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Project Summary

The Indoor Use of Pesticides in Developing Countries An unknown hazard

A study conducted by PAN in 1999 found that household use of pesticides in developing countries presents a serious problem. Chemical pesticides have gained popularity in many households, yet these chemicals are usually excluded from existing regulations and government supervision, and potential risks are rarely the subject of public campaigns. Thus many of those using these hazardous chemicals are not aware of the necessary precautions that should be taken to avoid harm to health and the environment.

Mosquitoes, cockroaches, ants, flies, lice, rats - populations of tropical and sub-tropical countries face the constant problem of pests and in their homes. Nowadays, in many households these problems are solved with the aid of chemical pesticides, available in most countries throughout the world – often with few restrictions or little regulation.

Even in Europe the Biocide Directive, regulating the registration of pesticides for use in non-agricultural sectors was not passed until 1998. So, even in countries with strict regulation of agricultural pesticides, the misuse of household pesticides may occur often.

While there is little information on home use of pesticides in industrialized countries, almost no information on non-agricultural use of pesticides in developing countries is available. To determine the scale of the problem, PAN Germany developed a project to gather data on the use of pesticides in households in developing countries and associated public health impacts. The project, launched in December 1998 in close cooperation with PAN Asia & the Pacific and RAAA (Peru), aimed to assess the amount of pesticides used indoors in Malaysia and Peru, and the resulting toxicological impact. Government regulations in the two countries would also be reviewed. Based on the study's findings, the project would recommend ways to reduce risks resulting from use of household pesticides and suggest ways to implement these recommendations.

With financial support of the GTZ (Gesellschaft für Technische Zusammenarbeit - German Technical Cooperation) PAN Germany was able to conduct a feasibility study which was finalized in July 1999. A search of existing literature found that indoor use of pesticides occurs throughout the world and that considerable health risks exist for users of these chemicals. At the same time, the availability of data on both use and risks is generally lacking, especially in regard to developing countries. This is true for data on quantities and type of use, cases of

poisoning or room contamination as well as for a lack of systematic compilation of legal regulations and their implementation. Alternative substances or methods of pest control and other possibilities to minimize health risks suitable for developing countries were also not found in the available sources. Furthermore, it was impossible to assess to what extent the indoor use of pesticides, associated problems and required actions are discussed by government authorities, NGOs and consumers.

These findings served as a basis for the interview design, and interviews were conducted with representatives of government agencies, non-governmental organizations and industry in both Peru and Malaysia. The following topics were part of the discussion:

- What products are used for indoor pest control? What are the main pests? Who applies the products?
- At which rate cases of poisoning and misuse are studied and analyzed?
- Do legal regulations exist for use of pesticides in the domestic sector?
- Who is responsible for enforcement of the legislation?
- How is information about pesticide regulation distributed (language, media, target group)?
- What are the main obstacles to implementing the regulations?
- What is already known about the use of pesticides in households?
- Are there differences between groups of users (e.g. whether the situation differs between rural and urban areas)?

The interviews uncovered some interesting information. **Use** of chemical products for indoor pest control is widespread in both Malaysia and Peru, and application is done primarily by women. In *urban areas*, the quantities used are higher than in the *rural areas*. *Income* levels as well as *education* are important for the quantities and qualities of applied products.

It has to be distinguished between the different *income* levels, not only regarding the general decision whether pesticides are used at all, but also in terms of formulations and active ingredients used. While mosquito coils are a cheap alternative for sprays, vaporizers, etc. in Malaysia, the situation in Peru seems to be unclear: Here seems to exist a wide range of different products, with the cheapest of them poured into other containers or re-mixed.

The *educational level* of the users has to be considered. According to some interviewees knowledge of risks and alternatives, and thus awareness of the problem are correlated with the general level of education. In this context the labeling is seen as quite complicated.

Although the **legal position** is different in Peru and Malaysia, it could be stated that household pesticides are only partly subject to legal regulations. While plans exist in Peru to enact adequate laws to cover home pesticide use, these products are explicitly excluded from current laws in Malaysia. In both countries only a few interviewees felt able to give details on if and how *information* about legal regulations are given to the public. All others agreed that the public does not receive any information.

The main *obstacle* to implementation of regulations in Peru appears to be control of the considerable black market; products are imported illegally mainly from China and South Korea. There are also locally produced pesticides with unknown ingredients or pesticides that are re-packed in small units (primarily rodenticides) and sold in the local markets. In Malaysia, there seem to be loopholes in the law. Another reason given for inadequate implementation

of law (and for a missing amendment - as mentioned above there are almost no laws concerning household pesticides) is a lack of political will and the links between industry and government. Furthermore, one producer stated that following procedures proscribed by the regulations is problematic due to the red tape involved.

There are no data available on **volumes of import, production or trade** of household pesticides. Only two statements were made: according to a Peruvian company the turnover for 1993-94 is valued at US\$ 5-6 millions per year - official data are not available. (according to the company sales were 5-6 millions/ no official statistics available). In Malaysia, estimated consumption of mosquito coils is sixty per capita and year; from this it could be concluded that mosquito coils are used every night in most households (this figure comes from a company interview).

A wide variety of pesticide products for home use could be found in both countries. Quite precise information were given by the industry on active ingredients and formulations in Peru (during the interviews). According to these interviews with the industry 50 to 60% of the products contain organophosphates, 20 to 30% pyrethroids, and further a small percentage contain carbamates and some organochlorines. In Malaysia, mainly pyrethroids are offered, but products that contain organophosphates or carbamates can also be purchased.

In terms of **marketing** of household pesticides in both countries *advertising* is everywhere and products are generally described as *efficient* ("They kill pests fast"). Advertising campaigns do not warn costumers that use of these chemicals carries risks and that users must follow necessary precautions.

In both countries, the household pesticides are for sale without any restrictions and thus are available in virtually every supermarket, in many small retail shops and in public markets. In general, vendors have no knowledge about the products, and therefore can not give any information to their costumers.

Only a few institutions are concerned with possible **health risks** and therefore detailed information on these risks and poisoning cases are rarely available. But virtually everyone interviewed agreed that indoor use of pesticides involves health risks, and that many poisoning cases are caused by misuse and careless handling of household pesticides. The reason for misuse is seen as a lack of knowledge about the products, thus they are stored where children can reach them, or they are mixed up with food or beverages, or mistakes are made during application (e.g. overdose or inhalation). Labeling is regarded as insufficient or ineffective. An NGO in Malaysia found in their own research that most of the users do not understand the labels, in some cases because the language is too complicated, in others because the Chinese and Indian populations do not always find instructions in their respective languages. The language problem is even greater in Peru where many imported products are labeled only in English or even in Chinese.

Although the average literacy rate is approximately 85% in both countries, the percentage among women and in the rural areas could be much lower. Due to a lack of information, awareness of potential health risks related to indoor use of pesticides is also low.

Our findings are an urgent call for action to at least reduce the hazards associated with use of indoor pesticides.