

Implementation of the Rotterdam Convention in Nicaragua, Dominican Republic, Colombia and El Salvador

Nicaragua

In the case of Nicaragua, The Ministry of Health, The Ministry of Agriculture and Forestry (MAG), The Ministry of Environment and Natural Resources (MARENA) are the Designated National Authorities (DNA), who is leading the project in this country.

The focus of activities has been the pursuit of alternatives to Severely Hazardous Pesticide Formulations (SHPF), which are still in use in the country, giving priority to endosulfán. This pesticide is still widely used in Nicaragua to control the coffee berry borer (*Hypothenemus hampei*), even when it is known that this is a highly toxic organochlorine pesticide, which causes environmental pollution and can cause harm to humans and wildlife.

Some of the results of the project are:

Integrated Pest Management Farmers Field Schools in coffee:

A total of 33 FFS were set up in the coffee regions of Matagalpa, Jinotega, Nueva Segovia and Managua; in these FFS a total of 800 farmers who work in coffee were given training. The FFS emphasizes on Integrated Pest Management as alternative to the use of endosulfan on coffee; the knowledge and experience gained from these activities enabled participants to make their own specific decisions about local coffee management practices.



Fig. 1. Workshop for facilitators of FFS, IV Region Nicaragua. July, 2013.

Tested Chemical and Biological Products as alternatives to endosulfán.

A total of 5 demonstration plots were set up in Matagalpa and Jinotega, regions, where around 80% of the nation's coffee is produced and where there is a high use of agrochemicals. The central objective of these demonstrative plots was to attempt to determine the effectiveness of different chemical and biological products as alternatives to the use of endosulfán on coffee. These plots are located on recognized coffee farms whose owners believe in produce coffee with less agrochemical.

Preliminary results show positive effects, especially with the use of *Beuvaria bassiana*; which is an entomopathogenic fungus that can parasitize coffee berry borer. For now, the data collection is still running and final results will be available by early April.



Fig.2. Presentation of the Rotterdam Convention and the Environmental Impacts of Agrochemicals. Ecological Battalion of the Nicaraguan Army. June 13, 2013.

Reactivation of the Pesticide Technical Evaluation Committee

Similar to the role of the Chemical Review Committee of the Rotterdam Convention, the main purpose of this Committee in Nicaragua is to review agrochemical formulations according to the criteria of the Nicaraguan environmental law and also according to Annex III of the Convention.

Thanks to the activities lead by it, Nicaragua has reached important agreements to regulate the use of agrochemical, such as: the immediate ban on Endosulfan imports into the country, the ban of Aldicarb, the restriction of Terbufos registration: just for its use as a nematicide in Musa crops, etc.

Stakeholders Training

This has also been emphasized through the training given to the human resources of agrochemical companies, agrochemical sellers and other people

who work directly with these types of substances. Most training topics were focused on the safe handling of pesticides and environmental laws such as



Fig.3. Banner about the Rotterdam Convention presented by the Ministry of Agriculture and Forestry. November 23, 2013.

the Law 274; which is a Basic Law for the Regulation and Control of Pesticides, Toxic, Hazardous and Other Related Substances, it plays a crucial role in Nicaragua, however, despite its existence there are several gaps in the subject and for many reasons, it may not be fulfilled in full.

Recompilation and Distribution of Information

The generation of information about pesticides is necessary to raise the awareness for stakeholders and the general public; it plays a crucial role in further work on the objectives of the Convention and thus ensures its sustainability in the future.

Thanks to the project, a recompilation of documents related to environmental issues has been done and these have been reproduced in pocket format to be more accessible to public.

Compilation of Poisoning Cases

Through the project the strengthening of the Management System of Information (SGI) has been achieved and a total of 436 records of importers, distributors, regents of pesticides had been introduced; in this way the updating of information of Acute Pesticide Poisoning (APP) is being achieved: the database shows around 2,407 cases between 2009-2013.

Surveillance of Agrochemical stores

Extensive inspections have been carried out on different types of local agrochemical stores in the country; around 181 stores that sell agrochemical have been checked. Similar actions were carried out in 68 stores located in different customs clearance areas in the country, with emphasis on those who have in their records imports of pesticides. It's important to mention that these inspections not only sought to identify and stop the irregularities, but also train those responsible for the business to provide better management in the future.

Dominican Republic



Fig. 4. Pesticides mixtures for pest control in rice. Dominican Republic. June, 2013.

For a period over six months, this country was running the Health Monitoring and Reporting Program for exposure to Severely Hazardous Pesticide Formulations (SHPF). It is focus on 3 specific components, for each of them several activities were developed.

The first step was to provide a national and state-level data on the use of agrochemical and it showed a first look at the possible poisoning cases caused by the use of pesticides.

This survey was done in 8 different geographical sites as follow: San Francisco de Macoris, Constanza, Jarabacoa, Bonao, Mao, Valverde, San Juan de la Maguana and Azua; these areas are well known for the high agricultural production, but also for the high use of pesticides. For the survey medical personal, farmers and agrochemical sellers were interviewed.

First results identified a list of 8 different commercial products: Lannate (Methomyl), Curacrom (Profenophos), Carbodam (Carbofuran), Furadam (Carbofuran), 50 Hinosan (Edifenphos), Asodrin (Monocrotophos) Cypermethrin and Dicrotophos. Each of these products will be subject to further study to research accidental poisoning caused for these substances.

On the other hand, results showed that most farmers have an idea about the risk of agrochemical exposures, however for different reasons; personal protective equipment is not being used properly, thus increasing the possibility of poisoning. It is important to mention, that there is little care

taken about the final disposal of agrochemical waste, usually most of them are burned, buried or thrown in the farms, rivers or left at houses, which creates an issue, because of the risk of contaminating water, soil, biodiversity and could cause poisoning to humans; complete results from this will be ready in April, 2014.



Fig.5. Red band pesticides, are sprayed on rice, with little or no protective equipment. Sabaneta, La Vega, Dominican Republic. June, 2013.

Stakeholders Training

As happened in the other 3 countries, the training played an important role, a total of 718 people were trained: producers, applicators, agronomist, regents, agrochemical employees, inspectors and customs agents, doctors, nurses, epidemiologists, staff health extension agents, provincial directors and staff of institutions and related organizations.

During the project other initiatives that are essential for the country have also implemented such as: the development and implementation of different systems and surveillance

protocols (the development of the Protocol of Epidemiological Surveillance and Rapid Response to Acute Poisoning Caused by Pesticides and the Guide Clinical Management of pesticide Poisoning and others).

The products acquired during the implementation of the Rotterdam Convention in Dominican Republic are opening the door for the country to continue working on this issue and thus continue meeting its objectives in terms of protection of human health and environmental focused on a shared responsibility.

Colombia



Fig.6. Socialization of the Rotterdam Convention with different government agencies, Bogotá, Colombia, January, 2014.

Colombia is a country with high agricultural activity, well known for the large scale production of coffee, a crop recognized worldwide for its quality. However, this is accompanied by the massive use of highly toxic pesticides that exist in this country which filter through the production lines of the structured subsidiaries of famous agrochemical companies.

Fortunately, unlike other countries in the region, Colombia has an effective monitoring system related to human health, known as the National System of Public Health Surveillance (SIVIGILA). Each year, a large number of poisoning cases are reported through this system, which was developed for the systematic provision for accidents that occur on population health.

Based on data provided by the SIVIGILA, activities concerning the implementation of the Rotterdam Convention are being focused on the research cases of unintentional poisoning by carbofuran; the data obtained will be used to submit a proposal of Severely Hazardous Pesticide Formulations (SHPF) for the Annex III of the Rotterdam Convention.

Similarly, emphasis has been given to the training and socialization workshops that focused on how proposals for SHPF should be performed and how notification of pesticide poisoning incidents should be presented.

Participants of these workshops include: officials from different Colombian authorities (Ministries of Health, Environment, National Environmental Licensing Authority, National Institute of Health, and Colombian Agricultural Institute, among others) were able to learn from the experiences of other

countries and experts about the information that was evaluated by the CRC (Chemical Review Committee).

It is planned that the continuation of the socialization workshops from the Rotterdam Convention and the Monitoring and Reporting of Severely Hazardous Pesticide Formulations (SHPF) will take place in several municipalities of the country such as: Meta, Quindio, Tolima, Huila, Cundinamarca and the North part of Santander.

El Salvador



Fig.7. Pruning of coffee trees, cultural practice conducted in the Farmer Field School, in where the emphasis is on IPM as an alternative to endosulfan. Cuscatlan, Central, Cordillera Chinchontepec, El Salvador January 31, 2014.

The use of agrochemicals in El Salvador has been a crucial issue especially in recent months, among other things due to the presentation of a Legislative Decree, through which amendments are requested within the Laws on Control of Pesticides, Fertilizers and products for agricultural use, it focused on the ban of 53 agrochemicals: decree passed by the Legislature on September 2013.

In this topic, the high use of pesticides has been labeled by many people as the "main cause" of the increase in the number of people (farmers) who have suffered from kidney failure, but has not yet submitted a formal study with

scientific bases that can verify these facts.

Under this scenario, the implementation of the Rotterdam Convention comes at an appropriate time, providing technical support for activities whose primary purpose is to strengthen institutional capacities.

Among the main activities proposed in this project is the creation of 8 FFS (Farmer Field Schools) on coffee. The main topics to be discussed will be focused on validated and proven alternatives to Endosulfan, a product widely used in coffee to control the coffee berry borer.

The project includes important activities, especially in terms of training for technical staff of the various ministries and institutions related to coffee; priority has been given to equipping pesticide laboratories of the Ministry of Agriculture correctly, through the delivery of protective equipment.

A high emphasis is placed on the dissemination of information about issues of safe handling of pesticides in different agro-businesses and services stores, through the production and publication of 4600 posters about prevention, first aid for acute pesticide poisonings, proper and safe storage of agrochemicals and others.

Implementation activities will be completed on April, 2014; more positive products are expected and they will improve the current situation and will lay down the groundwork to bring sustainability to the project in this country.



Fig.8. Toxicology National Workshop to Strength Institutional Capacities for the implementation of the Rotterdam Convention. San Salvador, January 20, 2014