



# INVOLVING THE PRIVATE SECTOR IN RESEARCH: LESSONS FROM THE AGRICULTURAL SECTOR

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# What can we offer private sector in the context of alleviating poverty and promoting sustainable livelihoods?

- **Increases in productivity/quality/reliability of supply of commodity**
- **Development of new products**
- **Evaluation and promotion of products**

# IPM FOR COCOA IN WEST AFRICA

- **65% of world cocoa production from West Africa**
- **>6 m families depend on cocoa in Ghana**
- **Yields 300-500 kg/ha, well below potential**
- **Mirids and black pod identified as main constraints**
- **Insecticides and fungicides widely used**
- **Increases in productivity of cocoa reduce need to cut down forest**



# DFID RNRRS PROJECTS ON IPM FOR COCOA IN W. AFRICA (CABI/NRI/IC)

- **Curricula for FFS developed**
- **FFS, FPR in Cameroon, Cote d'Ivoire, Ghana, Nigeria,**
- **Training manual, videos**
- **Rational pesticide use**
- **Biocontrol of black pod and mirids**
- **Pheromones for control of mirids**
- **Model for optimising management inputs**





## *Sustainable Tree Crops Program*

...Helping the Smallholder Farmer in Africa



- **Private Sector Funding**  
**World Cocoa Foundation**  
(incl. Hershey, Kraft, Nestlé, etc.)
- **Public Sector Funding**  
**USAID, DANIDA, CIDA, USDA,**  
**WB, GTZ**
- **Managed by IITA**



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- **Strengthen community-focused groups**
- **Transfer best technologies to farmers**
- **Create regional marketing and information systems**
- **Prevent and eliminate worst forms of child labour**
- **Identify and promote sound policy options for tree crops**



## Additional funding from:

- **Masterfoods**
- **Cadbury**
- **UK BCCCA**



## Public Sector:

- **cost-effective increases in productivity, hence incomes for poor people**
- **reduced pesticide use**
- **reduced pressure on land**

## Private Sector:

- **improved productivity**
- **improved quality**
- **improved stability/sustainability of supply**





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# COFFEE IN INDIA



- Provides livelihoods for over 500,000 workers and their families
- 98% of growers own less than 5 ha
- Coffee and shade trees prevent erosion and maintain biodiversity in poor hillside areas



# Coffee White Stemborer

- Main constraint on arabica coffee in India, Nepal, Thailand, China
- Replanting involves capital loss and loss of income
- No effective control following withdrawal of BHC



# Research by NRI in collaboration with Indian Coffee Board funded by DFID RNRRS and CFC

- Sex pheromone isolated, identified and synthesised
- Lures and traps developed
- Reduction in beetle populations demonstrated in large scale field trials



# Commercial production of traps and lures taken up by Biocontrol Research Laboratories subsidiary of Pest Control India

- 10,000 in 2005, 40,000 in 2006
- Promoted by Coffee Board and Extension
- Company keen to engage in further development of technology
- Govt very supportive of biorational approaches to control of pest and diseases





## Public Sector:

- **involvement of commercial sector essential to make research outputs available**
- **cost-effective increases in productivity, hence incomes for poor people**
- **reduced pesticide use**

## Private Sector:

- **SMEs cannot fund R&D**
- **some sharing of risk**
- **credibility enhanced by association with public sector**

## But....

- IP difficult to protect, but company get “know-how”
- Coffee Board/growers unhappy with one supplier
- Company not prepared to scale-up until market more certain, but require scale-up to establish market
- Still relatively small “niche market” with larger players not interested



# Pheromone traps for cocoa mirids in West Africa

- Researchers and extension less effective than in Asia
- No SME's capable of taking up work in W Africa
- IP – researchers regard it as potential source of income but do not have capacity to develop own enterprises



# **“Green Muscle” – biopesticide for control of locusts and grasshoppers**

- **Developed by CABI and partners in West Africa**
- **Pilot-scale production at IITA, Benin**
- **But commercial production in South Africa**
- **Any profits go into charitable trust set up by partners**





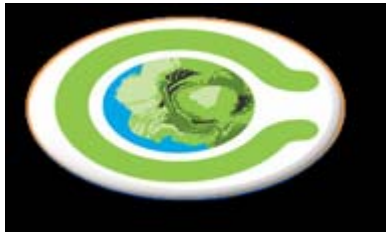
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# COLLABORATION ON INSECT MANAGEMENT FOR BRASSICAS IN ASIA AND AFRICA (CIMBAA)

- Brassica crops expressing two Bt toxin genes patented by private sector
- More effective and slower resistance
- Not marketed because of public opinion and costs of registration
- Could provide sustainable solution to improving food security and raising incomes in many developing countries





# CIMBAA

**A collaborative initiative between development-oriented, science-based, public partners and an international vegetable seed company to develop a sustainable solution to management of caterpillar pests in cabbage and cauliflower in India and beyond.**



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# **CIMBAA Partners**

**AVRDC, the World Vegetable Center**  
(Taiwan)

**CESAR, University of Melbourne**  
(Australia)

**Cornell University**  
(USA)

**Natural Resources Institute**  
(UK)

**Nunhems BV**  
(The Netherlands)

# Private Partner



- **Currently holds IPR to use of Bt genes**
- **Works with public partners to adapt technology for local varieties**
- **Provides breeding and production facilities in India and many other countries**



# Public Partners



- **Guide and assist private company in responsible development and testing**
- **After registration, take ownership of the material and make it widely available to breeders and growers in the developing countries**
- **Public sector donors participate in the costs of public sector inputs and passage through the best regulatory structures.**



## Public Sector:

- **access to technology, potentially providing sustainable increases in food security and incomes for poor people**
- **ensure testing and registration carried out rigorously and comprehensively**
- **ensure products made available**

## Private Sector:

- **funding for testing and registration of new product**
- **credibility enhanced by association with public sector**



# CONCLUSIONS?

- **Both sides must benefit**
- **Contribution by both sides must be transparent and justified**
- **Risks must be shared**
- **Both sides must respect and understand each other's objectives, timescales and modes of working**
- **Private sector in developing countries needs training, support, capacity building, particularly in science and technology**

