

# REPORT

## Participative Monitoring on Environment Impact of Pesticide January-July 2006

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### A. Preface

Based on the law no. 23 issued in 1997 on Environment Management and Act no. 27 issued in 1999 on Environment Impact Analysis, every commercial activity must undertake the sustainability of environment function and prevent or overcomes the contamination and mutilation of environment. This also in line with Law no. 12 issued in 1992 on Crop Engineering System, act no. 6 issued in 1995 on Plant Protection declares that the protection of crops are undertake by utilize the instruments and the method which considering health treats and or treating the human safety, generating disturbances and damaging the natural resources and or environment.

The impacts of pesticide of the human health and environment inter alia caused by the technical utilization that was not considering the standard guidelines. The infraction of the pesticide use are include; utilizing the forbidden pesticide that inappropriate, expired pesticide, limited usage (risk to human health and environment), unmatched with the standard/requirement, and the usage of pesticide that were not base on working safety.

Based on the result of monitoring by Gita Pertiwi in Indonesia (with sample that taken from three location; Central Java, North Sumatra, and East Nusa Tenggara), since December 2005 to April 2006, had found several information as will be mentioned below.

1. All pesticide stores that had been surveyed, all were selling the pesticides with other product (fertilizer, seed, and tools of agriculture, woof/fodder, and food) without any seals.

2. All pesticide stores were selling the pesticide (solid or powder) in small package without a clear label, for example furadan, temix, applaud, etc.
3. There're eight (8) kinds of pesticide that had already been expired, which are Rizotin (Jan 20, 2004), Confidor 350 WS (Nov 11, 2005), Corsair 100 EC, Lindomin (Nov 3, 2005), Metafuron 20 WP (Nov 3, 2005), Roundup 486 AS (Nov 3, 2005), Sidabas 50 EC (Nov 3, 2005), Regent 50 EC (May 8, 2005), and one kind of pesticide that unregistered which is Temix.
4. There also a free trade and big promotion of limited pesticide (Noxone, Gramaxone, and Supracide) by using placard that patched in trees and big banners.

Based on that situation, Gita Pertiwi as an environment institution that been concern to undertake monitoring of spreading pesticide, facilitating learning process to communities to be more alert and critic on pesticide.

### **B. Objectives**

1. Increase the awareness of the peasant's communities to the impact of pesticide on environment.
2. Undertake participative monitoring on the impact of pesticide to the environment.

### **C. Time and Venue**

These programs were undertaken in January-July 2006. The schedule was delayed one month caused by some situations, like;

1. Earthquake in Central Java and Yogyakarta. The earthquake increased the solidarity among peasant so some peasants were become the volunteer for the disasters.
2. Harvest season and other cultural activities. During that time, the harvest season was delayed 15 days from the usual. In other side, June was believed by the Javanese to have cultural activities like to have married their son/daughter etc.

Monitoring on the environment impact of the pesticide was undertake in three district in Central Java, which were in Baturetno (Wonogiri), Tawangmangu

(Karanganyar), and Dieng (Wonosobo). The reasons to choose those three places are;

1. District of Wonogiri is one of the places that Gita Pertiwi was practicing the environment friendly agriculture model in 1993. It's assumed that in Wonogiri, the existing environment was being better compared than two other places.
2. District of Karanganyar is a highland, the main commodities are vegetables (carrot and cabbage), and knowingly as the place that high-use of pesticide. In fact, in 1995, the main commodity of Tawangmangu, which is garlic (Bawang Putih) cannot be planted because attacked by **busuk umbi** disease that couldn't be anticipate with any pesticide.
3. District Wonosobo also known as agriculture based highland and knowingly as the central of potatoes farming in Central Java that intensively using pesticide. During the rainy seasons, pesticide was use more intensive with almost in everyday. In the dry season, pesticide was use only once in two-day. To accelerate the, some peasant used the diesel pump.

From the monitoring from Commission of Pesticide of Central Java administrator, in Karanganyar and Wonosobo was frequently found the illegal pesticide.

The training process to the peasant was undertaken in Agriculture Faculty of Sebelas Maret University of Surakarta.

#### **D. Process and Result of the Activities**

##### *1. Formulating the Design of Activities*

The first activities were formulating a common perception among the team-work. Team work were composed from Gita Pertiwi and assisted from the consultant from Agriculture Faculty of Sebelas Maret State University. There're two strategies that designed to be applied in this project;

- a. Increasing the awareness of the peasant on the danger of pesticide by creating the module on pesticide, peasant forum, and comparative study.
- b. Field observation/monitoring on the environment impact of pesticide by creating module on monitoring of environment impact of pesticide,

training of trainee, collecting the field data, laboratories analysis, disseminating the result of the research (seminar and printing the modules).

2. *Increasing the awareness of the peasant to the environment impact on pesticide.* Steps to gain that objective were;

a. Formulating modules on the danger impact of pesticide. Eventhough there're government policy; Go Organic 2010; but in reality the circulation of pesticide always increased year to year. From the monitoring of BPTPH Pesticide Commission of Central Java (Provincial Administrator) in 2004, the circulation of pesticide in Central Java was increased 47.97 percent in just a year. The increasing of the circulation of pesticide was assumed because there's not enough comprehensive information on pesticide, particularly on the hazard that can be caused by pesticide. Module on the Danger of pesticide were compiled by; History and the Politic of Pesticide, The Policies of Pesticide (National and International), Classification and Label of Pesticide and Impact of Pesticide (social, economy, gender, health, and environment).

b. Module testing and socialization in three districts by using the farmer's forum. This activity was undertaken as the first activities to give the basic information on pesticide to the peasant. This program were participated by 125 farmers in held in Wonogiri (April 8), Karanganyar (April 20), and Wonosobo (April 26). A side of it, in the forum the peasant were signed their agreement to participate in the research and monitoring on the environment impact of pesticide. The criteria that had been formulated were;

- Farmer, due men or women
- Representative of the group
- Able to read and write
- Willing to participate on the training and undertake the field research
- Willing to distribute the result of the research among the group and communities.

After this program, the participants conduct some socialization activities in the group level so the understanding among member on pesticide could be more accurate.

- c. Comparative Studies. This program was undertaken by two people that are one from peasants and other from the staff of GP. The comparative study was held in February 24-March 1, 2006 in Perbuni (Palm Oil) in Serdang Bedagi, North Sumatra. The conclusion of the comparative study was the urgent or the need for pesticide advocacy program conduct by the strong and independent peasant organization. Other information that been gained from the comparative studies are the hazardous impact of pesticide to human health. This was proved from the impact of pesticide to the farm workers (particularly women) that paralyzed in eyes, nails, and itchiness in skin.

### 3. *Monitoring the environment impact of pesticide.*

This monitoring are need to be done to give the evidence to the peasant on the hazardous the environment impact of pesticide, even there're some pesticide that had 'green label' (environment friendly). By conducting direct observation the awareness of the peasant were assumed can be increased that in long term the pesticide will disturb the balance in ecosystem.

Steps that been done in monitoring on the environment impact of pesticide were;

- a) Formulating a monitoring module on the environment impact of pesticide.

The module were composed by;

- The Policy and Classification of Pesticide
- Identification of the environment impact of pesticide
- Survey Method on the environment impact of pesticide
- Collection and Observation on Organism
- Organism Identification

- b) Conducting the training to the peasant

- Training on observation of the environment impact of pesticide were participated by 12 farmers (two women). The participants were come from three districts that also representatives from three

groups/communities. The training was conducted in Agriculture Faculty of Sebelas Maret State University.

- Materials that have been presented in the training were also the materials from the monitoring module on the environmental impact of pesticides, with direct observation of the species that exist in soil (ground), air, and water.
- The training methodology was based on the principle of adult learning due to in-class or outbound training (theory and practice).

### c) Field Data Collecting

- First phase of field data collection was done by the research team. From this preparation, the design of field data collection was formulated. This included tools and materials that need to be used and role/work distribution, the objects that must be observed, and time-schedule of activities. This process was facilitated by GP; in District of Wonogiri by Parlan and Titik; in District of Karanganyar by Setiyawan and Wiji; and in District of Wonosobo by Titik and Parlan.
- Field research. The process of data collection on the environmental impact of pesticides (underground soil, upground soil, water, and air) were undertaken in three locations with detail; District of Wonogiri; paddy field (irrigated), dry paddy-field (non-irrigated), arable field (paddy/vegetables); Karanganyar; irrigated cistern of rain field, technical irrigated field (carrot and *loncang*); and Wonosobo; pre-planted field, arable planted land, and after-harvested land (potatoes). This research was done in May 2-20, 2006.
- The result of the observation;
  - ❖ Wonogiri; still can be found natural enemies and decomposers rather than the infectant. This was caused that since 1995 the utilization of insecticide (fastac and furadan) were decreased.
  - ❖ Wonosobo; number of infectant was larger than natural enemies and decomposer. In fact, the number of natural enemies in ripe potatoes were lesser and the number of infectant were

greater. This was caused of the intensive usage of pesticide and insecticide, once in two days.

- ❖ Karanganyar; number of infectant were larger than natural enemies/composer because the usage of pesticide (insecticide, fungicide, and herbicide) was intensive since 1990s, with the intensity once in four days for carrots.
- ❖ Since 1990s, the utilization of pesticide (kinds, doses, intensity In two districts (Wonosobo and Karanganyar) are increase because of the promotion from vendors and the increasing number of infectants.
- ❖ In Wonosobo had founded the illegal insecticide, label POLLOS, in form of powder, peasants were usually use it to eradicate *orong-orong*. Its call illegal because there's no information on the active content, legal permit, name of the corporation, and other needed information on the insecticide.

d) Laboratory Test in Soil Laboratorium of Agriculture Faculty of Sebelas Maret State University. The laboratory test takes two weeks.

- Carried out a C/N test on soil ratio with 9 samples. From the lab-test could be concluded that the decomposition process on soil in District of Karanganyar and Wonosobo was never happened. This was proved from the test that the C/N ratio was remaining still.
- In Wonogiri, the soil decomposition was still happen. This was prove from the test that more aged plant the C/N ratio was lesser.

#### 4. *Publishing and Disseminating the Environment Impact on Pesticide*

a. Seminar on the Result of The Research

- Carried out a seminar on the result of the monitoring on the environment impact of pesticide:
  - ❖ Wonogiri : Juli 3, 2006, in Setrorejo, Baturetno, participated by 60 peoples, composed by representative of the peasant communities from 5 subdistrict. PHP, PPL, village and subdistrict state apparatus. Resource person of that seminar were; Mrs Surati (peasant, researcher), Soebagyono (PHP Coordinator of

Wonogiri) moderate by Sukino (peasant). Result: peasants will be involved in infectant natural management activities and PHP will monitor the circulation of pesticide in Wonogiri cooperate with peasants because the apparatus of PHP in Wonogiri only 12 persons.

- ❖ Karanganyar: July 4, 2006, in Sekipan, Tawangmangu. Participated by 45 persons, from peasants, agriculture office, forestry office, peasant's organization (LMDH). Resource person are Mr. Pram and Mrs. Dani (Agriculture Office) and Mr. Sriyono and Mr Baryono (peasant, researcher) and moderate by Wijiyatmi (GP). Result of the seminar: the district of Karanganyar will implement the organic farming and the usage of pesticide becomes the last alternative on crop engineering.
- ❖ Wonosobo: July 11, 2006, in meeting room of Garung subdistrict, Wonosobo. Participated by 55 person. Resource person: Nasrullah (peasant, researcher), Tri Waluyo (Agriculture Office), M Jazid (Commission B Regional House of Representative of Wonosobo), and moderate by Somairi (peasant). Result of the seminar; to decrease the use of pesticide in Wonosobo was difficult because the peasants were highly depend on the pesticide and there's still no alternative to replace the pesticide. In fact, the Regional House of Representative of Wonosobo has not been informed on the present policy on circulation and use of pesticide. In other hand, PHP/agriculture office that should be undertake the monitoring of circulation and usage of pesticide couldn't do anything because the limited operational budget.

- b. Printing monitoring module on the environment impact of pesticide 500 exemplar. The module were distributed in peasant's local communities in three districts; Wonogiri, Karanganyar, and Wonosobo. By using this module, the peasant were hopely can be monitor the circulation and environment impact of pesticide by observing the species on soil, water, and air periodically. The result of the observation can be use as a basic and



input to the government policy on agriculture at the local-community level.

### **E. Constraint Faced**

1. Farmer requires alternative substitution of pesticide, because based on experience of farmer in sub-province Karanganyar and Wonosobo, changes pesticide to mean there will be degradation of result.
2. Though policy in district level has campaigned agriculture of organic/environment friendly area, but reality in field of the officers on duty agriculture has not comprehended concept and the application of his in intact.
3. There has no policy makers at the district level that comprehends the pesticide and regulations, so that there are still of opinion that its(the success agriculture conducting must be supported with pesticide usage.
4. Technical of research: there still difficult to seek or formulate the simple and applicable model of observation of pesticide impact, research of small species must be done in laboratory by using microscope and many species found has not been known.
5. Limited time of research, though to know pesticide impact to area of required [by] old relative time spread and observation done in continually (for example once in one year).

### **F. Follow Up Plan**

1. Conducting the rehabilitation to impure have been agriculture area of pesticide, by:
  - a. apply the comprehensive friendly environment of agriculture system
  - b. training to the peasant on recovering the soil fertility
  - c. introducing the external decomposer
2. Maintaining the cooperation with related parties to return soil fertility, that is: Spacious School of Climate with Agriculture Office (Wonogiri), the research of potato disease and garlic with Faculty Of Agriculture UNS SURAKARTA (in Wonosobo and Karanganyar).



Appendix



Diskusi dengan buruh di Sumatera utara

Training on Formulating  
Monitoring Module in  
Wonogiri



Training on Formulating  
Monitoring Module in  
Wonosobo

