

Farmers embrace ICTs for Pest Management



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One of the major problems farmers complain about during a cropping season is control and management of pests and diseases that damage the crops. Conventionally, many farmers believe that the only solution is to spray chemical pesticides. However, these chemicals are expensive and are known to have effects on humans, water resources and the environment.

In 2005, a one year innovative pilot project dubbed *From web to field to web*, was initiated by Pesticide Action Network Germany (PAN Germany). The project involved use of information accessed using Information and Communication Technologies (ICTs) to control and manage pests and diseases using non-chemical alternative methods, in Kyuso district, Kenya .

The idea was implemented by fostering partnerships that involved international agencies, regional networks, government departments, local NGOs, Community Based Organisations (CBOs) and farmer groups.

The starting point

In 2004, PAN Germany developed and launched an online information service for non-chemical pest control in the tropics, OISAT Info (www.oisat.org) targeting trainers, extension workers and farmers. OISAT Info offers practical information on preventive and curative methods and how to minimise pest damage in a safer, affordable, effective and ecologically sound way. The main aim is to increase food production at household



Mr. Matei, a farmer and a resource centre assistant from Kyuso Mwingi, explains to participants at the ICT expo how to access OISAT information

level while reducing the use of synthetic chemical pesticides that are hazardous to human, water resources and the environment.

To ensure the web information reaches communities, PAN Germany organized an international workshop for agricultural organizations, networks and institutions from Africa and Asia. The workshop was held in Kenya in 2004. At the end of the workshop, the idea of initiating a pilot programme with farmers was mooted. Kyuso farmers were chosen for the pilot because of the strongly established Farmer Field Schools (FFS) network by the Ministry of Agriculture. In addition, the farmers lack adequate extension staff, an information referral point and farmers' general information on production systems. They are also ill-equipped with crop protection information yet they are quite innovative and use Indigenous and Traditional Knowledge (ITK).

Availing appropriate agricultural information to communities

The Arid Lands Information Network (ALIN) partnered with PAN-Germany, PELUM Kenya, the Ministry of Agriculture Mwingi District and Kyuso farming community to pilot and prepare large-scale dissemination of OISAT Info among smallholder farmers, agricultural training and extension networks. Through the pilot project, a Farmers Resource Centre now called "Kyuso Maarifa centre" (Maarifa is a Swahili word meaning Knowledge) was established and equipped with ICT tools. Seven pilot farmers were chosen from existing FFS in different locations within Kyuso to apply OISAT info and validate it. This approach was quite successful as over 800 farmers have been reached with OISAT info through organized meetings, farmer to farmer extension and workshops.

Powered by solar energy, OISAT info and other information resources from the Internet at the Maarifa centre are accessible to farmers. The OISAT info has been used widely on pigeon peas, maize, green grams, cowpeas and mango seedlings. The

Kyuso is a semi arid region and communities rely on agricultural production for their livelihood.

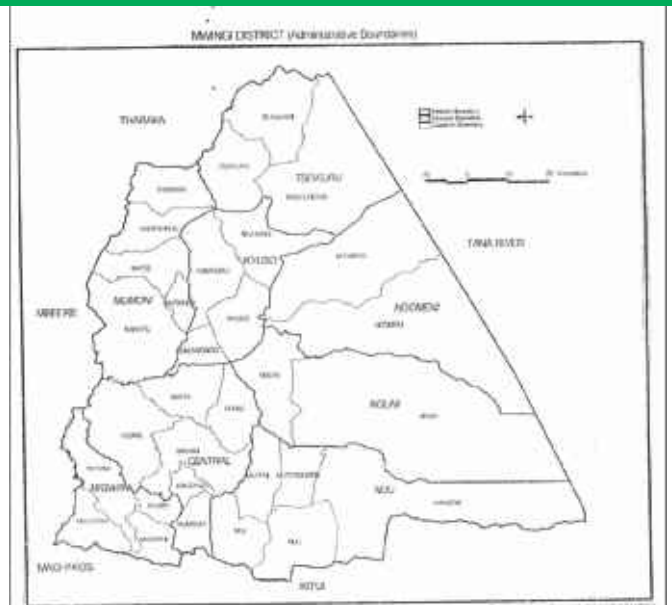
common pests are apion beetles, aphids, white flies, white grub, stalk borers and termites. The plants commonly used in pest management and are locally available are neem, chilies, finger euphorbia, pawpaw, custard apple and onions. Wood ash and chili is also commonly used for controlling stalk borers.

Other key activities included identification of seven pilot farmers who applied the OISAT info for one complete cropping season and also were involved in the validation process. A criterion was set for identifying the farmers who would then spread the OISAT info to other peers. The criteria included a practicing small scale farmer that is innovative, able and willing to train other farmers and mostly women farmers were preferred. Out of the seven selected farmers, five were women.

Capacity building workshops to empower farmers and extension staffs on pests' identification, use of ICTs, experimentation and validation were held. The workshops involved more farmers who were interested and extension staff from NGOs and government departments. The workshops offered a platform for direct sharing of knowledge by farmers with extension staff. In addition, farmers' knowledge and experience sharing forums were organized and these were quite enriching to the participants. Other activities included awareness creation through open days and use of media. The Kyuso farmers experience documented can be



LOOK! These aphids are deadly on cowpeas, Mrs Maureen, a farmer says.



viewed at http://www.alin.net/downloads/oisat_pullout.pdf.

Mrs. Maureen Mueni's field validation and experiences

Maureen's farm is situated at Kimangao village about 15kms from Kyuso town. She is a member of the FFS network where she has acquired a lot of farming skills that include seed selection and poultry, among others. The farmer set aside an 'OISAT plot' measuring 75m by 75m and planted maize and cowpeas, among other crops. The cowpeas were attacked mildly by apion beetles in their flowering stage. Though she admitted to have made a mistake in the use of OISAT info by mixing neem and chilli formulation instead of using each individually, they worked. The apion beetle reduced slowly after application of the solution.

Another pest controlled was the stalk borer in maize. Maureen used sieved ash and put it in the affected crops' funnels. After a few days she noted that the pest had been eliminated.

Given that this was her first time to make the pest formulations, she found the methods somehow cumbersome as the availability of materials limits its use. Maureen got the neem leaves and the chilies from a neighbour. She reckons that the methods used are cheaper and easy to make since local resources are used.

Great Impact

The impact of the project was felt at various levels ranging from staff involved to farmers' local community and institutions. Some of these include:

- Improved farmers and extension staff capacities especially on using ICTs, pest management

using non chemical means, documentation of local knowledge and networking opportunities.

- The Maarifa centre is equipped with appropriate equipment that includes solar energy, ICT tools and Internet access making staff's work easier especially in generating and sharing reports.
- The community at large including students have access to a rich and practical database of crop pests' management information.
- Increased collaboration and confidence in implementation of joint projects among international agencies, NGOs, government and communities.
- Farmers spend less money to produce healthy food since they no longer buy chemical pesticides that are expensive.
- OISAT Information is environmentally friendly hence farmers have reported sustained Bees swarms and increased honey yields.
- The Kyuso community formed a focal group committee that is in charge of the Maarifa centre hence addressing the issue of sustainability by initiating income generating activities.

Replication and why this innovation was a success

The project has been outscaled and continues to address the challenges small-scale farmers face in achieving increased food production in a sustainable manner while conserving the natural resource base. All the Maarifa centres that are working with ALIN have OISAT Info. In addition, a regional consultative workshop was organized by PELUM Kenya and held in Moshi - Tanzania in October 2009. The workshop sought to share experiences and lessons of the pilot phase as well as explore the methodology suitable to introduce the sharing of OISAT info in six countries namely Uganda, Tanzania, Rwanda, Zambia and Zimbabwe through coordination in Kenya. The initiative will be further discussed from country action plans in 2010.

Many reasons can be attributed to the success of this project as follows:

- Awareness creation among project stakeholders and their involvement right from the project inception, experimentation validation, experience sharing and documentation was important.
- Management of crop pests by farmers was well planned for right from the planting time especially through use of preventive measures.

Farmers need to understand the common pests and the crop stage when they attack and apply curative means immediately.

- OISAT info is practical, easy to use and cheap. The information can be applied by farmers to effectively control pests that attack their crops in the field. This in turn reduces use of hazardous pesticides hence producing healthy food.
- Use of appropriate ICTs can avail critical information to communities who need it to improve their livelihoods. The Kyuso Maarifa centre is highly acknowledged and valued by local communities who, through the center, acquire information on various development issues.
- The use of a language that is culturally appropriate was critical in the successful implementation of the project. Use of a locally trained farmer in IT skills was advantageous in that communities are able to get translated information from one of their own.
- Choosing farmers who play other roles in society enables information flow and speedy diffusion in villages through farmer-to-farmer extension.
- Incorporation of OISAT information into schools offers an opportunity for young farmers to learn pest management at an early age. This knowledge can be transferred To their parents at home.

