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International POPs Elimination Project

*Fostering Active and Efficient Civil Society Participation in
Preparation for Implementation of the Stockholm Convention*

POPs pesticides in a watershed area: Focus on Endosulfan

LAKABA (Strength of the Youth)

**Philippines
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About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN <http://www.ipen.org>) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;
- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;
- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer-term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see <http://www.ipen.org>

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Executive Summary

The project was undertaken to determine the presence of POPs pesticides, particularly endosulfan, in a watershed area in Southern Philippines. It complements existing efforts to document the reported use of POPs pesticides, focusing on a putative candidate POP, endosulfan within an environmentally critical area, the watershed area at the foot of the highest mountain in the Philippines, Mt. Apo. The project also aims to help the local youth organization in their campaign to protect the watershed by improving their capacity to do community action monitoring of POPs and other pesticides and to undertake an information and education campaign related to their findings.

Consultation meetings and preliminary visits were undertaken in Davao del Sur near the vicinity of Mt. Apo to determine the watershed areas and the vulnerable communities within the area. The scoping was done by members of LAKABA, the youth organization in the area, together with CAUSE-DS. These two local organizations facilitated social preparation and community organizing.

A community monitoring team, assisted by a community organizer, was formed to plan and undertake activities related to the implementation of the project. Five target communities for community survey on pesticides use (including POPs) and about 10 reference points for possible environmental sampling were identified. Training was conducted for the community monitoring team.

Interviews with key informants from the local government units involved in health, agriculture and environment were undertaken to determine the general health and environmental profile in the target communities which were likely to have been affected by POPs and other pesticides, especially, endosulfan. Local government records were sought and copies obtained. In coordination with the local organizations, community organizing, education and training, and direct community assistance within the context of capacity building were conducted.

A household survey was done to determine the extent of use of POPs pesticides, particularly endosulfan, and to determine the likelihood of POPs pesticide contamination of soil and water in the watershed area. Laboratory analysis, however, was not accomplished due to difficulties in arrangements with laboratories capable of doing the work. The initial arrangement for a laboratory in Manila to do the analysis failed due to very high costs involved. The government laboratory in Mindanao was willing to do the analysis for a reduced fee but a change in the management in the laboratory is delaying

the accomplishment of original plans. New arrangements are being done to ensure that the next attempt for laboratory analysis will be accomplished.

After the household survey, an advocacy campaign plan to address the identified health and environmental problems was formulated. Public awareness activities were coordinated with other groups involved in environmental and health advocacy. A training of trainers on community action monitoring was conducted and a seminar and photo exhibit was undertaken.

Information, education and campaign materials were produced and distributed during the seminars and at appropriate occasions. The information regarding POPs and other pesticides were also disseminated through streamers which were hung at strategic sites within major roads to inform the general public. A television appearance on one occasion and radio interviews on several occasions were arranged to discuss POPs and other pesticides affecting the watershed communities of concern.

Focus group discussions and briefings were also conducted with other sectoral organizations, particularly women, farmers and fisherfolk. The public awareness activities sufficiently aroused other concerned organizations and individuals resulting in a broader campaign to stop the use of highly toxic and persistent pesticides, particularly endosulfan and other POPs pesticides which went beyond the initial target communities.

In Davao City, for example, a campaign to stop aerial spraying is under way which already got the support of some local government legislators who were willing to sponsor a local law banning aerial spraying of pesticides. Other government bodies and also the big agri-corporations are now under greater pressure to come-up with measures that would ensure adequate health and environmental protection, particularly, the watershed area. The number of groups requesting or including the issue of POPs and other pesticides in their seminars or discussions has increased and there is also increased media attention.

Area profile and project objectives

The general target area is the province of Davao del Sur, which is situated in the southeastern part of Mindanao, Philippines. It has a total land area of 393, 401 hectares. It comprises 14 municipalities and 1 city. Of its total land area, about 65 percent is rolling and mountain ranges running southward. It has a total population of 672, 150.

Agriculture commands the major bulk of the province economy. The total area planted with crops is 20,473.03 hectares. Rice and corn remain the major crops of the farmers but there are expanding areas planted with banana, mango, sugarcane, papaya and cassava owned by big agri-business and corporate farms. Pesticides, including POPs pesticides, have been used heavily in the province. Aerial spraying of fungicides in the banana plantations is common, exposing adjacent communities to the toxic chemicals. There have been persistent reports of human poisoning, fish kills and contamination of watershed areas. Complaints have been put forward by affected groups to the companies

involved and to the local government officials but these complaints have not been adequately addressed. While there had been some efforts done to document and publicize such poisoning incidents (which resulted in a court case filed by a banana plantation company against those who publicized the poisonings), there has not been any significant move from concerned local or national authorities to address or to determine the extent of the problem.

Specific communities in Davao del Sur included in the scoping:

Ruparan is one of the rural barangays in Digos City, Davao del Sur with a total land area of 381 hectares. Its distance from the center of the city is more or less 3 kilometers and has a total population of 3,194. The main agricultural crops are rice and corn, but in the latter part of 2000, landowners started to plant mango and sugar cane due to the increased demand for these crops. Landlessness remains the main problem of the peasants. They suffer the burden of high land rent, high cost of pesticides and fertilizer and other farm inputs while the prices of their agricultural products at harvest time remain low. Aggravating their poor living condition is the lack of support for health, education and other social services.

Goma is a rural barangay about 5 kilometers northwest of Digos City proper. It has a population of 4,553 who depend mostly on farming for their livelihood. Most of their crops are corn, vegetables, mango and sugar cane. The majority of the farmers are poor and could hardly provide their families the basic necessities. Their health condition is being threatened by the presence of an open waste dump put up by the city government which is causing pollution to adjacent areas and draining to the river which is also part of the watershed area.

Kapatagan, known as “little Baguio” of Digos City, is a mountainous barangay and a watershed area about 45 minutes away from the center of the city going north to mount Apo. It is the largest barangay in the city in terms of area with 6,675 hectares and the fifth most populated barangay with 9,552 people. The main agricultural crops are vegetables, corn, fruit trees and cut flowers. A banana plantation owned by a large company operates in the barangay with more than 80 hectares. Many residents believe that the chemicals used by this plantation could affect the watershed area, environment, livelihood, and people’s health.

Barangay **Guihing** is one of the largest barangays in Hagonoy, Davao del Sur. It has a population of 6,381 with an area of 1,256 hectares. It is one of the highest income barangays in the province because of the presence of three large companies namely, La Panday Banana Plantation, Davao Sugar Central Company and Davao Mango Ventures. Although some have been employed in these companies, most of the people complain about chemical pollution since these companies, especially the banana plantation, use toxic chemicals.

Adjacent to Guihing is **Aplaya**, a coastal barangay of Hagonoy, Davao del Sur situated beside the Padada River and at the rear of La Panday Banana Plantation. Most of the people's livelihood is fishing, some engaged in farming and few are employed in the banana plantation. The operation of the said plantation has been using poisonous and hazardous chemicals that resulted in a series of fish kills, destruction of marine habitat, river pollution, and various illnesses and few cases of death among the residents attributed to chemical exposure, especially from aerial spraying.

Project Objectives:

1. To help build the capacity of the local youth organization to undertake activities related to POPs and other pesticides.
2. To educate community residents and the general public on the adverse health and environmental effects of POPs and other pesticides.
3. To determine the presence of POPs pesticides, particularly endosulfan, in soil and water samples in a watershed area in Southern Mindanao, Philippines.

Public Disclosure

The results of the project were publicly disclosed on December 3, 2005 in a seminar-workshop held in Digos City, the converging point of the target barangays. Prior to that, preliminary information was fed back to the communities by the community monitoring team on a piecemeal basis through focus group discussions during their community visits. Again, the general findings about pesticides use and health effects on the communities were disclosed in another public forum in Davao City. A briefing on the results of the survey was done with the fisherfolk leaders in January, 2006. Subsequently, in February, March and April, 2006, the results were also disclosed to the media in Davao City and in two seminars on the same topic in South Cotabato, a neighboring province. The written report will be published on the website of PAN Philippines and will be shared with other partner organizations who are interested in the results. The results of the project will also be shared with concerned local government units and national bodies such as the Inter-Agency Committee on Environment and Health chaired by the Department of Health and the National POPs Focal Point of the Philippines at the Environmental Management Bureau of the Department of Environment and Natural Resources for possible consideration in reviewing the National Implementation Plan for POPs.

Justification for the Project

Endosulfan is an organochlorine pesticide that can be found in surface and ground water as well in the Canadian Arctic. There is active interest in the international community in its POPs characteristics. Endosulfan has reproductive and mutagenic effects along with effects on the kidneys, liver, parathyroid, and central nervous system. Endosulfan also has local impacts. In 1990, endosulfan became the number one cause of pesticide-related acute poisoning among subsistence rice farmers and mango sprayers in the Philippines. In

addition to endosulfan, farmers in the area report current use of the Stockholm Convention-listed POP, chlordane. This POP readily bioaccumulates in the food chain and is linked to neurological effects, liver disorders, damage to the reproductive system, and effects on the kidneys, cardiovascular and respiratory systems. The US EPA classifies chlordane as a probably human carcinogen.

This POPs project becomes highly necessary to inform the affected communities about the impact and negative effects of POPs, pesticides and other chemical fertilizers and mobilize them to carry out the grassroots' fight against the invasion of pesticides, and triple their efforts to promote the elimination of POPs substances to attain genuine, health hazard-free and pro-environment sustainable growth.

Efforts to stop, if not reduce the heavy use of pesticides, and other toxic and harmful substances in agricultural and fisheries production have been hampered by the billion-dollar funded, all-out campaign of transnational pesticide companies to promote, market and distribute their toxic products. Unfortunately, the government appears to endorse these products to the local market for local consumption.

The participation of the community and other affected sectors and interested parties is necessary to achieve the goal for POPs-free agricultural and fisheries production, and amplify the national objective of transforming production without relying on dangerous pesticides and chemical fertilizers.

Description of Project Accomplishments

Date	Activity	Description	Results
October, 2004	Consultation with leaders of LAKABA and CAUSE-DS	Initial discussion of the IPEP project proposal. Brainstorming and unification on objectives and general plans.	Consensus agreement among leaders of LAKABA, CAUSE-DS and PAN Phils on the objectives and general plans.
November, 2004	Meeting with members of LAKABA. Writing of project proposal	Project concept explained to members and approval sought. Proposal drafted by CAUSE-DS and PANPhils	Final approval of project concept by members of LAKABA. Final draft of project proposal submitted
January-February, 2005	Contacts made with analytical laboratory in Manila for	The procedures and costs of laboratory analysis discussed.	Negotiations not pursued due to costs limitations.

	possible submission of environmental samples for analysis	Costs have increased tremendously.	
February, 2005	Follow-up meetings and preliminary visits to prospective target areas.	Discussion of implementation plan and determination of possible sites for monitoring and sampling.	Community monitoring team formed, possible sites narrowed down to 5 communities.
April, 2005	Contacts made with a government analytical laboratory in Davao for possible submission of environmental samples for analysis	The procedures and costs of laboratory analysis discussed. Costs were relatively lower than in previous negotiations in Manila	Laboratory agreed to do the analysis of environmental samples pending final approval of higher officials
April, 2005	Follow-up visits and ocular inspection in Barangays Ruparan, Goma, Kapatagan, Guihing, and Aplaya	Meetings with contact persons in the community, familiarization with the community and determination of possible sites for sampling.	Target sites identified and community monitoring team familiarized with the community
June, 2005	Training workshop on community monitoring and environmental sampling.	Identification of research needs and formulation of work plan according to the project activity memorandum.	Improved knowledge, skills and attitudes of participants on community action monitoring of pesticides. Action plan developed.
June, 2005	Visit to the government analytical laboratory in Davao and follow-up negotiations on submission of environmental samples	Ocular inspection of laboratory facilities, discussion with analytical chemist on procedures and capacity of the laboratory to determine pesticide residues.	Capacity of laboratory to perform analysis verified and arrangements for submission of samples firmed up.
July-October,2005	Sporadic key informant interviews, household survey, focus group	Initial data gathering, follow-up visits, community organizing	Preliminary data gathered, community team slowed down due to

	discussions conducted in Barangays Guihing and Goma	continued.	lack of funds but remained intact.
November-February, 2005	Data gathering continued, follow-up community visits done	Household survey and interviews continued	Initial collation and assessment of data gathered done
December, 2005	Public awareness activities, follow-up training on community action monitoring in Digos	Photo exhibit, production and distribution of IEC materials, streamer hanging, media advocacy, and seminar-workshop on pesticides and health held in Digos City	Initial public disclosure of data gathered, public awareness on pesticides and health increased, multi-sectoral participation
January, 2006	Meeting with fisherfolk leaders	The results of the interviews and surveys, particularly on the pesticides used and how the fisherfolk sector is affected were discussed.	Increased understanding among fisherfolk leaders on how pesticides (including POPs) affect their sector.
February, 2006	Seminar on pesticides and health for community health workers, church lay workers and individuals affected by pesticides in Marbel, a town about 50 kms northwest from Digos.	Learning about the project in Digos, The social action center of the Diocese of Marbel requested the seminar for about 30 participants. Information on the findings from Guihing was shared.	Engagement of the church sector on pesticide and POPs issue. Great interest of the church leaders gained, opening the possibility of that the church will create a program on this issue and will put resources into it.
February, 2006	Consultation meeting regarding laboratory analysis of environmental samples	Arrangements were followed-up with the laboratory but no decision could be made because there was no response yet from their higher	Laboratory analysis stalled due to the uncertainty in the decision of the new government officials overseeing the laboratory.

		officials.	
March, 2006	Follow-up of some patients, including one at the Digos Hospital, meeting with attending physician.	Moral and financial support given to patient with blood disorder suspected to be due to pesticide poisoning. Discussion with attending physician at the hospital regarding the case.	Patients with illnesses suspected to be due to pesticide exposure given assistance. Attending physician expressed interest in pursuing further the pesticide poisoning cases and promised to help in documenting them.
April, 2006	Training workshop on community action monitoring of pesticides used in Polomolok	This training was patterned after what was done earlier in Digos. Participants (about 30) were mainly church lay workers and village health workers.	More community health workers and church extension workers trained to undertake information and education campaign on the issue of pesticides and POPs.
April-May, 2006	Collation of area reports and writing of final report	Activity reports from the partner organizations in various communities were collected and put together by PAN Philippines.	Final report finished

Results of household survey in Barangay Guihing

Total Number of respondents: 30

Age range: 28-75

Sex: Male- 19

Female- 11

Does the person affected own the land he/she is tilling?

Yes- 0

No- 30

Name of pesticides used:	Number of Respondents
Mocap (Ethoprop)	17
Confidor (Imidacloprid)	14
Nemacur (Fenamifos)	13

Topsin (Thiophanate methyl)	8
Furadan (Carbofuran)	6
Tilt (Propanil)	3
Decis (Deltamethrin)	2
Nematicide (unknown brand)	2
Gramoxone (Paraquat)	1
Bravo (Clorothalonil)	1
Parapest (Diazinon)	1
Basudin (Diazinon)	1
Confidor mixed with Topsin	1
Dithane (Mancozeb)	1
Not known/ Cannot identify	3

Adverse effect due to pesticide exposure:	Number of Respondents
Skin disease, lesion, allergy, rashes	27
Headache	7
Nausea	6
Dizziness	4
Body malaise	4
Weakness	4
Coughing	4
Vomiting	3
Eye irritation	2
Seizures (Muscular twitching)	1
Loss of appetite	1
None (Newly hired)	1

Was the person affected also the one who used the pesticide?	Number of Respondents
Yes	5
No	24
No Answer	1

Did the user wear gloves, masks, or any protective clothing?	Number of Respondents
Yes	9
No	21
Sometimes	3

How was the affected person exposed to the pesticide?	Number of Respondents
In ground spraying	19
Aerial spraying	4

Through inhalation	8
In mixing the pesticide	1
In spreading pesticide	1
Ingestion of contaminated food	1
Exposure through the affected area	3

How long after exposure before the adverse effect was felt or seen?	Number of Respondents
Immediately after	17
Few hours after	10
One day after	3
More than 1 day after	1
Not known	1
No answer	1

* Some respondents had more than one answer

How long did the adverse effect of the pesticide last?	Number of Respondents
Few minutes	12
Few hours	12
One day	4
More than 1 day	9
Not known	1

* Some respondents had more than one answer

How often was the person affected exposed to pesticide?	Number of Respondents
Almost daily	14
Weekly	9
Monthly	4
Only once	1
No answer	1

* Some respondents had more than one answer

What happened to the person affected by the pesticide?	Number of Respondents
Died	0
Seriously bedridden	1
Bedridden for a while	1
Nothing serious happened	17
Just rested, gone after few minutes	8

Did the person affected experience the same effects before?	Number of Respondents
Yes	24
No	4
No answer	2

Did the person affected have any disease prior to the pesticide effect?	Number of Respondents
Yes	1
No	29
If yes, what was the disease? Kidney problem	

Was the person affected taking medications prior to the pesticide effect?	Number of Respondents
Yes	0
No	30

Was the person affected by the pesticide a smoker?	Number of Respondents
Yes: 1-10 sticks/day	11
Yes: more than 10 sticks/day	8
No	11

Was he a drinker of alcoholic beverages?	Number of Respondents
No	7
Almost everyday	7
Few times/week	13
Few times/month	2
No answer	1

Did the person affected drink alcoholic beverage prior to the pesticide effect?	Number of Respondents
Yes	1
No	29

Are there any other things/factors that might have caused the symptoms/signs which are perceived to be pesticide effect?	Number of Respondents
Yes	2
No	27
No answer	1

If yes, what?	Number of Respondents
Climate, weak body resistance	
Sudden change of climate	

Key informant interviews

No. of key informants (local officials, farmer leaders, agri-supply store): 8

Are you aware of persistent organic pollutants?	Number of Respondents
Yes	2
No	6

Are you aware of international agreements seeking to eliminate persistent organic pollutants	Number of Respondents
Yes	1
No	7

Are you aware if the Philippine government is a signatory to an international agreement on persistent organic pollutants?	Number of Respondents
Yes	1
No	7

Is DDT still being used in this area?	Number of Respondents
Yes	1
No	5
Not sure	2

Is endosulfan (Thiodan) still being used in this area?	Number of Respondents
Yes	3
No	3
Not sure	2

Is chlordane still being used in this area?	Number of Respondents
Yes	2
No	3
Not sure	3

Proposed Program of Work (Post-Project Activities):

As part of the post-POPs project, LAKABA and CAUSE-DS have drafted a tentative one year plan for follow-up public awareness and continued community organizing and community monitoring activities June 2006 to disseminate and popularize the results of the social investigations on POPs and other pesticides in other barangays through discussion groups, seminars, inter-barangay workshops and public meetings.

A follow-up meeting is planned sometime in July, 2006 to explore possibilities of collaborative work with other sectors (e.g., the church group) and to firm up future plans for their collective advocacy work on POPs and other pesticides found to be causing problems to the communities studied. Other groups in neighbouring areas (e.g., South Cotabato) have expressed keen interest in undertaking the community pesticide action monitoring and are willing to put up their own resources to participate in the project. The project partners are determined to follow through the stalled environmental sampling and laboratory analysis. We are optimistic that the bureaucratic delays will be over in the next few weeks.

Other planned activities:

1. Production of an expanded training module for community pesticide action monitoring (CPAM).
2. Additional trainings on community pesticide action monitoring in areas who expressed interest (e.g., South Cotabato)
3. Setting-up a pesticide quick reaction and surveillance team in areas where training on CPAM have been undertaken.
4. Ensuring the implementation the much delayed environmental sampling and laboratory analysis to determine the presence of POPs pesticides and other pesticides of concern..
5. Production of primer on POPs pesticides and other pesticides of concern.
6. Exploring multistakeholder dialogue to address policy gaps in the implementation of the POPs treaty and other laws pertaining to POPs and other pesticides
7. Holding of dialogues with local government officials to ensure that issues of POPs and other pesticides issues are high in their agenda.
8. Continuation of public awareness campaign: for a, seminars, meetings, exhibits, fairs, media outreach, day of action, etc
9. Production and distribution of various kinds of IEC materials.

10. International information drive in collaboration with national and international networks engaged in campaign and advocacy against pesticides and toxic substances.
11. Resource generation.