

# Products

## Anti-insect nets

Anti-insect nets are an innovation developed, tested and distributed in Benin and Kenya. They form a physical barrier designed to block access to crops by pests. The preliminary results obtained in Benin by cost-benefit analyses show that anti-insect nets can help achieve profitability rates up to 3 times greater than with farming practices actually observed.

> [thibaud.martin@cirad.fr](mailto:thibaud.martin@cirad.fr)

## Family Farms in West and Central Africa: Challenges, characteristics and management factors

Based on recent trials in West and Central Africa, this work offers new analysis methods of African farms, and an approach for advising producers. P. Dugué, J. Jamin, M. Gafsi, J. Brossier

> <http://www.quae.com/>

## Structural Transformation and Rural Change Revisited

Despite 25 years of deregulation, the structure of Sub-Saharan Africa's economies has evolved little, and agriculture remains a major lever in facilitating their change. This is the subject taken up by the large-scale study conducted by RuralStruc, which was an opportunity to compare the situation of rural households and the role of agriculture in seven African and Latin American countries... Available to download in pdf from the Cirad site [www.cirad.fr](http://www.cirad.fr)

## Farmers and entrepreneurs: investing in smallholdings for food security.

Report by the High Level Panel of Experts on Food Security and Nutrition, Committee on World Food Security, Rome, 2013. This report presents a study of the obstacles to agricultural investment by smallholders, and suggests general policy options for clearing these obstacles. Available to download in pdf from the Cirad site [www.cirad.fr](http://www.cirad.fr)

> Contact: [christelle.monier@cirad.fr](mailto:christelle.monier@cirad.fr)

# Training

## Human science investigation methods applied in the rural environment

This e-learning module was co-produced by Cirad, IAMM and SupAgro with the help of UVED. This on-line training [available in French, English and Spanish] is preparation for conducting qualitative investigations used in human sciences in addition to other investigation methods: from framing the problem to data processing and interpretation, as well as the design and execution of semi-directive interviews.

> <https://enquetes-cirad.iamm.fr/> Contact : [nicole.sibilet@cirad.fr](mailto:nicole.sibilet@cirad.fr)

## Training in use of anti-insect nets

This training is aimed at all players interested in this innovative product. The positive results obtained thanks to proper use of these anti-insect nets are due to the combined effect of better yields [smaller losses, higher unit weight], better market prices [visual quality] and a fall in insecticide quantities.

## Management advice to family farms in the cotton zone

This training module in agricultural consultancy is aimed at agriculture colleges wanting to give their pupils awareness of farm management, based on modules tailored to the specificities of family farms in Africa.

## Pastoral farming - societies and lands

The aim of this training is to provide a multi-disciplinary vision of the operation of pastoral systems, their current and potential role as part of sustainable development, and provide the framework and analysis tools to evaluate their relevance and their potential in various development contexts.

## Support modelling – Roleplaying for players to share representations and simulate dynamics

This research seminar is aimed at researchers, students and practitioners working on participative approaches and adaptive management of man-made complex systems.

> VIP contact: [florence.paulet@cirad.fr](mailto:florence.paulet@cirad.fr)

> <http://www.cirad.fr/en/teaching-training/available-training>



Editor: Patrick Caron, Director of Research and Strategy

Coordination: Technology Transfer and Development Office

Editorial Committee: CIRAD network of Technology Transfer and Development Coordinators - [vip-cirad@cirad.fr](mailto:vip-cirad@cirad.fr)

Avenue Agropolis, TA 181 / 04 - 34398 Montpellier Cedex 5, France  
Tél : +33 4 67 61 44 61 - Fax : +33 4 67 61 75 37

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# VIP

TECHNOLOGY TRANSFER  
AND DEVELOPMENT NEWSLETTER

# Family agriculture

Family agriculture is the number one source of employment across the globe. Representing the vast majority of farming worldwide, it covers 2.6 billion people, i.e. nearly 40 % of the world's population on 500 million farms and can supply not only local markets, but also national and international markets.

Labour is the essential characteristic of this type of agriculture. Family-run farms are often small in size (though it is not a distinguishing criterion), and their operation is primarily based on family workforce. Hence the family derives from its agricultural activities some of the foods that they consume, as well as some revenue. The diversity of situations observed complicates the characterisation of this form of agriculture.

Family agriculture may be synonymous with profitability if a smart investment strategy is followed (development of high added-value crops, product processing, etc.). However, as it is part of a network of local relationships which encompass a host of exchanges, the entanglement between "family heritage" and "production assets" may become a limiting factor for investment. Problems of access to land or funding, disconnection from the markets and lack of training may also limit the profitability of farms struggling to intensify their production.

This theme represents a strong and long-standing commitment from Cirad, which in 1998 already was implementing a "family agriculture and globalisation" programme.

## FOCUS

The no. 1 source of employment worldwide, family agriculture is also the world's no.1 food supplier.

[www.cirad.fr/innovation-expertise](http://www.cirad.fr/innovation-expertise)

cirad  
LA RECHERCHE AGRONOMIQUE  
POUR LE DÉVELOPPEMENT

# Expertise, project and partnership

## FARMAF project

*"The objectives of the FARMAF (Farm Risk Management in Africa) project are, on the one hand, to reinforce access for family agricultural producers to private agricultural risk management tools, and on the other hand, to analyse the impact of these tools on the living conditions of agricultural producers. The tools in question are agricultural insurance, warrantage and market information systems.*

*As part of the implementation of the FARMAF project, Cirad is harnessing its skills in micro-economic analysis of the behaviour of producers in risk situations (climate risks such as drought and market risks such as price volatility), and in assessment of calibration of insurance and information tools on the markets.*

*The main challenges of the project relate to capacity building of the agricultural producers and of their partners. This involves being able to employ private risk management tools, being able to generate operational knowledge about the conditions of efficiency for these tools, and being in a position to re-use them in other national situations. One of the particularities of the project is being based on close collaboration, in three contrasting African countries, between research bodies and producers' organisations."*

The project brings together three Northern research bodies (Cirad, NRI, WUR) and producers' organisations in Burkina Faso (CPF), Zambia (ZNFU) and Tanzania (MWITAWA). It also counts on the participation of regional platforms of producers' organisations (ROPPA, EAFF, SACAU, PROPAC, PAFO), giving it a continent-wide dimension. The project has funding from the European Commission amounting to 4.7 million euros.

> Elodie Maitre d'Hotel, CIRAD project manager and activity coordinator in Burkina Faso



## RESEARCH issues

The essential issue in terms of research concerns support of family farms. For Cirad, building the innovation capacities of family producers is a central challenge. To do so, it is necessary to generate original knowledge relating to the evolution of family farms and of the changing context in which they are set. It is also necessary to develop tools and methods with a certain degree of genericity to be usable in similar situations of comparable nature, and support the players in the innovation process. This objective of generating scientific knowledge for supporting family farms can be achieved through renewing research methods (participative research or research-action in partnership): by recognising that there are no standard answers, problems and solutions are identified with the family farms, in accordance with their organisations. This objective can also be achieved by intensifying innovative research work into production systems to promote ecological intensification, into agricultural consultancy to promote learning and build the autonomy of producers, but also into public policies to create an enabling environment favourable for family farms.

## MAFF (management advice to family farms)

MAFF resembles the "Farmers' Schools" approaches which promote learning among farmers, but putting the "farmer and their family farm" at the centre of concern. It is a process of building their capacities to master the various facets of their business (agricultural production and other revenue generating activities, work organisation, cash flow management, food stocks management, etc.) in order to achieve their various family objectives.

For several decades in French-speaking Africa these approaches have been promoted with the support of backers such as the French Development Agency (AFD), NGOs such as "Agriculteurs Français et Développement International" (AFDI) and CIRAD.

> Joint research unit Innovation and Development in Agriculture and the Agrifoods Sector, Guy Faure

## Designing innovative cropping systems for sustainable production in family agriculture

Annual rain-fed crops make a huge contribution to the food security and economic stability of tropical family agriculture. In this field Cirad is seeking to propose innovative systems, which protect and harness the natural resources available over the short and long term, and which stabilise, or are now even increasing productivity, while limiting the environmental impacts of agricultural activities.

> Internal research unit Annual Cropping system, Eric Scopel

## Sustainable charcoal production

Charcoal production may be difficult and costly when resources are depleted and soil fertility is falling. Enriched tree-planted fallow land can provide solutions. It can contribute to transforming itinerant slash-and-burn agriculture, highly damaging to the environment, into settled agriculture, which helps conserve resources and is therefore more sustainable.

> Internal research unit Tropical forest goods and ecosystem services, Régis Peltier, Pierre Montagne

## Preserve and use the agro-biodiversity of root vegetables and tubers.

Cultivated by the poorest farmers on small plots, roots and tubers are omnipresent in the countries of the intertropical zone. However, genetic erosion of these plants is gathering pace, creating the need for a new form of agro-biodiversity management: the geographic distribution of allele diversity is providing interesting results.

> Joint research unit Genetic Improvement and Adaptation of Mediterranean and Tropical Plants, Vincent Lebot

## And also...

**Supporting operators in improving meat quality in Southern countries**

**Training farmers in the project approach**

**Family agriculture and impact on food safety in various geographical contexts**

> VIP contact: [christelle.monier@cirad.fr](mailto:christelle.monier@cirad.fr)

## Family agriculture and future worlds

*Family agriculture and future worlds. Collective work by Cirad researchers, coed. Cirad-Quae-AFD.*

What types of family agriculture are there? What roles can they play faced with worldwide challenges, and how can they contribute to sustainable and fairer development? This book puts into perspective the research conducted in partnership, and in the long-term by Cirad on family agriculture, the dominant organisation mode of agriculture, particularly in Southern countries. It has mobilised around fifty agronomic researchers, economists, sociologists, geneticists, zoologists, anthropologists and political scientists. The English version will be published in summer 2014. <http://www.quae.com/>

