co-creation

- Commercial and domestic formulas were developed through a co-creation process combining scientific knowledge from researchers, practical experience of agri-food business company, endogenous knowledge of the community, perceptions and preferences of the consumers and the expertise of national food quality agency.
- Policy makers will be added to the co-creation process to communicate for behavioural change of national companies marketing infant flours brand

### Consortium Partners

- GPO – Groupe Pépite d'Or
- ABSSA – Agence Béninoise de Sécurité Sanitaire des Aliments
- [Faculté des Sciences Agronomiques, Université d'Abomey-Calavi](#)
- [Wageningen University, Food Quality and Design](#)

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### Project website

[F&BKP Research Project page](#)