



**– International Fund for Agricultural Development –
– Identifying and sharing innovation in Western and Central Africa –**

– Farmer field schools (FFSs) –

I. Context

1. Name of the innovation

Participatory development and dissemination of cowpea technologies: farmer field schools (FFSs)

2. Country – Region

Benin, Burkina Faso, Cameroon, Ghana, Mali, Mozambique, Niger, Nigeria and Senegal

3. Organization

International Institute of Tropical Agriculture (IITA)

4. Who is the innovator?

IITA and farmers

5. Actors involved

IITA, national agricultural research systems (in particular IER, INRAN, INERA, INRAB and IAR) and IFAD investment projects in the countries in question

6. Starting date

2000

7. Type of innovation

Innovation relating to technology, knowledge-sharing and policy

II. Key concepts

8. Summary

This innovation is primarily intended to boost producers' capacities through: (i) decision-making based on observation of the real situation in the field; (ii) identification of potentially damaging pests and their natural enemies; (iii) collection and analysis of field data according to the principles of agroecosystem analysis; and (iv) identification of appropriate technologies for the local agroecological and economic conditions of the producers. An FFS is generally based on weekly meetings during the cropping season: 25 to 30 producers meet once a week to make observations, analyse the agroecosystems of cowpea plots and decide on appropriate interventions. For the participants, the field constitutes a hands-on situation where they learn on the basis of real facts and events. The FFS training curriculum covers choice of varieties, germination trials, cropping techniques appropriate for various types of soil, soil fertility management, identification of cowpea insects (pests and natural enemies), integrated pest management, harvesting techniques and financial evaluation of production. During training, priority is given to non-chemical techniques of controlling pests in fields and storage premises (integrated cowpea management, use of plant-based pesticides and solar disinfection of harvested produce), and to maximizing producers' indigenous knowledge. Other activities such as the testing or validation of new technologies, discussions on a specific theme and group dynamics exercises are also undertaken.

9. What problems does this innovation seek to solve?

- The uncontrolled use of synthetic and unrecommended chemical pesticides, and food poisoning and environmental pollution by synthetic chemical pesticides
- The complete dependence of producers on extension agents when making decisions on their agricultural activities in a context where there are only limited numbers of extension agents
- The lack of sufficient elements for an assessment that would enable producers to adapt innovations to the ecological conditions of their fields and their socio-economic situation

10. Factors for successful replication

- A participatory approach based on "learning by doing" is used.
- It can be adapted to many crops and socio-economic contexts; in Benin, the African Cowpea Project (PRONAF) has already worked in collaboration with a multisectoral programme against AIDS to test its ability to reduce the vulnerability of rural communities to HIV/AIDS.
- It is based on local constraints and allows the promotion of local innovations.
- Thanks to farmers' field forums, producers make substantial savings on agricultural inputs, while ensuring good quantities of high-quality produce.
- The process of selecting participants in the FFSs ensures the inclusion of vulnerable categories such as young people, women and the rural poor.
- The FFSs encourage the dissemination of innovations among producers, especially where there is a lack of extension agents.

11. Main results

- Strengthening of ties between farmers and local formal and informal institutions
- Development of new strategies for exchange and collective reflection
- Development and adoption of varieties of cowpea and agricultural practices (germination trials, sun drying etc.), leading to improved production in terms of both quality and quantity
- Reduction in the use of synthetic chemical pesticides and their rational, efficient use
- Protection of human health thanks to the preferred use of plant extracts and integrated pest management
- Better dissemination of good practices, with adoption by more than 75 per cent of the farmers trained.

12. Target group(s)

Young people, women and small farmers are especial targets.

13. Difficulties encountered

- Plant extracts produced manually and in small amounts, so that a wide area cannot be treated
- Lack of any additional value placed on biological cowpea produced solely with plant extracts
- Scant involvement of national extension structures in some countries
- The ongoing nature of activities to strengthen FFS capacities, limiting the number of farmers trained compared with traditional extension methods
- Weakness of the local credit system to support farmers in acquiring the necessary tools for agricultural production

14. Financial aspects

The main financial constraint on FFSs is the unit cost of training, which covers the whole cowpea cycle, or an average of 12 weeks. However, the Africa Cowpea Project (PRONAF) has been able to reduce this cost considerably, thanks to the use of farmer-facilitators.

III. Technical aspects

15.

FFSs are introduced under the project to encourage farmers' active participation in the development and dissemination of innovations concerning cowpea. This process is intended to strengthen farmers' decision-making capacities. Their knowledge and know-how is put to work through an ongoing exchange with researchers and extension agents. In weekly forums, researchers provide major technical support for the development and validation of innovations, with extension workers from NGOs, development projects and national extension services contributing their knowledge on cowpea and on the dissemination of technologies, and producers contributing their knowledge and experience regarding cowpea production. Many innovations, especially concerning insecticides and insect repellents made from plant extracts, are suggested by farmers. After training, the farmers become facilitators in their environment and play an important role in disseminating innovations. Validation of research results is carried out by farmers and development agents. Working groups managed by farmers are set up to carry out joint analysis of results obtained on the ground.

IV. Further information

16. Key contacts

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Ousmane Coulibaly, Senior Agricultural Economist	IITA	u.coulibaly@cgiar.org

17. Internet links

- www.iita.org (sections concerning cereal and legume systems, agro-biodiversity, and agriculture and health)
- www.ifad.org (activities in sub-Saharan Africa)
- www.pronaf.info

18. Key documents (document title + link or contact or address)

- Adéoti R., Coulibaly, O. & Tamo, M. 2002. Facteurs affectant l'adoption des nouvelles technologies du niébé *Vigna unguiculata* en Afrique de l'Ouest. *Bulletin de la recherche agronomique du Bénin*, 36.
- Adetonah, S., Atachi, P., Coulibaly, O. & Tamo, M. Perceptions Paysannes et Protection de l'environnement: Gestion intégrée de lutte contre le foreur des fleures et gousses du niébé maruca vitrata au Bénin. *Benin*. IITA.
- Coulibaly, O., Togbé, G.A.G., Tossou, R.C. & Gbaguidi, B. 2005. Champ Ecole Paysan et renforcement de l'influence sociale des producteurs de niébé dans le Département du Couffo au Bénin. *Bulletin de la recherche agronomique du Bénin*, 50:1-9 (December 2005).
- Gbaguidi, B. 2005. *Analyse de performance du CEP paysan dans l'utilisation et la diffusion des technologies par les producteurs: cas du Projet Niébé pour l'Afrique au Bénin*. Mémoire pour l'obtention du DEA.
- James, B. Coulibaly, O. & Gbaguidi, B. 2003. New solutions for cowpea production in Africa. *Pesticides News*, 61:12-13 (September 2003).
- Nathaniels, N.Q.R. 2005. *Cowpea, FFS and Farmer-to-Farmer Extension: a Benin case study*. AGREN Paper 148.