



a toxics-free future

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## International SAICM Implementation Project (ISIP)

In 2010, in an effort to demonstrate SAICM implementation via IPEN Participating Organizations, IPEN launched an International SAICM Implementation Project, also known as ISIP. ISIP aims to mobilize resources for initial enabling activities pertaining to national priorities, in keeping with the work areas set out in the strategic objectives of section IV of the SAICM Overarching Policy Strategy.

In particular, the ISIP supports the Governance objective of SAICM's Overarching Policy Strategy paragraph 26, which calls for enhanced "cooperation on the sound management of chemicals between Governments, the private sector and civil society at the national, regional and global levels."

In addition, ISIP builds on the 2008-2009 Global SAICM Outreach Campaign to raise awareness about SAICM and strengthen collaboration among the public interest, health and labor sectors.

### ISIP Objectives

ISIP's four objectives include:

- Promoting the need for sound chemicals management
- Advancing National SAICM Implementation
- Promoting global SAICM implementation by global civil society
- Building capacity among NGOs developing countries and countries with economies in transition

**Title of activity:** Agronomic test implementation project aimed at the promotion of bio-pesticides based on *Trichoderma harzianum* in the East and North of Burkina Faso.

**NGO:** Association pour la Recherche et la Formation en Agro-écologie (ARFA)

**Country:** Burkina Faso

**Date:** April, 2013

### Elements of SAICM Covered:

Promote substitution for highly toxic pesticides including effective non-chemical alternatives (27); Provide training in alternative and ecological agricultural practices, including non-chemical alternatives (51); Encourage industry to extend product stewardship and to voluntarily withdraw highly toxic pesticides which are hazardous and cannot be used safely under prevalent conditions (30); Promote integrated pest and integrated vector management (29); Establish programmes for monitoring chemicals and pesticides to assess exposure (66)

### Description of:

**The highly hazardous pesticide(s) registered/sold and/or in use in your country:**

In Burkina Faso, varieties of pesticide are used. Unfortunately many of them are not labeled. It is almost impossible to know the level of toxicity of these products without testing. However concerning labeled pesticides, the organochlorinates group (Rocky 500 EC, Caiman 350 EC being their commercial name), organophosphates (UltracideEc) and carbamates (DIAFURAN 5G, Furadan 5G) form the groups of highly dangerous pesticides. These highly hazardous pesticides are used in the fight against insects.

**Alternatives and/or bio pesticides available, if any:**

ARFA and its partners propose, train and follow up producers to use the following biopesticides as alternatives to highly polluting chemical pesticides:

- Neem leaves used for the fight against caterpillars and beetle's larvae, minor flies, crickets and beetles;
- Powder from the grains of neem used in the fight against cruciferous pests, cabbage borer, cabbage beetle, stinking locust, defoliating caterpillars locusts, jassid, cotton worms, etc;
- Neem oil used in the fight against beans weevils, cantharis, thrips, dust mites, aleurode, tomato outlet moths, harmful white flies, greenflies, niébé's weevils, cantharis, defoliant caterpillars, locusts, etc.;
- PiOL: extracted from pepper, garlic and onions used in the fight against greenflies, niébé's weevils, cantharis and defoliant caterpillars.
- Trichoderma mushroom and its extracts used in the fight against fungi infections

**Health and environmental effects of the pesticides:**

Many farmers using chemical pesticides don't protect themselves when using these dangerous products. Furthermore, the containers of pesticides are most often used as toys by children and also served as drinking water containers in some localities. Besides this, the time allowed before harvest are not respected. All of these put together constitute a serious threat to the health of the population.

As a matter of fact, the result of a study by ARFA on the use of pesticides indicates that 83% of producers examined feel dizziness and 92% have headaches after crops treatments with endosulfan (active ingredient of a chlorinated organic). Others (21% cases) have nausea and vomiting, 21% have blurred vision (confused sight), 54% have trembling hands, 8% have staggering, 8% have hyper excessive salivation, and 13% have excessive sweating. These disorders are felt either during crops treatment, or immediately after, or some few days later. Some of these disorders manifest themselves some weeks or months later. These disorders observed during or after crops treatment clearly reveal that they are caused by the pesticides used, especially endosulfan. Other more serious health effects associated with the accumulation of these products in human organs can occur. These include: the disruption of the body hormonal system which can lead to an increase of the number of deformities at birth, sexual disorders, infertility, and breast cancers.

On the environment, the use of chemical pesticides has brought about a heavy reduction of honey bees. We have sometimes observed the death of fish, and of some ruminants that have eaten herbs on farms where these pesticides had been used. Nowadays, there is a high pollution of water table.

**Information on pesticide levels in the environment, in food, or in people:**

Presently in Burkina, no studies have been carried out on the level of pesticides that is found in the environment, food or individuals. However there are high risks of having high concentrations

of pesticide residues in tomatoes, water melons and cabbages produced because of the following reasons:

- Non respect of dose;
- Failure to respect spraying term;
- Failure to respect the number of recommended treatments;
- Use of non-recommended products on the crops treated. Most of the products used for treatment are pesticides intended to be used for the treatment of cotton plants.

### **Existing pesticide legislation in your country:**

In order to conform to international requirements on issues related to pesticides regulations, Burkina Faso has put in place a certain number of texts to control their use in agriculture. This concerns the following laws, decrees and ordinances:

- Law N°041/96/ADP of November 08 1996 instituting pesticides control in Burkina Faso.
- Law N°006-98/AN of 26 March 1998 relative to the modification of the law N°041/96/ADP of 08 November 1996 instituting pesticides control in Burkina Faso.
- Decree N°98-481/PRES/PM/MCIA/AGRI of 09 December 1998 fixing the condition of license delivery for importation, sale, put in sale, holding, free distribution or services on pesticides.
- Decree N°98-472/PRES/PM/AGRI of 20 December 1998 on attribution, composition and bylaws of the National Commission for Pesticides Control (CNCP).
- Ordinance N°99-0041/MA/MEF of 13 October 1999 on fixed tax tariffs regarding the control of pesticides.
- Ordinance N°99-0045/MA/MEF of 03 November 1999 appointing members and alternates to the National Commission for Pesticides Control.

To regulate the trading of pesticides in Burkina Faso, the following measures were put in place:

- Decree N°94-014/PRES/PM/MICM/MFPL of 06 January 1994 instituting a national certificate of conformity of products to be used in Burkina Faso.
- Ordinance N°93-005/MICM/MFPL of 18 January 1993 on the characteristics of pesticide aerosols.
- Ordinance N°15/ADP/ of 05 Mai 1994 organizing competition in Burkina Faso.
- Ordinance N°2000-025/MCIA/MEF of 17 May 2000 fixing the list of products subject to the national certificate of conformity.
- Notice N°97-014/MCIA/SG/DGC of 09 October 1997 to pesticides importers regarding the pesticides information system.
- Notice N°98-011/MCIA/SG/DGC of 17 July 1998 to pesticides importers on obligations to provide antidotes and protection materials for pesticides of Class 1.
- Notice N°02-012/MCPEA/SG of 02 August 2002 to pesticides importers on CNCP control and license.

### **Use of IPM and ecological agriculture:**

The use of integrated pests management (IPM) is not a common practice in Burkina. Recent actions towards this are on the way. Concerning ecological farming, it has been promoted for more than fifteen years by structures like ARFA, AVAPAS and CEAS. Nevertheless, agro-ecological practices are not yet well integrated by all the producers. In order to stimulate agro-ecological practices, ARFA, through the national council of ecological farming that it heads, undertakes advocacy at the national level, works towards the creation of specifications of ecological farming in Burkina Faso, and works towards the creation of a local market for ecological/biological farming products.

### **Conditions of work:**

To carry out the activities of this project, the technical team of ARFA benefited from acceptable working conditions. As a matter of fact, the financial support helped to carry out the research

activities/ actions in farming areas (experimental farm), as well as consciousness- raising and training activities. However, the high level of illiteracy of the populations is a handicap to the awaited results and compels the technical team to increase their efforts in order to convey the messages.

Regarding working conditions of farmers, they vary depending on the level of education and the financial capacity of farms. Indeed the most affluent farms are fairly well equipped with farm equipment. This is not the case of small farms that are financially disadvantaged. These use equipment that sometimes comes down to cans with small holes or brooms. Moreover, it is important to note that virtually all producers do not use protective clothing for pesticide treatments. Many do not follow safety precautions, exposing their own health but also that of their families (sometimes when a parent applies treatments, there are kids right next to him having fun. Worse yet, pesticide containers are reused as drinking water bottles.). Finally, the high level of illiteracy and the fact that many farmers do not know the exact application rates contribute to improper use of chemical treatments. Therefore, the conditions in which the vegetables are grown, from a microbiological and chemical point of view, generally make them unfit for human consumption. For example, surveys have shown that many growers use toxic products incorrectly, or pesticides regardless of their persistence or their specificity, and the doses applied are often higher than recommended (Schilter 1991; Kanda, 2003; Bassole et al, 2007; TOE et al, 2000 and 2002). Also, residues of organochlorine pesticides found in some vegetables and edible seeds sometimes exceed the allowable limits (Djaneye-Boundjou et al. 2000).

### **Project Outcomes:**

#### **Description of the activity conducted to reduce the threat posed by highly hazardous pesticides and advance this SAICM aim.**

Activities carried out within the context of this project are:

- Conducting field demonstrations on the effectiveness of the fungus Trichoderma;
- Information on the FAO International code of conduct concerning the distribution and use of pesticides;
- Training on phytopathologic detection of crops and on the use of bio-pesticides;
- The drawing up of technical forms related to the use of bio-pesticides.

#### **Impact on target groups:**

The target groups were engaged or involved during demonstrations on experimental farms to show the effectiveness of bio-stimulants. As a matter of fact, these demonstration tests were carried out in the appropriate environment in farms belonging to the target groups. These farms were visited and comments were made. Debates and talks were organized on the problems of crops protection. The results of the activity on the target groups are:

- Better understanding of the impact of pesticides on health and land (on the environment as a whole).
- Better understanding of the impacts and ways of action of natural and biological crops protection products.
- More willingness to use treatment products from biological sources after seeing the impacts on parcels of land used for demonstration.

#### **Impact on target policies:**

Since 2005, the Burkina Faso state adopted an implementation plan of the Stockholm Convention on Persistent Organic Pollutants (POPs). Therefore, the reduction of the use of highly polluting chemical pesticides is an integral part of the implementation plan of this Convention. There is however a gap between the texts in force and practices that take place.

Furthermore, some companies and state services are using GMO to reduce the use of polluting chemical products.

This micro-project led by ARFA is in line with national policy and has provided positive impacts on the results of the national policy at a micro level (at the level of the producers). This has contributed to the reduction of the use of chemical pesticides, especially products that are part of the family of highly hazardous pesticides (organochlorines, organophosphates and carbamates).

### **Outreach to stakeholders:**

The stakeholders that were engaged in this activity are: farmers, market gardeners, the national institute of agricultural research (INERA), and NGOs promoting agriculture. Yes, there is a potential for the follow-up in order to advance the relationship with these stakeholders. As a matter of fact, thanks to the support of PAEPARD (Plateforme Afrique-Europe Pour la Recherche Agricole et le Développement) some of these stakeholders (INERA, two associations of producers and two companies) and ARFA have created a syndicate that aims to promote agro-ecological practices.

### **Deliverables, outputs and/or products:**

The following products were derived from the activities:

- Ecological insecticides extracted from pepper, garlic, onion;
- Technical forms on the use of Trichoderma, neem-based bio-stimulants and bio-pesticides and those extracted from neem, a mixture of pepper, garlic and onion extract;
- A handbook on characterization, on the presentation of the main harmful insects to agriculture in Burkina Faso and on the presentation on ecological and natural ways to fight against these insects;
- A handbook on characterization on the presentation of various fungicidal diseases affecting the main market garden crops in Burkina Faso and on the presentation of ecological and natural ways to fight against these diseases;
- A handbook on the presentation of various pesticides sold in the local market with indications on pests and diseases fought against as well as the level of toxicity of each type of pesticide;
- A report on how activities were carried out on field schools will be released as soon as all the harvests have been done on all the speculations

Photo 1: Training on phytopathologic detection of onion cultivation

Photo 2: Guided tour on a demonstration site on the effectiveness of bio-stimulants on onion cultivation

Photo 3: Information on the FAO's International Code of Conduct for the Distribution and the Use of Pesticides

Photo 4 : Training on the manufacturing of ecological insecticide extracted from garlic, pepper and onion

Photos 5 and 6: Information meeting on the FAO International Code of Conduct on the Distribution and Use of Pesticides and on the characterization and the presentation of main insects that are harmful to agriculture in Burkina Faso as well as the ecological and natural ways to fight against these insects.

### **Communication Efforts:**

Communication actions concerned guided tours of experimental farms, debates and information exchanges between agricultural technicians and producers, workshop restitution of test results.

**SAICM National Focal Point:**

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