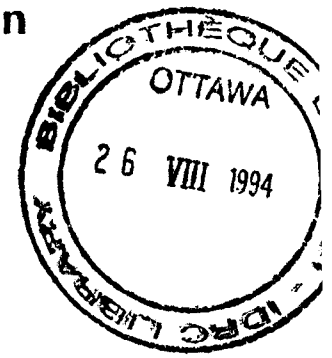
Improving pesticide regulation in the Third World: the role of an independent hazard auditor



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Central to the environmental and health hazards created by the expanding use of pesticides in developing countries is the weakness of national regulatory agencies. International efforts to support these institutions include the establishment of a Hazard Audit Organization to assess the pesticide industry's adherence to accepted standards of health and environmental protection. An independent evaluation by a hazard auditor may be attractive to all parties in the long-standing confrontation over the control of pesticide technology: the industry, public interest groups, developing and developed countries, and international agencies. One approach to implementing the concept is proposed and initial responses to the proposal are reported.

The papers presented at this symposium join a growing body of evidence of the effect on human health and the environment caused by the rapid increase in pesticide use in developing countries. Chemicals of sometimes extreme human or environmental toxicity are transported, stored, used, and discarded in ways that expose people and other nontarget organisms to significant hazard.

The urgent need for effective regulation of these hazards, however, contrasts starkly with national capacity, which is limited in much of the Third World. More than 50% of developing countries have no legislation enabling government to regulate the marketing of pesticides or limit their availability to particular areas or users; in Africa, the proportion is 76% (FAO 1989). Even where adequate legislation exists, regulatory agencies are often unable to assess pesticide hazards in light of local conditions or to enforce the decisions they reach, because of a lack of qualified personnel, inadequate resources, or interference.

Current initiatives, at the international level, aimed at improving this state of affairs are discussed in this paper. A novel approach, the concept of a "pesticide hazards auditor," who would build upon and supplement these initiatives has been promoted over the last year with support from the International Development Research Centre (IDRC). Initial reactions to this proposal from developing and developed countries, international agencies, the pesticide industry, and consumer, environmental, and labour groups are described.

International initiatives

Technical assistance and information exchange

A number of bilateral and multilateral aid organizations have launched programs aimed at increasing the skills and resources available to pesticide regulatory agencies in developing countries. The Food and Agriculture Organization (FAO), United Nations Environmental Program (UNEP), the World Health Organization (WHO), the US Agency for International Development (USAID), and Germany's Agency for Technical Cooperation (GTZ), among others, are providing training, analytical equipment, information systems, continuing support in the evaluation of risks and benefits, and advice on legislative reform. In several cases, as in FAO's programs in the Far East and Africa, this assistance is organized on a regional basis. The task, however, is immense; fewer than one-quarter of developing countries claim to have received any technical assistance (FAO 1989).

A major cause of concern is the international trade in highly toxic pesticides, particularly the export to developing countries of products banned or severely restricted in the country of manufacture. The USA, UK, and the European Community have instituted schemes to notify importing countries of shipments of unregistered or severely restricted pesticides. In practice, notifications are often received well after the pesticides have arrived and do little to enable importing countries to control hazardous imports (Pallemaerts 1988).

Nongovernmental organizations (NGOs), with support from many developing countries, have mounted a determined lobbying effort within the governing councils of FAO and UNEP in favour of more restrictive schemes based on the principle of "prior informed consent" (PIC), whereby a designated authority in the importing country must explicitly agree to the import before it can take place (Anon. 1990a). Late in 1989, both organizations adopted complementary PIC procedures, after first refusing to do so. The Commission of the European Community is currently considering a draft directive that would incorporate PIC into European law (T. Casey, Consultant to the Directorate-General for the Environment, Commission of the European Community, June 1990, personal communication) and the proposed *Pesticide Export Reform Act* would do the same in the USA (Anon. 1990b).

Although PIC, as operated by FAO and UNEP, will extend to many of the pesticides that have been implicated most often in human poisoning, the degree to which it will actually improve the regulation of such hazards is open to question. Pesticides banned or severely restricted by 10 or more countries will be the first to be covered by the scheme, followed, probably in late 1990, by those so treated by five or more countries. Thereafter, substances labeled "banned or severely restricted" in a decision by any additional country will be included. A working group will determine whether formulations based on WHO class 1A (extremely hazardous) compounds should be covered as well (Anon. 1990a). A recent report by the British-based Pesticides Trust (1989) contends, however, that several class 1B (highly hazardous) pesticides that have frequently been involved in poisoning incidents may escape the informed consent provisions.

The scheme hinges on a government's ability to evaluate and act on the notices it receives, and it is precisely this capacity that is deficient in many instances. As well, PIC begins with the decisions industrialized countries have taken to protect health and the environment within their own jurisdictions. Industry has often claimed that a different balance of risks and benefits may lead developing countries to judge acceptable a number of pesticides strictly controlled in industrialized countries (Willis 1986).

The argument works as well, however, in the other direction, e.g., the application methods and worker protection typical in much of the Third World may result in operators being dangerously exposed when using products not subject to any significant restriction in industrialized countries. These determinations can only be made in the light of local conditions, emphasizing once again the need for effective national regulation.

The drafting of the *International code of conduct on the distribution and use of pesticides* (FAO 1986) is another major initiative that addresses the weakness of pesticide regulation in developing countries. The code calls on the pesticide industry at all levels, as well as exporting nations, international agencies, and public-sector organizations to assume a share of responsibility for ensuring safety in the use of pesticides. The code's provisions are entirely voluntary and there has been considerable controversy over the extent to which they are respected in practice.

Two reports (ELC 1987; Pesticides Trust 1989) prepared for the Pesticides Action Network (an international group of NGOs) allege widespread infringements of the Code, for the most part by industry, in all developing countries investigated. Evidence is presented regarding misleading advertising, inappropriate packaging, poor quality control, and marketing of banned and dangerous products. Governments in developing countries also cite widespread failure by industry, as well as other parties, to abide by the Code's provisions (FAO 1989). In response to these findings, the FAO Conference has asked the Director-General to report by next year on the feasibility of transforming the Code into a convention that governments could make legally

binding within their jurisdictions. Effective enforcement of such legislation, however, would come up against both the vague wording of many of the Code's provisions and, once again, the limited resources available to Third World governments.

The industry perspective

At Ciba-Geigy Ltd, a principal pesticide manufacturer, the FAO Code is accepted apparently without reservation and has been incorporated into the Agriculture Division's quality policy (Anon. 1988a). It is seen as being consistent with the principle of "product stewardship," which entails continual monitoring and periodic internal audits (Anon. 1988b).

The true measure of corporate commitment to these policies and principles is in their application, particularly in cases where there may be conflict with short-term profitability. Ciba-Geigy claims, in several instances, to have voluntarily refrained from marketing products where evidence suggested that they could not be safely used (as required under section 5.2.3 of the Code). For example, chlordimeform (Galecron) was removed from the Latin American market following reports of poisoning; dichlorvos (Nuvan) and phosphamidon (Dimecron) were considered too toxic for agricultural application in the Philippines and Burkina Faso, respectively.

Officers of the company point to a range of initiatives aimed at reducing risks to health and the environment, including improvements in formulations and packaging and an increased emphasis on safety training. Progress is slow but continual, they say, yet little credit is given to these efforts by the company's critics.

Pesticide hazard auditor

Crisis and opportunity

The pesticides industry finds itself under increasing pressure from national authorities, international bodies, and environmental and consumer groups (GIFAP n.d.). Its public image has suffered from a series of widely publicized disasters (Seveso, Bhopal, and the Rhine), as well as from more localized crises, such as the contamination of groundwater in Italy's Po valley.

An alternative to confrontation may be found in an historical analogy. By the late 18th century, there had emerged in Britain a large number of common-law corporations engaged in commerce and manufacturing. A highly speculative and unregulated market in corporate stocks developed, leading to several spectacular financial failures. Investors and creditors led the resulting public demand for investigation, which required the services of independent accountants. By the early 19th century, it had become common practice to call upon

such skilled outsiders to assist in settling disputes and bankruptcies and, increasingly, to attest to the soundness of enterprises seeking investment or credit. It is to these developments, given legal support in 1844, that the Anglo-American tradition of independent financial auditing can be traced (Anderson 1984).

The recent trend in the United States toward "environmental auditing" appears to have a similar history. A growing number of firms whose activities may give rise to pollution and occupational-health hazards have retained independent environmental auditors to help ensure compliance with regulatory standards and to oversee internal auditing procedures. Once again, the need of companies to maintain investor and creditor confidence and to safeguard their public images appears to have been as crucial in this decision as court-sanctioned or regulatory requirements (Palmisano 1989)

Companies producing and marketing pesticides in developing countries should have their practices, with regard to impact on health and the environment, examined by an independent pesticide-hazards auditor. To the extent that a company's good name or image has value in a competitive environment, a hazard auditor might help create a market-based mechanism for ensuring compliance with accepted standards that would reinforce official regulation. For the system to gain acceptance in the industry, it must embody certain characteristics:

- Independence — the auditor must be seen to have no link, direct or indirect, with the company being examined.
- Authoritativeness — the audit must be based on explicit and recognized standards, as have been codified for financial auditing in the form of generally accepted accounting principles. The FAO Code (FAO 1986) is subscribed to by all parties and might provide one of the bases for defining acceptable corporate practice with respect to pesticide hazards.
- Expertise — the individuals performing the audit must inspire confidence by their demonstrated technical knowledge and mastery of the standards underlying the hazard audit.
- Openness — while respecting proprietary and commercial information whose disclosure might prejudice a company's interests, the detailed and material conclusions of the auditor must be made public if its function is to be fulfilled. Similarly, the company must be prepared to make available to the auditor all relevant documents and records.
- Service — beyond assessing a company's compliance with accepted standards, a financial auditor often provides advice on internal auditing procedures. Similarly, the hazard auditors would make a more useful contribution (and not only to the company) if they suggested changes in, say, a company's environmental- and health-monitoring programs that would enable problems to be identified earlier.

Benefits of a hazard auditor

From the company's perspective, a positive and unqualified attestation from the hazard auditor would provide authoritative confirmation that the company was acting on the high standards to which it laid claim. This would help reassure the increasingly restive society within which agrochemical companies operate and at the same time serve to differentiate the firm from less responsible competitors.

Among developing countries, those whose national regulation is the weakest would stand to benefit most from a hazard audit. The audit would provide an immediate form of control of pesticide hazards, based on the application of broadly accepted principles to the local context in which the products are marketed and used. In no sense, however, should the hazard auditor be seen as substituting for national regulation over the longer term.

A financial audit, in most industrialized countries, is sanctioned by law and backed by administrative and legal measures that ensure compliance with accepted norms. Either form of audit, financial or hazard, relies on market forces and corporate self-interest to raise and maintain an industry's standards. Internal and external audits may lessen the requirements for government enforcement, benefiting developing countries with operational, if constrained, regulatory systems. However, public supervision is still essential to ensure that these mechanisms function efficiently.

For NGOs and their allies on one hand and the pesticides industry and its supporters on the other, the hazard audit may represent one element of a solution to a long-running conflict that, for both, has absorbed considerable energy and resources.

Implementing the concept

Initial steps

A description of the hazard audit (Loevinsohn 1989) was sent to some 150 organizations on all sides of the debate. The concept was further discussed at two scientific conferences and in meetings with some of the major organizations. The response has been generally positive. A meeting of representatives of the main sectors has been suggested to explore in greater detail whether a consensus is attainable and to chart further action.

Participants at such a meeting could discuss its outcome in their respective constituencies and, if general agreement is obtained, working groups could be formed to define "accepted standards," develop procedures for the audit teams, and prepare a draft charter for a Hazard Audit Organization. The output of the working groups would be reviewed at a further meeting involv-

ing all major actors. At the same time, the concept would be given wider circulation through print and other media.

Several case studies could be conducted to build confidence and gain experience. These would take place in developing countries whose governments support the aims of the audit.

If the studies were judged successful, the Hazard Audit Organization might be established by a substantial portion of companies in the industry, the major NGOs engaged in campaigning, and other groups representing the public. The support of influential governments in the North and South, key professional associations, and leading international bodies would also be essential.

Structure and function

An autonomous, nonprofit Hazard Audit Organization would have, as its primary task, external hazard audits of companies involved in the manufacture and sale of pesticides in developing countries. Financing would be provided by participating companies, the members, and the industry association, Groupement international des associations nationales de fabricants de produits agrochimiques (GIFAP), as well as firms outside this body. Companies would be charged on a cost basis for each audit, but would also make annual contributions toward the organization's administrative expenses.

General supervision, policy formulation, and the further development of "accepted standards" would be the responsibility of a governing council whose members would be drawn from four broad sectors: the pesticides industry; national regulatory agencies and international bodies (e.g., FAO, WHO, and UNEP); research institutions and professional associations; and consumer, producer, and environmental organizations. Relative proportions remain to be negotiated, but no sector should be allowed to dominate. A technical subcommittee would be responsible for planning and setting terms of reference for individual audits, selecting team members, and reviewing their reports. A small secretariat would also be required. Well-qualified auditors would be drawn from professional associations, international agencies, and national regulatory bodies in the North and South. Retained initially as consultants or on secondment, auditors might eventually be hired by the Hazard Audit Organization.

Standards

The FAO Code of Conduct (FAO 1986) may provide a framework of generally accepted principles on which to base the hazard audit, but in many respects the Code's provisions lack specificity. What, for example, constitutes "safe use" or an "unacceptable hazard"? An operational definition of these terms might be based on the practice of well-established regulatory agencies. A residue concentration or exposure level that falls within the range of what

different agencies take to be permissible can be said to be "generally acceptable." The variation in national tolerances to health hazards appears to be greatest with respect to chronic effects which, in statistical terms, are often weak and uncertain. The consensus is generally clearer for acute effects in spite of the preeminent threat to populations in the Third World (Jeyaratnam 1985).

Procedures

Rather than focus on one company's operations worldwide, the hazard audit might be conducted in one developing country at a time and involve all participating companies that do business there. In this way, it should be possible to cover several countries each year. Given the number of firms and the range of their activities, the auditors would have to rely on sampling techniques, as do financial auditors. The hazards entailed in different aspects of companies' operations might be stratified by severity and risk on the basis of published information, reports from government agencies and NGO groups, and the experience of the technical committee and auditors. Giving greatest weight to the most severe and probable hazards, a sample of practices would then be drawn and assessed in relation to the standards that had been defined.

The audit team would examine company documents and facilities, interview employees, and investigate the distribution of products and the manner in which they were employed. Auditors would also consider information from regulatory bodies, research institutions, and producer, consumer, or environmental groups. Where it is deemed necessary, the team might undertake or commission research that would enable it to reach an informed opinion.

Every effort would be made to ensure the active support of governments of the countries in which the audits are performed. The Hazard Audit Organization and host governments might work out different relations, according to the latter's needs and desires. Following their investigations, auditors would be well placed to report to the government on the effectiveness of national regulation and provide some advice on remedies, possibly focusing on aspects that the government had identified beforehand as problematic. An audit that covered perhaps several months would not, however, provide an opportunity for extensive technical assistance, although the team might make a useful contribution by identifying critical needs for other agencies to follow up.

Reporting

The auditor's report would express a considered opinion regarding the extent of a company's adherence to accepted standards of conduct. Where deficiencies were noted, the report would detail how practices should be improved to meet standards. This might entail, for example, changes in labeling, packaging, promotional material, educational programs, or restrictions on the availability of the product in that market.

As suggested above, the auditor's report would be made public, except for commercially sensitive or proprietary information. At the company's request, dissemination might be delayed a few months to permit it to bring its practices into line with the recommendations.

It is conceivable that, at some point, the conclusions of the auditor may conflict with the judgement of the national regulatory agency. For example, the former may find that a company should not be marketing a certain product, given pesticide practices in that country, even though the agency might have recently renewed the product's registration. The audit is of a company; it is not intended to limit a government's prerogative to evaluate risks as it sees fit. In the face of an auditor's public report, however, a decision to permit continued use would call for an alternative interpretation of the evidence or a demonstration of overriding benefits. In this way, the hazard auditor might serve to raise the standards of risk assessment and to open it to public scrutiny.

Initial reactions

Several dominant themes emerged among 58 written replies to the hazard auditor proposal (Loevinsohn 1990). Of the opinions expressed, 5 (9%) were negative and 53 (91%) were positive in varying degrees.

Increase support to national regulatory authorities

The most widely voiced view (39% of the 49 detailed responses) was that greater emphasis should be placed on evaluating and assisting regulatory agencies. Some industry respondents felt that the focus on industry alone was unfair and others, from several sectors, thought the auditor's recommendations would more likely be acted on if government was more closely involved in the process.

An audit that puts developing country governments on the same footing as industry makes no sense; the weakness of national regulation is universally acknowledged and is the underlying rationale for initiatives such as the Code of Conduct and the pesticide hazard auditor. Although some assistance to national authorities might take place within or along with the audit, supported from nonindustry sources, there is a danger of overlap with existing or planned programs of agencies, such as FAO, were this function to take on a much greater significance. Closer integration with FAO is indeed a possibility and, in that context, the audit might extend to other sectors addressed by the Code of Conduct.

Ensure the auditor's independence from industry

The second most frequent comment (22% of the 49 detailed responses) concerned the danger of the hazard audit being dominated by the pesticides

industry and of its serving to legitimize pesticide use. Several respondents believed that these risks could only be avoided by complete financial autonomy and by excluding industry representatives from the governing and technical bodies of the audit organization.

Reasonable safeguards against domination should be built into the scheme. There would be justification, for example, in excluding company representatives from the technical committee where audits would be planned. Sanctions should be available against companies that, in their advertising or labeling, misconstrue audit results to imply an endorsement of their products. Funding from other sources could be sought to dilute the dependence on industry, but the self-financing character of the proposal is one of its chief attractions. Any attempt to exert undue influence would lead other sectors to withdraw their support from the scheme and lose companies the commercial benefit they derive from an independent audit.

Furthermore, financing by industry is economically rational. An independent audit can legitimately be seen as part of the regulation required to minimize the external costs to which pesticides give rise when they damage human health or the environment. Outside financing of the audit would amount to a subsidy, leading to greater use than if real costs were reflected in market price (Repetto 1985; Brader 1990) and distorting the choice between chemical-based pest control and alternative techniques.

Emphasize the incentives for industry compliance

A number of respondents suggested measures to increase the benefits to a company that agreed to be audited and implement the audit's recommendations. These include proposing that multilateral and bilateral aid organizations make a satisfactory audit report a requirement in their procurement programs. Developing country governments could similarly agree to purchase only from manufacturers who have received such an evaluation from the auditor. Governments might also make the external hazard audit a legal requirement, as is the case for financial audit in many countries.

Measures such as these might indeed usefully increase incentives for compliance and penalize companies who remain outside the scheme to gain, for example, a price advantage. Additional incentives may be particularly important to smaller manufacturers based in Third World countries where public opinion is often poorly informed. Many of these firms produce hazardous pesticides and are often not affiliated with national or international industry associations.

Increase collaboration with FAO and other United Nations agencies

Several respondents wrote that, as the hazard auditor aims at improving compliance with accepted standards, particularly those embodied in the FAO Code of Conduct, a closer relation with FAO should be sought. Some questioned the need for an independent audit organization.

I investigated the possibility of an association with FAO and other United Nations (UN) agencies. Senior FAO officials recognized the value of the auditor, particularly as a possible means to improve compliance with the Code should it become a convention made binding under national law. However, two difficulties were mentioned. FAO, the officials declared, would not accept the financial link with industry that the proposal envisages. The other problem involves openness in reporting, which is crucial to the functioning of the audit mechanism. Because FAO is responsible to its member governments, problems might arise if it were to publish reports that were critical of national administrations.

Similar concerns were voiced by officials of UNEP and WHO. These constraints might be loosened if there were widespread support for the innovation at the highest levels. However, the independence required of an external auditor would be more readily assured within an organization that is itself independent of the major actors.

Conclusions

The hazard auditor concept holds promise for improving the regulation of pesticide hazards in developing countries by creating a new market-based mechanism complementary to, and supportive of, national structures and international programs. It has already attracted widespread, if still provisional, support, but further progress toward implementing the concept will require collaboration among parties grown accustomed to confrontation. The proposal does not assume an congruency of interests among these parties, only that each side believe its interests are served by independent evaluation. Individual actors may conclude that the risks attendant on creating and operating this novel mechanism outweigh its benefits. It is not possible to predict the outcome of what will be a long process of negotiation. The prudent option, for all concerned, is to judge at each step whether the hazard auditor as it is emerging represents an improvement on what currently exists.

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IMPACT OF PESTICIDE USE ON HEALTH IN DEVELOPING COUNTRIES

Proceedings of a symposium
held in Ottawa, Canada,
17–20 September 1990

Editors:
G. Forget, T. Goodman, and A. de Villiers

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Contents