EXECUTIVE SUMMARY

BACKGROUND

Integrated Pest and Vector Management (IPVM) builds upon the successful experience in Integrated Pest Management (IPM), which is based on the practical, field-based education of groups of rice farmers in weekly sessions of the Farmer Field Schools (FFS). Farmers learn the skills of observation-based crop management to grow better crops in healthier environments and reduce dependence on the use of insecticides. The wetland rice environment, while providing food and fodder, also supports breeding of the vectors of human diseases. The IPVM project in Sri Lanka, which started in 2002 with support from FAO and UNEP, has been unique in connecting vector management with agricultural activities thereby actively involving farming communities in observation-based decision-making on vector management. An evaluation mission was organized by WHO's South-East Asia Regional Office on the effectiveness, sustainability and replicability of the project to assist in the implementation of WHO's new strategy on Integrated Vector Management (IVM).

RATIONALE AND MISSION OBJECTIVES

Malaria and other vector-borne diseases like lymphatic filariasis, leishmaniasis, Japanese encephalitis and dengue are a major health problem in the South East Asia Region (WHO, 2004a). Moreover, the 2004 *tsunami* has increased several risk factors for a number of vector-borne diseases in coastal areas due to new vector breeding opportunities, worsened sanitary and housing conditions, breakdown of health services, movements of non-immune people and weakened nutritional status of the displaced population. In the wake of increased drug resistance and insecticide resistance in the vectors, there is a need for establishing integrated vector management strategies which are less reliant on chemical methods of disease control, and involve other sectors and local communities in ecosystem management to reduce health risks.

The Integrated Pest and Vector Management (IPVM) project in Sri Lanka has for the first time integrated vector management with farmer education in agriculture, thus involving rural communities in reducing the health risks of vector-borne disease. The new approach could potentially benefit other areas in the region, including those affected by the *tsunami*. Prior to preparation for a workshop related to integrated vector management and integrated pest management in the South East Asia region, in October 2006, an assessment is needed of the unique IPVM project in Sri Lanka.

Hence, the main objectives of the mission were:

1. To determine the effectiveness, sustainability and replicability of the IPVM approach in Sri Lanka
2. To explore prospects for replication in the country itself and in India

GENERAL FINDINGS

The mission team observed that the project is basically on the right track. Visits to IPVM Farmer Field School activities (see locations in Figure 1) and discussions with IPVM-FFS alumni demonstrated that farmers can identify and monitor larval and adult populations of the major mosquito genera. Farmers are able to analyze their agricultural and peri-domestic environments and make sound decisions on the management of not only vectors in a sustained manner, but also pests and crops. IPVM-FFS alumni reported a sharp drop in insecticide use attributable to the training. Vector management activities are being practiced after FFS training, including small-scale local rearing of fish, clearing of coconut shells and containers, covering water containers at regular time intervals, and group action on household and village sanitation and preventive measures such as bed net use. Initial research findings generated during the project suggest that the role of farmers in vector management is most crucial in the short, rainy season when clustered ecosystem management was associated with lower anopheline mosquito densities, which can potentially break the transmission cycle. This effect was not observed in the long rainy season. The role of agricultural use of insecticides on mosquito dynamics needs further study. IPVM lead to increased use of mosquito bed nets. The team developed frameworks for monitoring of project performance and evaluation of project impacts. Recurrent costs of the IPVM-FFS are approximately $10 per graduated farmer.

CURRICULUM

The reduction of health risks in irrigated agriculture can be made more explicit in the FFS curriculum. Health risks are not limited to vector-borne disease but include harmful effects of pesticide use in agriculture on occupational poisoning and food safety. The mission recommended inclusion of exercises on self-monitoring of signs and symptoms of acute pesticide poisoning into the IPVM-FFS curriculum. The mission also recommended broadening of the FFS activities to include field walks for other crops grown by rice farmers using pesticides, to address pesticide-related health risks in a more comprehensive way.

CONVERGENCE

The mission found that convergence between activities by the health and agriculture sectors have come a long way, producing effective cross-sector learning and a joint process of curriculum development. However, there is a need to further enhance convergence. In particular, the roles and activities of the two sectors could become better integrated. This can be achieved by district-level workshops for all local stakeholders and by better synchronization of mosquito surveys by the Anti-Malaria Campaign (AMC) with weekly IPVM-FFS activities to allow for interaction with farmers resulting in mutual benefits.

VECTOR CONTROL

The AMC has so far been playing a supplementary role by supporting a predominantly agriculture-driven project. The main challenge for AMC is to internalize IPVM into its own vector-borne disease control strategy. In fact, AMC has started to adopt IPVM as prevention strategy in low transmission areas, and there is prospect to extent this strategy to intermediate transmission areas because of the demonstrated synergistic effect between IPVM and bed net use. Moreover, the current surveillance system of the AMC, aiming to detect early warning signals of disease outbreaks to initiate action, is constrained by limited human and financial resources.

Surveillance could benefit from involving communities and developing local capability on monitoring and evaluation as part of an IPVM strategy. This would provide better coverage and intervals of data collection, allowing the AMC to target their interventions (FFS or bed net) more accurately and more timely. Community-based surveillance would also enhance local project ownership and preventive actions taken by local people.

NEXT STEPS

There was a strong overall consensus among the directors of AMC and Environmental & Occupational Health (EOH), Ministry of Health of Sri Lanka, WHO and FAO about the value of IPVM which involves local people in reducing and evaluating health risks related to vector-borne diseases and chemical pesticides. However, the sensitization of policy makers, particularly in the health sector, is a priority. WHO-SEARO will support the production of a short video film to publicize IPVM. The Director EOH, who joined the mission team's field visits, will introduce IPVM at a national session of the Health Development Committee Meeting to announce a seminar on IPVM. WHO-Sri Lanka agreed to organize and sponsor the seminar, which will bring together major players from the Health Ministry and other partners to discuss the value of IPVM and identify common objectives and possible synergistic effects. In parallel, the mission findings and the video will serve as inputs to the regional IVM workshop, planned for October 2006, probably in Pondicherry, India, to discuss the prospects of replication of IPVM in other countries and as part of the health emergency response in and after natural disasters.

MISSION MEMBERS

The mission members included experts in integrated vector management and/or integrated pest management with extensive experience in the South Asian region.

International experts:

1. Dr Henk van den Berg, Consultant on Integrated Pest Management and Integrated Vector Management, Wageningen, the Netherlands
2. Dr P.K. Das, Director, Vector Control Research Centre, Pondicherry, India
3. Mr Alexander von Hildebrand, Regional Advisor on Environmental Health. WHO South-East Asia Regional Office, New Delhi, India
4. Dr V. Ragunathan, Plant Protection Advisor to the Government of India, and IPM Consultant for FAO

National Experts:

1. Mr Nalin Munasinghe , Programme Associate, FAO Representative's Office. 202, Bauddhaloka Mawatha, Colombo-07, Sri Lanka
2. Mr K. Piyasena, Deputy Director Plant Protection, Plant Protection and Seed Certification, Department of Agriculture, Peradeniya, Sri Lanka
3. Mr Hector Senerath, National Consultant, IPVM Project. FAO, 51/2, Thotagamuwa, Palapathwela, Matale, Sri Lanka
4. Dr C.K. Shanmugarajah, Director. Environmental Occupational Health and Food Safety, Ministry of Health and Nutrition, Colombo, Sri Lanka