



# Impact Brief

S U S T A I N A B L E T R E E C R O P S P R O G R A M

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## ***Farmer field schools on cocoa integrated crop and pest management: a new way to reach farmers***

Over the past 10 years, efforts by parastatals in cocoa marketing and extension have collapsed. Extension activities are weak in the major cocoa producing countries in West and Central Africa. A recent STCP survey found that the government extension system was the most important source of information for just 13% of cocoa farmers in Ghana and for 32% of farmers in Côte d'Ivoire where only 19% had been in contact with an extension agent within a period of three months. Across the region many cocoa farmers rely on radio for technical information. Yet, applying known management practices could reduce many of the production problems facing small-scale cocoa farmers, such as low yields, diseases, pests and poor cocoa quality. Top-down, "technology transfer" approaches that emphasize recommendations have been one reason for low farmer uptake of improved management practices.

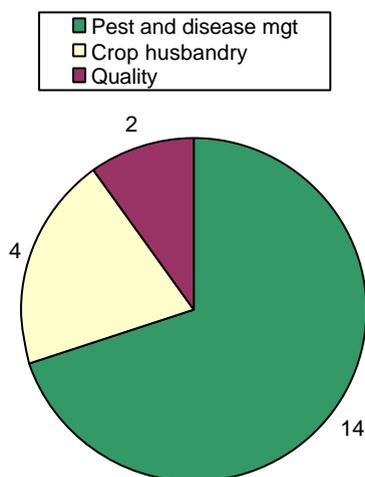
Since 2003, the Sustainable Tree Crops Program (STCP) has pioneered farmer field schools (FFS) on cocoa in Côte d'Ivoire, Ghana, Nigeria, and Cameroon. The objective is to intensify cocoa production systems in a sustainable way. This participatory training approach encourages farmers to make their own discoveries about management practices, to reduce their dependence on costly inputs such as pesticides, and to improve their understanding of crop and pest management. Through the FFS, farmers learn about biological processes and interactions in the cocoa agro-ecosystem. This knowledge allows them to become "experts" in their own fields and to make sound management decisions.



*Cocoa researchers and extension staff reviewing the FFS curriculum*

Several steps have to be taken in settling up an FFS program. The main production constraints have to be identified through formal and informal surveys. Then a training curriculum has to be developed. This is made up of simple experiments that allow farmers themselves to discover basic crop and pest management principles. STCP brought together expert teams of national and international cocoa researchers and extension staff to develop a curriculum on cocoa integrated crop and pest management (ICPM). The Program also has the advantage of linkage with the global chocolate industry and the invaluable experience of its field staff in the curriculum development process. In drawing up the curriculum we developed learning protocols (similar to lesson plans in conventional teaching) and field guides. These were field-tested in pilot FFS in Côte d'Ivoire, Ghana, Nigeria, and Cameroon. Farmers and technical experts evaluated and reviewed protocols that were then further revised.

The cocoa ICPM curriculum consists of 20 technical discovery learning exercises. These focus on three broad topics: crop husbandry, pest and disease management, and cocoa quality. It also addresses social topics of relevance to cocoa farmers such as responsible labor practices and HIV/AIDS.



Number of protocols in STCP cocoa FFS curriculum by topic

A manual entitled "Learning about sustainable cocoa production: a guide for participatory farmer training: 1. Integrated Crop and Pest Management", contains the cocoa ICPM curriculum in addition to technical bulletins for FFS facilitators. The manual, available in English and French, and designed for use by FFS facilitators (farmers and extension agents) can be downloaded from STCP's web site: [www.treecrops.org](http://www.treecrops.org). As we integrate new material, this manual will be periodically updated. Despite being extensively field-tested, the manual is very much "work in progress" as we seek to improve our training curriculum. STCP plans to develop FFS curricula on other cocoa-related topics, such as rehabilitation and tree diversification.

Contributors to the FFS ICPM manual: IITA, Centre National de Recherche Agronomique (CNRA), Cocoa Research Institute of Ghana (CRIG), Cocoa Research Institute of Nigeria (CRIN), Institut de Recherche Agricole pour le Developpement (IRAD), CABI Bioscience, International Labour Organization (ILO/WACAP), USAID, the global chocolate industry represented by the World Cocoa Foundation (WCF), individual chocolate companies and trade associations, and DfID UK.

## Cocoa FFS Curriculum Manual: Contents

### Part I: Technical bulletins for trainers

- Black pod disease
- Swollen shoot virus
- Mirids
- Stem borer
- Termites
- Rodents
- Mistletoe
- Rational pesticide use
- Farm maintenance
- Pruning
- Farm sanitation
- Applying fertilizer to cocoa trees
- Rehabilitating, regenerating and renewing a cocoa farm
- Harvesting, pod storage and breaking
- Fermentation
- Child labour in cocoa production

### Part II: Discovery learning exercises

#### Starting FFS

- Cropping calendar
- Nine dot game
- Ballot box

#### Agro-ecosystem analysis

- Agro-ecosystem concept illustration
- Agro-ecosystem analysis

#### Crop husbandry

- Canopy shade management
- Pruning older trees
- Deciding whether to rehabilitate or replant a cocoa farm

#### Managing cocoa diseases and pests

- Impact of humidity and the role of diseased pods in spreading black pod
- Cocoa disease infection study

#### Cocoa quality

- Impact of harvesting time on fermentation and cocoa quality
- The role of soil in the spread of black pod

#### Black pod disease zoo in the field

- Insect zoo I- symptom development
- Insect zoo II-symptom development
- Insect zoo-predation exercise

#### Insect zoo-life cycle development

- Determining mirid damage threshold for essential insecticide application

#### Rational pesticide use

- Calibration and performance of sprayers
- Improved spraying practice for mirid control
- Pesticide specificity test

#### Spray dye exercise

- Botanical pesticide screening
- Pesticide resistance role-play

#### Cocoa quality

- Impact of harvesting time on fermentation and cocoa quality
- Drying cocoa on raised, covered platform

#### Economic analysis of cocoa production and FFS evaluation

- Estimating the profitability of new ICPM practices
- FFS impact evaluation

#### Social topics

- Introduction to child labour issues
- Children carrying heavy loads in cocoa production
- The use of pesticides and chemicals by children in cocoa farms
- The use of sharp farm tools by children in cocoa cropping activities
- Raising awareness about HIV/AIDS
- HIV/AIDS risk map

### Part III: Guides for implementing field activities

- Sanitary harvesting
- Removing chupons
- Removing moss and epiphytes
- Removing mistletoes
- Where to apply ground fertilizer
- Making compost
- Post-harvest activities

**STCP Impact Brief** is a series on tree crops issues, and related research done by or on behalf of the Sustainable Tree Crops Program (STCP).

STCP Impact Brief aims to provide information to be utilised by the public and private sectors, and community organizations. It intends to help frame policy discussions while stimulating dialogue amongst tree crops stakeholders so as to foster an understanding of the social, economic, environmental and political implications of the integration of innovations in West and Central Africa.

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