

Pest and disease management: GIMEM 2006-2016



Dr. Inrahim Baoua, taking the floor at a meeting with farmers' organization in Tera, Niger, October 4, 2017. Credit: Batamaka SOMÉ

"With the support of The McKnight Foundation and the other donors, we made considerable progress. In the past, we used to see our work on insects within the lab precincts only. Nowadays, we are well-versed at considering the **social aspects** and implications of our research, and we are proud of that! [...] We have also developed a quasi-autonomous **local expertise** in the villages."

Connect to other development institutions & initiatives

Changes in policies and practices among various actors

Biological control has attracted the interest of **politicians in Niger**: in 2012 and 2013, 6426 release bags for coverage of more than **two million hectares** were produced and distributed. Several **international NGOs** such as Mercy Corps, CARE, HEKS-EPER, Cadec, CRS, World Vision, and CONCERN introduced biological control in their field program

Scaling via commercialization

In 2016 there were **18 privately-run businesses** that produced biological control units -- 3 in Burkina Faso, 7 in Mali, 8 in Niger. A study revealed that these businesses, which often include women, have **22-187% profits**.

The production units produced 7331 parasitoid release bags to cover 2.3 million ha of pearl millet. It is expected to increase millet production by 235,000 tons

Social & Technological Inquiry

Refine management options

- Up to a **90% MHM larval mortality** rate can be achieved using the bags.
- The result indicate that 7 cm x 10 cm jute bags containing 50 g of millet grains, 30 g of millet flour, 25 *Corcyra cephalonica* larvae and two mated *H. hebetor* females are the most effective option for on-farm delivery of the parasitoid. A distribution of **15 bags per village can cover a radius of 5 km 3-4 weeks after release**.
- 2013: The parasitism by *H. hebetor* was significantly higher in villages where parasitoid bags were placed than the control villages (DF=1; F=20.76; P<0.05).

Phased and emergent design & implementation

Utilization-focused

Farmers receive bags in the Tahoua region of Niger. Photo credit: Laouali Amadou



Develop research technologies

2010: Research led to innovation of being able to **raise the wasp in easily distributed jute bags**.

Test management options, including working with farmers

Experimental releases of *H. hebetor* in 107 villages, with the distribution of 1605 release bags, assessing the impact of releases in 47 villages by **observing 33,600 millet spikes**.



Strategic prioritization: tackle pests that affect the crops of interest to CCRP in selected contexts

The Millet Head Miner (MHM) is a **serious pest** of millet and can **affect up to 70%** of millets' panicles in the regions of Niger, Mali and Burkina Faso.

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West Africa Community of Practice



GIMEM Niger Site 2016

Project Partners

L'Institut d'Economie Rurale du Mali (IER)

L'institut de l'Environnement et de Recherches Agricoles (INERA)

Institut National de la Recherche Agronomique du Niger (INRAN)

University Dan Dicko Dan Koulodo of Maradi

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