Award Category: Regional IPM Program
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Supporting Document: SUBMITTED
Vita:
Improving economic benefits related to IPM adoption: Checked
Reducing potential human health risks: Checked
Minimizing adverse environmental effects: Checked

Brief Summary of Nominee's or Program's Accomplishments (500 words or less):
Starting in 2004, farmers in Ghor el Safi in Jordan have been learning about IPM in tomato, with support of FAO's Regional IPM Programme in the Near East. Ghor el Safi is a small region in Jordan, south of the Dead Sea with particular environmental conditions: high temperatures in summer and limited water availability. Farming is a major occupation, with open field tomato a major crop. Farmers have limited access to information and advisory services in the area. Overuse of pesticides in tomato is common. Although IPM approaches in Jordan are not new, farmers still tend to overuse pesticides. A major reason is the lack of knowledge at farmer level to understand agro-ecosystems, how elements interact and what field management decisions to take.
Farmers in Ghor el Safi started to join Farmer Field School groups that provided an opportunity to test and adapt IPM approaches in the local setting, and compare IPM to the local way of growing tomato. The Ministry of Agriculture (MOA) assisted by FAO experts trained facilitators in IPM and FFS approaches to work with the farmer groups. In 2011 the majority of farmers in Ghor el Safi have been trained in IPM. Weekly meetings and hands-on field based learning help farmers to better understand all elements of the agro-ecosystem, the interactions between the elements and the effect of different management options. Trained farmers have reduced the use of pesticides consistently, while yields are slightly higher leading to improved benefits. The reduction of the use of pesticides reduces the environmental pollution and reduces risk for health of producers and consumers.
The MoA carried out impact studies to assess the technical results of the programme. In addition to the technical results farmers are now taking a leadership role in facilitation FFS for other farmers in the area, promoting IPM for other crops, and organizing themselves to better market their IPM produce.
The government of Jordan has institutionalized the IPM/FFS approaches through the creation of a participatory extension unit in the National Center of Agricultural Research and Extension (NCARE) and including this kind of training in its programme. The programme is working with a range of stakeholders from government to NGOs and farmer organizations in raising awareness on the importance of IPM.

Describe the goals of the program being nominated; why was the program conducted? What condition does this activity address? (250 words or less):
IPM approaches in Jordan are not new, and have been promoted for a few decades now. However, at farm level overuse of pesticides is still common. A main reason for this is the lack of farmers' knowledge on IPM and ecology that underpins informed decision-making. Ghor el Safi is a small region in Jordan,

south of the Dead Sea with particular environmental conditions: high temperatures in summer and limited water availability. Farming is a major occupation, with open field tomato a major crop. Farmers have limited access to information and advisory services in the area. Overuse of pesticides in tomato is common. The Jordan Ministry of Agriculture (MOA) and The National Agricultural Research and Extension (NCARE), with support of FAO's regional IPM programme for the Near East, selected Ghor el Safi as one of the target areas to promote IPM by educating farmers and their community to better understand and manage their agro-ecosystems. This would lead to reduced use of pesticides, lower environmental contamination and less health risks for producers and consumers.

Describe the level of integration across pests, systems and/or disciplines that was involved. (250 words or less):

The programme used a holistic IPM approach, building on an agro-ecosystem approach. To educate farmers in IPM the programme organized farmers in groups to implement Farmer Field Schools that use hands-on learning throughout a cropping season. Non-formal adult education approaches are used in the FFSs. Farmer groups set up studies to compare local practices with IPM. They are trained to make detailed observations using Agro-Ecosystem Analysis (AESA), looking at all elements in the agro-ecosystem (plants, pests, natural enemies, diseases, weeds, weather and soil conditions). They analyze and discuss the situation using this information and come to a decision. A trained facilitator assists in guiding the process to come to sound technical decisions. This process allows integrating all elements of the system to be discussed and examined to come to IPM decisions. Some examples of measures include using resistant cultivars especially on tomato to avoid the infection of tomato yellow curl leaf virus, using hot spot treatments to control different pest like mites, aphids and leaf miners. For more accurate observations traps are used, like yellow and blue sticky traps for mentoring and trapping the white fly and thrips, and pheromone traps for mentoring and mass trapping of Tuta absoluta insect. Also fertilizer use is examined and in many cases reduced to promote healthy crop as a basis for IPM.

Describe the team building process; how did the program being nominated get partners involved? Education and awareness are essential in an IPM program. (250 words or less):

The most important partners in the Ghor el Safi IPM programme are the farmers (both male and female) and their communities. The programme worked with them to better understand the situation, and to raise their interest in participating in Farmer Field Schools to learn about IPM.

The programme developed a national network in Jordan for a FFS/IPM facilitation team to work with farmers, training them on the IPM approach and the participatory FFS methodology. These facilitators are selected from the government extension service, NGOs, the farmer union, local communities and private sector. In Ghor el Safi only on extension agent was available for the whole area, who was trained in IPM. After the first season of educating farmers in IPM, the most outstanding farmers were selected to become facilitators for others in the area. The programme provided additional training for them. For Jordan, more than 85% of the government extension agents were trained. In addition, over 115 farmers were trained to become facilitators to do farmer to farmer extension in Safi area.

At the same time the programme made efforts to promoting Public Awareness of IPM through developing, publishing and distributing manuals, guidelines, and posters. Also media like newspapers and TV were used. A campaign was organized involving university and schools students, school teachers, environmental NGOs such as: Jordan Environment Society and Friends of the Environment Society in addition to interested volunteers. This helps consumers to know more about the importance of IPM and products that respect food safety standards.

What outcome describes the greatest success of the program?:
Farmers that have been trained are able to implement IPM, leading to reduces use of pesticides, similar or slightly higher yield levels, lower costs and higher benefits. The FFS approach enhances collaboration at community level, leading to other initiatives like efforts to improve marketing.
The National Center of Agricultural Research and Extension (NCARE) and MOA realized the value and potential of IPM and FFS approaches, and started the institutionalization of IPM/FFS into the National System of the Extension Service of the MOA of Jordan. The included IPM and FFSs in the MOA national strategy as they preferred approach for the management of crops and their pests. NCARE created a Participatory Extension Unit (PEU) to promote and expand the IPM/FFS approaches to new locations and new target crops to enhance acceptance of the IPM methodology over all Jordan.

Provide evidence of change in knowledge, behavior or condition as a result of the program/individual. (250 words or less):
A series of impact studies was done by NCARE, of the Ministry of Agriculture to assess impacts of IPM/FFS activities in Jordan. The latest study interviewed 220 trained and 200 untrained farmers to assess and compare practices between them. Farmers adopted monitoring of pest and natural enemies and diagnosis of the field situation, insect traps for monitoring, double door system, grafted tomato, record keeping, proper water management, alternative pest control methods to chemical pesticides, etc. The participants decreased the number of sprays from 8 to 3/season on tomato open field in the Ghor el Safi area, from 14 to 4 sprays on green houses tomato and from 13 to 5 sprays on cucumber in Jordan Valley. Understanding of hazards of chemicals pesticides for human health as well the environment improved, with farmers being better aware of the importance of preservation of the environment and natural resources. This reduced costs of production from 750 US$ to 125 US$/hectare in case of chemical pesticides and from 920 US$ to 250 US$/hectare in case of chemical fertilizers.
In addition, farmers in Ghor el Safi have grown more confident and have better interactions with the extension department and other organizations in the region. They act as facilitators on IPM in their community. They established an association to ensure the use of IPM methods in their farms. They get a premium price of around 25% for their product to be exported and around 6% for the products to be sold in the local markets.

Who or what should receive the most credit for the success of this program? (250 words or less):
The farmers and their communities should receive most credit for the success of this programme, as well as the facilitators who work with them. They are the key actors to learn on IPM, to adapt it to the local situation and to promote the use of IPM. Last but not least, the Management Unit of the FAO Regional IPM Programme in the Near East who supported and believed on the success of the Project providing technical and strategic assistance to farmers, staff of the Ministry, NGOs and decision makers during the entire life span of the Project.

If selected, suggested Citation for Award Certificate (40 words or less):
Strengthening farmers' knowledge on IPM and enhancing ownership and community coherence encouraged farmers in Ghor el Safi to change farming practices.