



IPM CRSP and the Global Spread of IPM

IPM CRSP progress

“A silent revolution is going on at Gaidghat village. Farmers are now growing pesticide-free vegetables by utilizing IPM CRSP technologies. Farmers are producing eggplant and tomato by using the grafting technique” (Quote from the Bengali newspaper, JANAKANTHA, April 24, 2003). The days when Bangladeshi farmers make their morning visits to their fields and see their precious eggplants wilting in the sun are numbered. A technique called “grafting” is revolutionizing the business of producing eggplants. Grafting technology is being used to control the devastating soil borne disease of eggplant known as “bacterial wilt”. Other such “silent revolutions” are going on at IPM CRSP sites throughout the world.



The *Integrated Pest Management Collaborative Research Support Program* (IPM CRSP) (<http://www.ag.vt.edu/ipmcrsp/index.asp>) is a United States Agency for International Development (USAID)-supported research, education/training, and information exchange program. The program, initiated in 1993, focuses on developing countries, with an emphasis on horticultural crops. At all IPM CRSP selected sites, there is significant pest pressure, inducing heavy pesticide use in high value export crops which results in economic, health and environmental costs.

IPM CRSP technology development and transfer activities involve collaboration among scientists of participating host countries, U.S. institutions,

and international centers. Goals of the IPM CRSP program are to: (1) develop improved technologies and institutional changes that reduce crop losses and damage to national ecosystems, (2) increase farmer income, (3) reduce pesticide use on domestic and on export products, (4) increase trade, (5) improve IPM research and education capabilities in developing countries, and (6) increase the involvement of women in IPM decision-making and program design.

Primary Global Sites, Crops and Impact

West Africa Site in Mali: Green beans, hibiscus, and tomato in peri-urban agriculture, millet and sorghum. Technology for the export of green beans is being developed through collaboration with the Peace Corps and World Vision Volunteers; 6800 farmers in eastern Mali have learned about IPM technologies.



East Africa Site in Uganda: Coffee, cowpea, groundnut, potato, tomato, maize and sorghum. IPM technologies have been adopted by thousands of maize, groundnut, cowpea and sorghum farmers.



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South America Site in Ecuador: Plantain along the coast, potato in the highlands, and Andean fruits such as naranjilla and tree tomato at mid altitudes. Potato farmers have been trained in Farmers Field Schools and IPM technology is now being disseminated to plantain, and Andean fruit growers.



Central America Site in Guatemala and Honduras:



Vegetables (snow peas, hot peppers, tomato, broccoli) and fruits (guava and papaya). Vegetable farmers who have adopted IPM CRSP pest management strategies for non-traditional agricultural export (NTAE) crops report positive effects on economic and social well-being, and report perceived sustainability of production.

Caribbean Site in Jamaica: NTAEs: sweet potato, hot pepper and vegetable amaranth. In Jamaica, small landholder farmers growing sweet potatoes and hot peppers for the domestic and export market have adopted IPM CRSP technologies.



Southeast Asia Site in the Philippines: Eggplant and onions in the onion-rice cropping system. Thousands of farmers have been trained in IPM strategies through public



outreach efforts and though intensive collaboration with the National Onion Growers Cooperative Marketing Association, NOGROCOMA, whose members produce most of the onions grown in the Philippines.

South Asia Site in Bangladesh: Eggplant, cabbage, okra, tomato, pumpkins, gourds, cucumbers, other cucurbits and cauliflower. Thousands of farmers have been reached with vegetable IPM technology. In 2002, two thousand farmers, extension personnel, and Bangladesh government officials participated in an IPM field day.

Eastern Europe Site in Albania: Olive. Management strategies involve early harvest dates that avoid the third generation of the fruit fly but still allow the production of extra virgin olive oil. Organic olive production methods are being developed.



Eastern Africa Site in Eritrea: Sorghum, chili pepper and other vegetables. Non-pesticidal tactics such as resistant varieties and cultural controls are being developed to manage insects and diseases and the devastating parasitic weed, *Striga*.



Participatory Approach

Central to IPM CRSP methodology is the use of a participatory approach. As part of that approach, activities at each new site are initiated with a participatory appraisal (PA) of local and regional needs as defined by farmers and other stakeholders. The agenda for research, training, and information exchange activities is developed based in part on results from the PA. Local scientists, farmers,

and representatives from non-governmental organizations in IPM CRSP host countries subsequently collaborate with US pest management specialists to implement these interdisciplinary activities.

Strengthening Linkages Between Universities and NARS

The IPM CRSP, with its strong theme of collaboration, has been instrumental in strengthening linkages and enhancing collaboration between host country universities and national agricultural research services (NARS). In Uganda, for example, the IPM CRSP has encouraged a strong collaboration between Makerere University (MU) and the National Agricultural Research Organization (NARO).

The IPM CRSP has made a dramatic difference in Albania where agricultural scientists with two NARS institutions, the Plant Protection Institute and the Fruit Tree Research Institute, had no



collaboration and were in fact rivals with those at the Agricultural University of Tirana. However, since IPM CRSP activities began there in 1998, scientists from these three institutions have come together to conduct a variety of successful, collaborative activities on olive IPM.

Strengthening Interaction between Public and Private Sector Agencies

In the Caribbean, the IPM CRSP acted as a catalyst to bring together a large number of public and private sector institutions into a collaborative network. The Jamaican Agricultural Exporters (JAE), Jamaican Organic Agricultural Movement (JOAM) and AgroGrace are private agencies which are collaborating with the following public agencies: CARDI, the Ministry of Agriculture of the Government of Jamaica, the University of the West Indies, the Rural Agricultural Development Authority, USDA/APHIS, and the IPM CRSP. The degree of collaboration between these agencies was unheard of prior to the stimulus by the IPM CRSP. A high degree of collaboration between

public and private sector agencies has been sustained for almost a decade now at the Guatemala site. The private exporting association, AGEXPRONT, and several NGOs are working with the Ministry of Agriculture of the Government of Guatemala, USDA/APHIS, USDA/FAS, the USAID Mission in Guatemala, and the IPM CRSP. This group worked together in the late '90s to remove a U.S. ban on Guatemalan snow peas that resulted from a leafminer problem.

In the Philippines, the IPM CRSP has worked with the the onion cooperative, NOGROCOMA for about 10 years. NOGROCOMA farmers have been among the first in the Philippines to adopt IPM CRSP technologies.



Regionalization

Regionalization has occurred in Asia, Africa, Latin America, and the Caribbean. For example, vegetable IPM technology developed at the Jamaica site is being extended to countries throughout the Caribbean. In Asia, grafting of bacterial wilt-resistant rootstocks with scions of popular but susceptible varieties of eggplant and tomato, developed by AVRDC, is being implemented by the IPM CRSP in Bangladesh. After dramatically higher yields and profits were obtained, the Philippines site sent a team member to learn these grafting techniques from the Bangladeshi scientists. Both Bangladesh and the Philippines are presently regionalizing with scientists from Tamil Nadu Agricultural University in India and the Indian Agricultural Research Institute to develop a Bt eggplant to help solve a problem with fruit and shoot borer. In Central America, the IPM CRSP program on non-traditional horticultural exports has spread from Guatemala to Honduras.

Institution Building

The IPM CRSP has been heavily involved in building sustainable IPM institutions in the host countries. Seventy-six scientists from Albania, Bangladesh, Philippines, Guatemala, Honduras, Ecuador, Jamaica, Mali, Uganda, India and the United States have received advanced degree training over the past 10 years, and strengthened the EQL to the level that it is now effective in monitoring pesticide residues on green bean exports to Europe. In most of the IPM CRSP sites, IPM programs have been institutionalized into the on-going activities of the national agricultural research systems.



A Silent Revolution

Yes, Bangladeshi farmers now make their morning visits to their fields with anticipation as they expect to see their eggplants thriving in the morning sun, rather than wilting due to disease. Grafting technology is truly revolutionizing the business of producing eggplants. Similar “silent revolutions” are occurring at IPM CRSP sites globally.

Because of the low cost of the IPM technologies,

increased production of crops on IPM farms translates into increased income for the IPM adopters. Mr. Ayub Bangladeshi farmer and chairman of Agricultural Technology Implementation Center in Gaidghat village of Jessore said in a number of interviews with the press media: *“the IPM CRSP technologies are highly effective and profitable for our farmers. Our farmers now know how to produce pesticide-free vegetables”* (Reported in the national Bengali daily, THE ITTEFAQ, July 4, 2002).



In addition to the impact of IPM CRSP technology development in host countries, IPM CRSP activities have spillover effects on the United States by (1) producing safer, higher quality vegetable imports for U.S. consumers (reduced pesticide residues), (2) creating markets for U.S. goods, (3) developing IPM strategies that are also applicable to U.S. pest problems, and (4) helping internationalize U.S. universities.



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