

Banning SHPFs in Latin-America

The Rotterdam Convention Secretariat, through FAO Country Representatives and Designated National Authorities (DNAs), organized, conducted and completed the “Implementation of the Rotterdam Convention” project MTF/GLO/145/UEP, in Nicaragua, El Salvador and the Dominican Republic, with completion of the project in Colombia in July, 2014.

The objective of this project was to protect human health and prevent environmental risks associated with the misuse of pesticides, giving priority to developing countries and countries with economies in transition.

The project emphasized the empowerment of national institutions to monitor and collect information on Severely Hazardous Pesticide Formulations (SHPFs); report incidents

associated with SHPFs and submit proposals for possible inclusion of these substances in Annex III. In addition, a key element of the project was to search for less toxic alternatives to those substances already listed in this Annex.

Important results were achieved, thanks to the establishment of Farmer Field Schools (FFS), capacity-building efforts, investigation of acute pesticide poisoning cases (APP), development and distribution of educational material and review of pesticides registration systems, among others.

The project generated positive impacts and helped to establish more responsible and safe pesticide handling. The most relevant results obtained in each country are below.





Photo1. Custom agents inspect tanks of pesticide storage. Corinto Port, Nicaragua, 2013.

Nicaragua

In Nicaragua, the project was developed with a focus on two areas of work: “Capacity-building for the monitoring and review of health incidents caused by Severely Hazardous Pesticide Formulations (SHPFs)” and “Alternatives to chemicals included in Annex III”.

Significant results are highlighted in the first area of work. A total of 59 workshops were delivered on various topics associated with pesticides management, through which 1136 participants were trained.

The importance of this result lies primarily in the comprehensive training received by diverse staff members and in turn the creation of multidisciplinary and inter-agency teams. On the National Plan of Action, the design and subsequent distribution of educational material was considered important. In total, the program produced 650 Compendiums that summarize and explain the Law 274 (Basic Law for the Regulation and Control of pesticides, toxic and hazardous substances and similar); 200 manuals on how to treat patients who have been

poisoned by pesticides; 300 manuals that summarize Law 217 (General Law on the Environment and Natural Resources, its reform to the Law 647 and Rotterdam Convention) and 9 posters on the Rotterdam Convention.

Another important aspect of the project was updating the Government Information System (GIS) with 794 records on pesticide data and 3724 cases of acute pesticide poisoning (APP) corresponding to the epidemiological period from 2010 through 2013.

Cases of APP reported through primary health care units were evaluated by the Ministry of Health. Specifically data collected about cases caused by Furadan, Diazinon and Chlorpyrifos could be used by the DNAs to submit proposals as SHPFs.

The Farmer Field Schools also played an important role during the project. A total of 261 facilitators trained 816 small coffee growers in 34 FFS on the topic of Integrated Pest Management (IPM) with a specific focus on coffee farming.

In addition to training and capacity-building, the project also sought other alternatives to highly toxic pesticides, some of which are commonly used in the agricultural areas of the country despite being listed in Annex III of the Convention. Such is the case of Endosulfan, an organochlorine applied on coffee crops to control infestation by the coffee berry borer (*Hypothenemus hampei*).

Demonstration plots in different coffee farms were established to show how less toxic products can control the coffee berry borer as Endosulfan does it. Two green label products (Rimon 10 EC and Voliam Flexi 300 SC) and a well-known biological controller (*Beauveria bassiana*) were used.

The results showed that Rimon 10 EC controlled 79.04% of the adult insect

population at a concentration of 400ml/mz; whereas Voliam Flexi 300 SC controlled 78.8% at a concentration of 600 ml/mz. Finally, *Beauveria bassiana* controlled 55.62% at a concentration of 400gr/mz.

In these same demonstration plots, where application of Endosulfan was suspended more than 8 years ago, results of a soil analysis study demonstrated the continued existence of Sulphate, Alpha and Beta Endosulfan in the first layers of soil (0-40 cm) and in different concentrations. These results simply corroborate the already well-known low degradation capacity of organochlorines.

An important step in the sustainability of this project has been the reactivation of the Re-evaluator Technical Committee (RTC). The actions taken by this Committee allowed seven highly toxic pesticides, which are still used in Nicaragua, to be reassessed, including Endosulfan, Aldicarb, Methomyl, Carbofuran, Terbufos, Chlorpyrifos and Paraquat.

For the first five pesticides, the importing, exporting, distribution, use and sale were prohibited. In the case of Chlorpyrifos, its use continues to be allowed exclusively in authorized plant protection campaigns by the Ministry of Agriculture and Forestry. Meanwhile, Paraquat can continue to be used to control weeds only for corn and bean plots.

Finally, thanks to the support shown by the

different National Customs Departments, nearly 68 inspections took place at different farms, customs warehouses and agrochemical stores. Several irregularities were found. In each case, respective laws were applied, while at the same time, training was offered for those involved.

The implementation of this project not only showed relevant results to the country with regard to their two main areas of work, but it also facilitated coordination between the participating institutions and the creation of commitments for the continuity and institutionalization of some of the activities carried out through the National Plan of Action.



Photo 2. A group of agricultural technicians receive their diplomas as FFS facilitators. Matagalpa, Nicaragua, 2013.



Photo 3. Coffee farmers attend practical training in a FFS. El Salvador, 2014.

El Salvador

The implementation of the project in El Salvador has generated positive impacts by changing the approaches taken by different agencies that are responsible for handling issues related to pesticides in this Central American country. El Salvador successfully completed its National Plan of Action in May 31, 2014.

The Plan enabled a total of 789 people (284 women and 505 men) to receive training including doctors, farmers,

extension agents, customs personnel, agrochemicals salesmen and others. The program worked to establish 16 Farmer Field Schools based in Integrated Pest Management in coffee; up to 400 small coffee growers were trained. The knowledge gained in these FFS empowered small coffee growers to make their own decisions about reducing the use of Endosulfan to control the coffee berry borer and it helped them to improve the sustainability of their crops. The work in these schools has been done and

coordinated through the Ministry of Agriculture (MAG) Coffee Program and the Agricultural National Technological Center (CENTA), with an approach to replace highly toxic pesticides with less toxic alternatives. In these FFS, small coffee growers participated in experiential learning activities that helped them understand important IPM practices such as, controlling the coffee berry borer through trapping and biological control, that include coffee

pruning, registration of blooms, weed control and others. A total of 41 agricultural technicians of MAG-CENTA were trained on: "First aid in cases of pesticide poisoning, Regulations in the safe handling of toxic substances and filling out forms of pesticides intoxications to propose pesticides as possible SHPFs".

Through the project, the MAG Laboratory of Pesticides Analysis and the Department of Pesticide Registry and Control were equipped with essential tools for handling toxic substances, such as: personal protection equipment (masks, filters, cartridges for acid fumes, gloves, coveralls, etc.), application pumps and other necessary tools.

In addition, a total of 10,000 posters were developed to highlight important topics that include: Effective Pesticides Management; Preventive Measures to Avoid Acute Pesticide Poisoning; Use of Protective Clothing and Equipment for Pesticide Applicators; Measures to be Considered in the Sale of Pesticides; First Aid Measures for Cases of Pesticide Poisoning; Good Agricultural Practices (GAP) for Controlling the Coffee Berry Borer; among others.

All posters were distributed to different hospitals, health units, agricultural cooperatives, schools, agrochemical stores and the agro-services nationwide network.

Finally, a manual is currently being developed that informs of the requirements and interpretation of data for the registration of pesticides used in agriculture. This manual intends to improve the processes for the registration of these substances in El Salvador.

The project promoted a shared responsibility and cooperative efforts among Parties to protect human health and the environment from potential harm of the use and abuse of pesticides.



Photo 4. Medical doctors attending a Toxicology Workshop. San Salvador, El Salvador, 2014.



Photo 5. Interviewing a farmer intoxicated by Carbofuran in 2013. Valle del Cauca, Colombia, 2014.

Colombia

Colombia has been working on the implementation of the project thanks to the support and commitment shown by the Ministry for Social Protection and the Colombia Institute of Agriculture (ICA), which are the Designated National Authorities in the country. They focused the National Work Plan in two specific sectors: a national survey on acute poisoning caused by Carbofuran and

training staff from different public and private institutions associated with pesticides management.

The survey, focused on acute pesticide poisoning caused by Furadan (Carbofuran), was applied in 10 departments in the country (Meta, Valle del Cauca, Tolima, Norte de Santander, Antioquia, Quindío, Huila, Caldas, Risaralda and Cundinamarca).

Information on cases of APP provided by the National System of Public Health Surveillance (SIVIGILA), together with the information requested in “part B” of the Form to present SHPFs, were combined to develop the formats used in the surveys.

APP data used in the survey were announced in advance by the SIVIGILA

and corresponded to the epidemiological period from January 1, 2013 through November 2, 2013.

Preliminary results of the survey showed a total of 106 validated cases of occupational poisoning caused by products containing Carbofuran. Data collected are still being analyzed and the final result will be presented during the second half of 2014.

These results will make it possible to submit a proposal to the Secretariat of the Rotterdam Convention for Carbofuran Formulations with the objective to include them in Annex III of the Convention, under Article 6.

Capacity-building was another important aspect of the project. From September 2013 until May 2014, a total of 40 meetings were held with different national and regional health entities encompassing, the Ministry for Sustainable Development and the Environment, the Colombia Institute of Agriculture, the National Authority for Environmental Licenses, and others. In these meetings, key elements were shown regarding the Rotterdam Convention and the importance of the project in Colombia. More than 250 people participated in these meetings, including professionals and technicians that were involved in the management and handling of chemical pesticides.



Photo 6. Interviewing a farmer intoxicated by Carbofuran in 2013. Daveiba, Colombia, 2014.

Photo 7. Farmers and pesticide applicators attend practical workshop on Proper Use of Pesticides. Dominican Republic, 2013.



Dominican Republic

The Program for Monitoring and Reporting Health Incidents Related to Severely Hazardous Pesticide Formulations (SHPFs) in the Dominican Republic has focused on three main components: Epidemiological Surveillance of Acute Pesticide Poisoning (APP) and a Survey on APP and SHPFs.

A Capacity Building Program was also a key aspect that covered all the links in the chain of pesticides management.

The Survey was designed to provide a picture with reliable and updated information about pesticides used in the country, especially about SHPFs, in order to serve as a baseline based on the facts and to set up activities to improve the actual panorama. It covered six provinces, which were Duarte, La Vega, Monsenor Nouel, Valverde, Azua and San Juan de la Maguana. Survey respondents included farmers dedicated to different crops

(sorghum, corn, cassava, yams, pigeon peas, passion fruit, soy, cocoa, among others), health professionals (doctors, nurses) and pesticides distributors and retailers. A group of seven different active ingredients associated with APP incidents were identified in the survey; these were Methomyl, Carbofuran, Profenofos, Edifenphos, Monocrotophos, Dicrotophos and Cypermethrin.

Cases of occupational poisoning that were both caused by any of these substances and that caused patients to remain hospitalized for more than 8 days were most profoundly researched. Four such cases were identified, caused by Hinosan (Edifenphos), Orixin 48 (Iprobenfos), Monocrotophos and Paraquat, respectively.

DNAs can submit proposals as SHPFs for any of these active ingredients, except for Monocrotophos and Methamidophos because they are already part of Annex III and they were banned in the Dominican Republic by Resolution 61-2011 passed by the Ministry of Agriculture on December 08, 2011.

Proper handling and use of pesticides, Pesticide poisoning, Good Agricultural Practices, Clinical Handling and Epidemiological Surveillance of Pesticide Poisoning, Pesticides Prohibited and Restricted in the Country, among others, were some of the main topics for the capacity building component. Approximately 940 people were trained, including farmers, pesticide applicators, regents, employees of agrochemical stores, health staff, inspectors, customs agents and other personnel of institutions and organizations associated with pesticides.

The Epidemiological Surveillance component achieved the establishment of a

National Epidemiological Surveillance System focused on APP. It encompassed the design of a Protocol to monitor this type of poisoning and a Guide for the Diagnosis and Treatment of Acute Pesticide Poisoning.

This Clinical Guide for the management of pesticide poisoning was developed through collaboration between different scientific societies in the country and was based on the general recommendations given by the World Health Organization (WHO) and international experts in the field. This important document establishes guidelines for the clinical management of acute pesticide poisoning in order to contribute to the prevention of secondary cases and reduce the risk of death from this cause.

This monitoring program achieved its aim to alert national environmental and health authorities of the risks of irrational use of pesticides, in particular to human health and to the environment. The urgent need to seek mitigation measures for these risks has also been emphasized to different governmental and private institutions that are responsible for the handling of chemical substances in the country.



Photo 8. Data collection on pesticide use next to a rice field. Dominican Republic, 2013.