An Agricultural Law Research Article

Pesticide Abuses in Third World Countries and a Model for Reform

by

Mark A. Kablack

Originally published in BOSTON COLLEGE THIRD WORLD LAW JOURNAL
11 B.C. THIRD WORLD L. J. 277 (1991)

PESTICIDE ABUSES IN THIRD WORLD COUNTRIES AND A MODEL FOR REFORM

I. INTRODUCTION

Trade in hazardous technology and hazardous products between developed and less developed countries (LDCs) has caused increasing national and international concern for human health and the environment. In the United States this concern was first aroused in 1977 by the scandal surrounding Tris, a flame retardant chemical used in treating clothing.[1] The Consumer Product Safety Commission (CPSC) discovered that Tris was a carcinogen and banned its use in the U.S. market in 1977.[2] After the U.S. market ban, however, sleepwear manufacturers exported Tris-treated garments for use abroad. Much to the dismay of Congress and the public, the Government Operations Committee found that existing law did not regulate or prohibit the manufacture and trade of hazardous products produced solely for export.[3]

The Tris scandal prompted a national debate over the means of enhancing governmental control over U.S. exports of hazardous products. As a result of this debate, Congress passed laws requiring federal agencies to track hazardous exports by U.S. manufacturers. The new laws further require U.S. manufacturers to inform importing countries of the nature of the exported hazardous substances. There have also been international efforts to create uniform standards and procedures for hazardous technology trade.

These regulatory reforms, however, have regulated hazardous chemical trade insufficiently and have failed to protect foreign and domestic consumers from chemically tainted products, particularly in trade between developed countries and LDCs. This insufficiency was most recently demonstrated in the Alar and Chilean grape crises

---

[1] *See* Note, *Any Place but Here: A Critique of United States Hazardous Export Policy*, 7 BROOKLYN J. INT'L L. 329, 333 (1981); Weaver, *Consumer Product Panel Charged with Failing to Safeguard the Public—Tris Case Cited*, N.Y. Times, Aug. 6, 1978, at 19, col. 1; N.Y. Times, Oct. 19, 1978, at 77, col. 1.

[2] In 1977 the CPSC estimated that a total of 2.4 million garments of TRIS-treated sleepwear was exported from the U.S. after the ban. N.Y. Times, Oct. 19, 1978, at 77, col. 1. The CPSC blocked further shipments in May, 1977. *Id.*

[3] *Id.* The term "hazardous products" in this Note is meant to include all substances that pose an unreasonable risk, or may cause substantial harm as a result of a foreseeable use, to persons or the environment. This Note places particular emphasis on the hazards of pesticide trade and use for agricultural purposes.

in 1989. These incidents, discussed below, illustrate for different reasons how vulnerable domestic and imported foods are to chemical contamination.

Alar is a trade name for a chemical chiefly used in treating red eating apples.[4] Although the Environmental Protection Agency (EPA) suspected Alar to be a cancer-causing chemical as early as the mid 1970s, it failed to take decisive action.[5] The chemical manufacturer voluntarily withdrew Alar's use only after tremendous public outcry.[6]

The Chilean grape incident did not involve the sanctioned use of chemical additives, but it illustrates how inept the current regulatory procedures are in protecting consumers from tainted foods. The Food and Drug Administration (FDA) acted upon an anonymous tip and detected two Chilean grapes which had been contaminated with cyanide.[7] The FDA warned consumers not to eat imported Chilean foods while it conducted an investigation.[8] When it detected no further traces of cyanide poisoning, the FDA continued its normal inspection practice whereby only one percent of all imported food shipments are examined.[9]

The current domestic regulatory scheme is complicated by three factors: 1) the involvement of several different regulatory agencies, whose agendas, policies, and goals often conflict; 2) the legal and diplomatic questions regarding U.S. jurisdiction over corporate activity abroad; and 3) a strong industrial lobby which effectively resists increased regulations.

---

[4] Alar is a trade name for the chemical daminozide and is manufactured by the Uniroyal Chemical Company. Shabecoff, *Hazard Reported in Apple Chemical*, N.Y. Times, Feb. 2, 1989, at 1, col. 1.

[5] Shabecoff, *100 Chemicals for Apples Add Up to Enigma on Safety*, N.Y. Times, Feb. 5, 1989, at 22, col. 5; Shabecoff, *supra* note 4. The EPA admitted that attempts to ban Alar could take eighteen months to several years depending upon the amount of litigation involved. Shabecoff, *100 Chemicals for Apples Add Up to Enigma on Safety, supra*.

[6] Shabecoff, *Apple Chemical Being Removed in U.S. Market*, N.Y. Times, June 3, 1989, at 1, col. 2. Ironically, even after Uniroyal voluntarily withdrew Alar from the market in the U.S., U.S. consumers are still at risk to Alar because it is exported for use abroad and reintroduced into the U.S. in the form of food residues. *Id.*; *see infra* note 54 and accompanying text. The drop in apple sales, which prompted the withdrawal of Alar, cost the apple industry an estimated $100 million. Shabecoff, *Apple Industry Says It Will End Use of Chemical*, N.Y. Times, May 16, 1989, at 1, col. 2.

[7] Leary, *U.S. Urges Consumers Not to Eat Fruit from Chile*, N.Y. Times, Mar. 14, 1989, at 15, col. 1.

[8] Shenon, *Chilean Fruit Pulled from Shelves as U.S. Widens Inquiry on Poison*, N.Y. Times, Mar. 15, 1989, at 1, col. 4.

[9] N.Y. Times, Apr. 16, 1989, at 25, col. 4.

International and private efforts have been thwarted by similar complexities. International and private efforts are often in the form of nonenforceable policy statements regarding standards and guidelines for hazardous trade. This often creates a major impediment to meaningful changes in current chemical trade practices. As a result, international and private efforts are effective only to the extent that each participating party cooperates and enforces the established policies.

This Note assesses the particular problems associated with the trade of hazardous pesticides for agricultural use in LDCs. It first explores the external and internal incentives for pesticide use in LDCs. An overview of U.S. regulations and international efforts to bring about pesticide reform further shows that existing policies inadequately control dangerous pesticide trade. In response to these problems, this Note proposes a model for regulatory and policy reforms as a means to improve U.S. restrictions on pesticide manufacture and export. The proposed reforms would improve pesticide warnings and notice to LDCs, help enable LDCs to assess the information they receive, help ensure that LDCs will be able to regulate pesticide use, and improve the testing of foods which are contaminated with pesticide residues.

II. Pesticide Use in Developing Countries

A. *The Increasing Use of Pesticides in LDCs*

Worldwide pesticide use has increased over the past twenty years as a result of technical developments in agriculture and the promotion of agricultural development in the Third World. Since the 1970s, world pesticide sales have grown to nearly eighteen billion dollars per year,[10] with annual growth in earnings averaging approximately twelve percent.[11] Most of this growth in pesticide sales has occurred in LDCs.[12] The U.S., the world's largest producer of pesticides,[13] doubled its pesticide exports between 1960 and

---

[10] Simons, *Concern Rising Over Harm from Pesticides in Third World*, N.Y. Times, May 30, 1989, at 4, col. 1.

[11] D. Weir, The Bhopal Syndrome 21 (1987) (citing Wood, Mackenzie & Co. Agrochemical Serv., 1984). The annual growth in pesticide sales is much higher than most other manufactured products. *Id.*

[12] Simons, *supra* note 10.

[13] D. Weir, *supra* note 11, at 115.

1975.[14] In 1982, one author estimated that the Third World was responsible for about fifteen percent of the world's pesticide consumption, including up to thirty percent of the world's consumption of insecticides.[15] A chemical trade publication predicts that pesticide consumption in LDCs will increase even more as the market for pesticides in developed countries becomes saturated and pesticide companies look more and more to the LDC export market.[16]

B. *Reasons for Increasing Pesticide Use and Abuse in LDCs*

1. Use of Increasingly Sophisticated Technology in LDCs

Numerous international organizations and governments are engaged in efforts to encourage industrialization in the Third World. Both multinational development banks (MDBs) and governmental programs such as the U.S. Agency for International Development (USAID) have funded numerous Third World development projects,[17] particularly in agriculture, which accounts for approximately twenty-five percent of all loans awarded by the World Bank.[18] Intense agricultural development aimed at equipping LDCs with resources to produce foods for domestic consumption and export use is commonly referred to as the green revolution.[19] The green revolution has provided many incentives to multinational corporations (MNCs) involved in agribusiness to locate manufacturing facilities in LDCs and to target sales of their agricultural products[20] to the developing countries. Generally, MNCs have suc-

---

[14] D. WEIR & M. SCHAPIRO, CIRCLE OF POISON 5 (1981) (citing O'Toole, *Over 40 Percent of World's Food Is Lost to Pests*, Wash. Post, Mar. 6, 1977).

[15] D. BULL, A GROWING PROBLEM: PESTICIDES AND THE THIRD WORLD POOR 6 n.20 (1982). More recent estimates show that the Third World consumes 20% of all pesticides used in the world. Matthieson & Weir, *Will the Circle be Unbroken?*, MOTHER JONES, June 1989, at 20, 22. From 1974 to 1978 pesticide spending in LDCs increased from $641 million per year to $1 billion per year. PILLS, PESTICIDES AND PROFITS 7 (R. Norris ed. 1982) (citing U.N. FOOD AND AGRICULTURE ORGANIZATION, 33 TRADE YEAR BOOK (1979)).

[16] D. WEIR & M. SCHAPIRO, *supra* note 14, at 6 (citing Ayres, *Pesticide Industry Overview*, CHEMICAL ECONOMICS NEWSLETTER, Jan.–Feb. 1978, at 1).

[17] *Id.* at 50–51; *see also* Note, *supra* note 1, at 340–41.

[18] *See* D. WEIR & M. SCHAPIRO, *supra* note 14, at 50.

[19] The "green revolution" is defined as "the great increase in production of food grains (as rice and wheat) due to the introduction of high-yielding varieties, to the use of pesticides, and to better management techniques." WEBSTER'S NEW COLLEGIATE DICTIONARY 536 (9th ed. 1983).

[20] "Agricultural product" in this Note is meant to describe the entire agricultural technology associated with agribusiness. Thus, the term includes seed stock, fertilizers, pesticides, and farm equipment.

cessfully influenced government policy in LDCs, advocating agricultural programs that have provided considerable windfalls.[21]

Pesticides are one very large aspect of the green revolution. They were first manufactured during World War II for chemical warfare tactics. When the war was over, there was a considerable surplus of chemical products for which a new market had to be developed. As the domestic markets of developed countries became saturated, chemical companies emphasized sales to LDCs, taking advantage of the ongoing green revolution.[22] When regulations regarding environmental standards and employee working conditions became more stringent in enlightened developed countries in the 1960s, MNCs migrated to countries that had fewer controls over labor and technology.[23] MNCs targeted an increasing number of agricultural manufacturing facilities and products to LDCs where the MNCs could take advantage of cheap labor, cheap land, and extremely hospitable governmental policies.[24] Thus, LDCs became prime sales targets for otherwise unmarketable pesticide products.[25]

2. Agricultural Goals of LDCs

The ever-increasing technological sophistication of agriculture and the developed countries' encouragement of Third World development have drastically expanded the type and amount of pes-

---

[21] *See* D. WEIR, *supra* note 11, at 21–26. "[T]he three essential structures of power in underdeveloped societies are typically in the hands of global corporations: the control of technology, the control of finance capital, and the control of marketing and the dissemination of ideas." *Id.* at 130 (citing R. BARNET & R. MULLER, GLOBAL REACH: THE POWER OF THE MULTINATIONAL CORPORATIONS 146 (1974)).

[22] *See id.* at 22.

[23] McGarity, *Bhopal and the Export of Hazardous Technologies*, 20 TEX. INT'L L.J. 333, 333 (1985). U.S. corporations developed Third World markets for their products as a result of the increased regulations and restrictions that were imposed domestically. Comment, *United States Export of Banned Products: Legal and Moral Implications*, 10 DEN. J. INT'L L. & POL'Y 537, 539 (1981).

[24] MNCs began planning manufacturing facilities around the world. One such facility was the Bhopal pesticide plant, which manufactured the pesticide Sevin for Carbide, India, Inc., a subsidiary of Union Carbide, Inc. This facility was responsible for the leak of the toxic chemical methyl isocyanate (MIC), which resulted in two thousand deaths and thousands of injuries. In 1984 other major chemical companies had announced plans to develop manufacturing plants in Taiwan, Indonesia, Thailand, India, Pakistan, Brazil, and Colombia. D. WEIR, *supra* note 11, at 26, 60.

[25] Comment, *supra* note 23, at 539; *see also* D. WEIR & M. SCHAPIRO, *supra* note 14, at 4. Twenty-five percent of pesticides exported from the U.S. have been banned, heavily restricted, or never registered. D. WEIR & M. SCHAPIRO, *supra* at 4 (citing GEN. ACCOUNTING OFFICE, *Better Regulation of Pesticide Exports and Pesticide Residues in Imported Foods is Essential*, 43 U.S. GAO REP., June 22, 1979, at iii, 39).

ticides used throughout the world, particularly in the LDCs. Agriculture programs in LDCs emphasize the production of cash crops for export in order to help alleviate LDC national debt.[26] As a result of the marketing influences of agricultural chemical companies,[27] farmers in LDCs introduced foreign high-yielding hybrid seeds, which lacked natural resistance to indigenous pests.[28] The Food and Agriculture Organization estimates that by the year 2000 sixty-seven percent of the seeds distributed for use in Third World agriculture will be foreign hybrid varieties.[29] In addition, cash crop marketing influences are creating plant monocultures—uniform plantings of one plant variety—in the Third World.[30] Plant monocultures present a further problem because nondiverse plant populations are more vulnerable to pest infestation. Pests can destroy entire monoculture crops and cause the loss of an entire growing season. Thus, the agricultural goals of LDCs and the introduction of new hybrid seed varieties create an increasing need and dependency on greater volumes of more toxic pesticides for adequate pest control.

3. The Pesticide Treadmill

The phenomenon of continually replacing a prior pesticide with a new, more toxic pesticide is often referred to as the pesticide treadmill.[31] Part of the problem of pesticide use in the control of pests[32] is that it both promotes the development of pesticide-resistant insect strains and disturbs the natural system of checks and balances on pest populations. Certain pests, particularly insects, have exhibited an extraordinary ability to become resistant to pesticides.[33] Insects multiply frequently and in great numbers. This

---

[26] Handl, *Environmental Protection and Development in Third World Countries: Common Destiny—Common Responsibility*, 20 N.Y.U. J. INT'L L. & POL. 603, 604 (1988).

[27] D. WEIR & M. SCHAPIRO, *supra* note 14, at 44–45, 86–87. Studies indicate that chemical fertilizer and pesticide companies have bought an increasing number of seed companies. As a result, the chemical companies can influence the type of crops grown and the requirements for artificial fertilization and pest control. *Id.*

[28] Goldberg, *Efforts to Prevent Misuse of Pesticides Exported to Developing Countries: Progressing Beyond Regulation and Notification*, 12 ECOLOGY L.Q. 1025, 1031 (1985).

[29] *Id.* at 43 (citing U.N. FOOD AND AGRICULTURE ORGANIZATION, AGRICULTURE: TOWARD 2000 82 (1979)).

[30] *Id.* at 45.

[31] Goldberg, *supra* note 28, at 1028.

[32] "Pests" in this Note are meant to include all plant, animal, bacterial, viral, and fungal substances that may adversely affect the quantity and quality of agricultural produce. Insects, then, may be just one part of any given pest problem.

[33] *Id.* at 10–12.

multiplication allows for extensive genetic restructuring and potential adaptation to any given poison through natural selection processes.[34] Moreover, the imposition of artificial control on pest populations disturbs the existing, time-evolved methods of natural pest control.[35] Pesticides that are specifically applied to a given pest type may result in the pest's competitor or prey reproducing more prolifically, hence further disrupting the agricultural plants in need of protection. Proliferation of pest populations, caused by a resistance to a given pesticide or a specific targeting of one pest, result in the use of increasingly toxic pesticides that have broader impact upon the environment and the level of exposure to people and food in LDCs.

4. Lack of Standards and Guidelines for Chemical Use in LDCs

As discussed above, the U.S., which stringently restricts the domestic use of pesticide chemicals[36] and whose industries account for more than one-third of the pesticides produced in the world,[37] has very little regulatory control over pesticides produced solely for export.[38] In addition, in LDCs there is little or no regulation of pesticide imports. One source estimates that forty percent of Third World countries have no regulations governing imports, and those countries which have such regulations have insufficient funds to enforce them adequately.[39] As a result, LDCs are the dumping grounds for the most toxic pesticides available.[40] Even where LDCs

---

[34] *Id.*; *see also* D. WEIR & M. SCHAPIRO, *supra* note 14, at 8; D. WEIR, *supra* note 11, at 22–23.

[35] *See* R. VAN DEN BOSCH, THE PESTICIDE CONSPIRACY 14–35 (1978).

[36] In the U.S., the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) regulates pesticides, Pub. L. 92–516, 86 Stat. 975 (1972) (codified as amended at 7 U.S.C. §§ 136–136y (1988)).

[37] D. WEIR, *supra* note 11, at 115.

[38] FIFRA does not require pesticide registration for items produced solely for export. 7 U.S.C. § 136o. The Toxic Substances Control Act (ToSCA) excludes regulation of pesticides and substances that are produced solely for export, are marked as such, and pose no unreasonable risk to the health or environment within the U.S. Toxic Substances Control Act, Pub. L. 99–519, 100 Stat. 2989 (1986) (codified as amended at 15 U.S.C. §§ 2601–2629 (1988)).

[39] Note, *Restrictions on the Exportation of Hazardous Products to the Third World: Regulatory Imperialism or Ethical Responsibility?*, 5 B.C. THIRD WORLD L.J. 129, 148 (1985) (citing 6 INT'L ENV'T REP. (BNA) No. 7, at 296 (July 13, 1983) and SAHABAT ALAM MALAYSIA, PESTICIDE PROBLEMS IN A DEVELOPING COUNTRY—A CASE STUDY OF MALAYSIA 11 (1981)).

[40] The State Department of Mexico revealed in the early 1980s that 50% of the pesticides sold there had been mislabeled. Note, *supra* note 1, at 344–45 (citing Weir & Schapiro, *Circles of Poison: Pesticides and the Third World*, MULTINATIONAL MONITOR, July 18, 1980, at 19).

have some facility to regulate pesticide use, conflicting priorities and a lack of sufficient regulatory control disrupt pesticide programs.[41] Furthermore, some MNCs that have a stake in the sale of pesticides have proven quite effective at influencing government policies and advocating pesticide use.[42]

5. Physical and Cultural Disparity in LDCs

The physical and cultural environment determine how safely and effectively a given pesticide can be used in LDCs. Pesticides that are promoted for use in LDCs often are not matched accurately to the specific environment in which they will be used.[43] Unforeseen reactions with plant and animal species as well as the physical environment, such as climate, can make otherwise safe chemicals dangerous or ineffective.

Cultural differences such as poor education and occupational training, language barriers, and poor living and working conditions are also sources of pesticide misuse and abuse which at times result in great tragedy. Workers are given little instruction on the dangers of pesticides. Where pesticides are labeled, the instructions are often incomprehensible either because the worker is illiterate or because the label is written in a language foreign to the worker.[44] In addition, pesticides are often transferred from labeled to unlabeled containers when they are distributed to the farmer or field worker.[45] Many times, working and living conditions preclude the correct handling and use of pesticides. For example, workers often live in poor sanitary conditions, wear inadequate protective clothing, and are unable to wash off pesticide residues. Frequently, the workers' living quarters are close to pesticide-laden farm fields.[46]

C. *Effects of Pesticide Abuse in LDCs*

Pesticide use is estimated to result in 500 thousand cases of human poisoning every year.[47] Approximately five thousand of

---

[41] Goldberg, *supra* note 28, at 1030–31.

[42] *See supra* note 21 and accompanying text.

[43] *See* D. WEIR & M. SCHAPIRO, *supra* note 14, at 11–30. "In Central America, researchers calculate that pesticide use, especially parathion, is 40 percent higher than necessary to achieve optimal profits." *Id.* at 6 (citing INSTITUTO CENTRO-AMERICANO DE INVESTIGACION Y TECNOLOGIA INDUSTRIAL (I.C.A.I.T.I.), FINAL REPORT 149, 155, 161 (1977)).

[44] *Id.* at 15–17.

[45] *Id.*; D. BULL, *supra* note 15, at 37–53.

[46] *See* Note, *supra* note 39, at 134.

[47] D. WEIR & M. SCHAPIRO, *supra* note 14, at 11 (citing *Proceedings of the U.S. Strategy*

these poisonings result in fatalities.[48] Because pesticides are largely unregulated in LDCs and conditions for farm workers are grossly unsafe,[49] the occurrence of human poisonings is thirteen times the number of poisonings in the U.S., and the percentage of deaths resulting from pesticide poisoning is greater than the worldwide average.[50] Moreover, statistics regarding injury and death from pesticides in LDCs underestimate the actual number of cases. Many pesticide-related illnesses go undetected or misdiagnosed because of inadequate medical resources,[51] or because certain pesticide-related illnesses only develop many years after the initial pesticide poisoning.[52]

The health hazards caused by pesticide trade and use, however, do not only affect LDCs. Over ten percent of all food imported into the U.S. is contaminated with unacceptable levels or types of pesticide residues.[53] This circular effect, where pesticides are exported from developed countries for use in LDCs and later returned to the developed countries in the form of pesticide residues on food products, has been termed the "boomerang effect," or the "circle

---

Conference on Pesticide Management, U.S. STATE REP., June 7–8, 1979, at 33). More recent estimates indicate that the number of human pesticide poisonings could be as high as one million. *See* Matthieson & Weir, *supra* note 15, at 22.

[48] D. WEIR & M. SCHAPIRO, *supra* note 14, at 11 (citing *Proceedings of the U.S. Strategy Conference on Pesticide Management*, U.S. STATE REP., June 7–8, 1979, at 33). Again, recent estimates indicate that this number has probably increased to 20 thousand fatalities. *See* Matthieson & Weir, *supra* note 15, at 22.

[49] *See supra* note 39, at 134, 148.

[50] D. WEIR & M. SCHAPIRO, *supra* note 14, at 11 (citing interview with Dr. V.H. Freed, consultant to the U.S. Agency for International Development (Jan. 4, 1980)).

[51] D. BULL, *supra* note 15, at 37–38.

[52] Hornblower, *Firms Exporting Products Banned as Risks in U.S.*, Wash. Post, Feb. 25, 1980, at A1, col. 3. The severity of pesticide injury can range from temporary illness to more permanent injuries, including nerve damage, sterility, and vital organ disorders. *See* D. WEIR & M. SCHAPIRO, *supra* note 14, at 11–17. Certain genetic effects can result as well, causing birth and health defects in future generations. D. BULL, *supra* note 15, at 38. In fact, the export of pesticides from industrialized nations, where their domestic use has been banned or severely restricted, to LDCs has caused several severe health crises. In 1976, the pesticide Phosvel (the trade name for the chemical leptophos) was blamed for killing several farmers, creating speech impairments and severe convulsions, and resulting in the death of over one thousand water buffalo in Egypt. A United States company had never registered leptophos for use in the U.S. but had legally exported the chemical to Egypt. Another incident involving a banned pesticide, an organic mercury fungicide, resulted in four hundred deaths and over five thousand hospitalizations in Iraq in 1972. Klibanoff, *If It's Unsafe for Americans, is It Unsafe for the Third World?*, Boston Globe, Jan. 1, 1980, at A1, col. 4.

[53] HOUSE COMM. ON GOV'T OPERATIONS, REPORT ON EXPORTS OF PRODUCTS BANNED BY U.S. REGULATORY AGENCIES, H.R. Rep. No. 1686, 95th Cong., 2d Sess. 28 (1978) [hereinafter 1978 SUBCOMMITTEE REPORT].

of poison."[54] As the pesticide export market remains insufficiently regulated and the emphasis on Third World agriculture becomes more pronounced, the circle of poison will become an increasing health concern in both LDCs and developed countries.

Transboundary effects of pesticide trade and use are also evident in the degree of damage that occurs to the non-human environment. The toxic effects of pesticides are felt on numerous plant and animal species as the poison moves throughout the food chain, ultimately reaching upper-level carnivores.[55] Continued use of extremely toxic and persistent chemicals such as DDT, an organochlorine compound, can have a global effect on plants and animals, particularly endangered species, for years to come.[56]

III. Existing Regulations and Policies on the Control of Pesticide Trade

A. *United States Regulations and Policies*

1. Regulations and Policies for Pesticide Exports

Traditionally, U.S. policies regarding export of pesticides and hazardous technology have been based upon the *caveat emptor*, or "buyer beware," standard.[57] Under these policies, foreigners purchase products from the U.S. at their own risk. This policy is based upon considerations such as state sovereignty, diplomacy, economic incentive, and a Third World pro-development philosophy.[58] As international and domestic concerns regarding the trade and use

---

[54] *See* D. Weir & M. Schapiro, *supra* note 14, at 3, 28. In addition to the "boomerang effect," the manufacturing of pesticide exports within developed countries is another source of pesticide poisoning. Workers in U.S. manufacturing plants, for example, have been poisoned as a result of handling pesticides produced for the export market. Note, *supra* note 1, at 340.

[55] Goldberg, *supra* note 28, at 1027 (citing Metcalf, *Changing Role of Insecticides in Crop Protection*, 25 Ann. Rev. Entomology 219, 239–40 (1980)).

[56] *See* Pills, Pesticides and Profits, *supra* note 15, at 20–21. DDT, made infamous in Rachel Carson's book Silent Spring, is an extremely persistent pesticide. R. Carson, Silent Spring (1962). Although very effective in combating pests, particularly mosquitoes, DDT accumulates in fatty tissue and passes from one organism to the next. As a result, DDT adversely affects many organisms throughout the food chain. Birds were most sensitive to this chemical as it affected the amount of calcium deposits in egg shells. The weakened egg shells often broke prematurely, thus affecting reproduction. *See id.*

[57] Comment, *supra* note 23, at 539.

[58] *See* 1978 Subcommittee Report, *supra* note 53, at 5; Juergensmeyer, *Recent Developments in U.S. Law Affecting the International Trade of Agricultural Products and Pesticides*, 3 Fla. Int'l L.J. 27, 31 (1987).

of hazardous substances have developed, however, there has been increasing pressure to revise the buyer beware standard.

The policy statements contained in basic export agreements, legislation, and international treaties to which the U.S. is a party permit or even require a sense of stewardship toward foreign nations and the global environment. The General Agreement on Tariffs and Trade of 1947 (GATT) permits discriminatory trade policies, embargoes, and other trade restrictions that are necessary to protect human, animal, or plant life or health.[59] The Helsinki Conference on Security and Cooperation in Europe provides for the international harmonization of standards and technical regulations with a view toward solving environmental problems.[60] On a national level, the Export Administration Act of 1979[61] enables the President to prohibit or curtail the exportation of any "goods, technology or other information" to further U.S. foreign policy or fulfill its declared international obligations.[62] Treaties or international agreements to which the U.S. is a party define these international obligations.[63] Arguably, foreign policies and international obligations could support restrictions on pesticide exports that cause environmental damage in LDCs. Similarly, the National Environmental Policy Act (NEPA)[64] can be interpreted to require all governmental agencies to consider environmental consequences when planning activities domestically and abroad.[65]

---

[59] Prieur, *Environmental Regulations and Foreign Trade Aspects*, 3 FLA. INT'L L.J. 85, 86 (1987).

[60] Comment, *supra* note 23, at 547–48.

[61] Export Administration Act of 1979, Pub. L. 96–72, 93 Stat. 503 (1979) (codified as amended at 50 U.S.C. app. §§ 2401–2420 (1988)). President Bush has extended this Act, which was due to expire on September 30, 1990, by Exec. Order No. 12,730, 55 Fed. Reg. 40,373 (1990)).

[62] 50 U.S.C. app. § 2405(a).

[63] 50 U.S.C. app. § 2405(i).

[64] National Environmental Policy Act (NEPA), Pub. L. 91–190, 83 Stat. 852 (1970) (codified at 42 U.S.C. §§ 4321, 4331–4335, 4341–4347, 4361–4370a (1988)). NEPA requires "all agencies of the Federal Government" to:

> (A) utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment [and to] . . .
>
> (F) recognize the worldwide and long range character of environmental problems and, where consistent with the foreign policy of the U.S., lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment.

42 U.S.C. § 4332.

[65] Comment, *supra* note 23, at 542.

The U.S. Congress has taken some action to help combat the problems associated with hazardous trade. In 1978, largely as a response to the concerns raised in the Tris scandal,[66] the House Subcommittee on Commerce, Consumer and Monetary Affairs commenced hearings on U.S. export policies for domestically banned products.[67] At the end of these hearings, the subcommittee issued a report that called for several reforms of export regulations. These reforms included proper product labeling; prohibition of exports deemed dangerous to consumers; notification of foreign governments regarding the hazards of exported products; requirement that foreign governments acknowledge product hazards; and the awarding of technical assistance to LDCs enabling sound regulatory decisions to be made.[68] In response to the 1978 subcommittee report, Congress amended the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in 1978.[69]

FIFRA is the main U.S. regulatory statute governing the manufacture, use, and export of pesticides. The 1978 FIFRA amendments require that manufacturers label all pesticides sold for export and maintain data regarding the type of pesticide produced.[70] The FIFRA amendments prohibit from export any pesticide not registered for use in the U.S. unless the exporter notifies the foreign purchaser of the pesticide's status.[71] The amendments further provide that the EPA Administrator send notice of registration, cancellation, or suspension of a pesticide to the importing governments and "appropriate agencies."[72] Although the amendments represented a move away from *caveat emptor* to the notification or informed consent approach to export policy, the broad regulatory powers of FIFRA still did not reach pesticides produced solely for export. The amendments failed to implement the full scope of the 1978 subcommittee report.

Congress similarly amended the Toxic Substances Control Act (ToSCA) in 1976.[73] ToSCA governs the production, storage, trans-

---

[66] *See supra* note 1 and accompanying text.

[67] *U.S. Export of Banned Products: Hearings before the Subcomm. on Commerce, Consumer and Monetary Affairs of the House Comm. on Government Operations*, 95th Cong., 2d Sess. (1978).

[68] 1978 SUBCOMMITTEE REPORT, *supra* note 53, at 6.

[69] 7 U.S.C. §§ 136–136y.

[70] 7 U.S.C. §§ 136(p), 136(q), 136e, 136f, 136o.

[71] 7 U.S.C. § 136o(a)(2).

[72] 7 U.S.C. § 136o(b).

[73] 15 U.S.C. §§ 2601–2629.

port, and use of toxic substances. ToSCA, however, excludes from regulation all chemicals which are "manufactured, processed or distributed in commerce for use as a pesticide."[74] ToSCA also excludes substances produced for export which are labeled as such and which the EPA Administrator determines do not present an unreasonable risk to health or the environment within the U.S.[75] Thus, even if ToSCA were designed to regulate pesticides, it does not require specific instructions or warning labels, and the notice it requires manufacturers to provide to foreign governments indicates only that the EPA is a resource of further information on the substance.[76]

Since the 1978 subcommittee report, other attempts have been made to restrict hazardous exports, but none of the proposals have become law or substantially changed administrative procedure. In 1980, Representative Michael Barnes proposed a bill (Barnes Bill) requiring governmental licensing of all hazardous exports prior to shipping.[77] The Barnes Bill would have prohibited the granting of export licenses for hazardous substances unless they met conditions imposed by both the U.S. and the importing country.[78] This Bill, however, has never come to a House vote.

President Carter also attempted to enhance regulatory reforms of hazardous exports. Executive Order 12,264[79] was the result of a study conducted by the Inter-Agency Working Group on Hazardous Substances Export Policy. The Order required all hazardous exporters, including pesticide exporters, to notify importing countries of the regulatory status of a substance in the U.S.[80] The Order further required the exporters to provide annual information summaries to importing countries on various administrative actions banning or restricting hazardous substances and required export licenses for substances deemed to be extremely hazardous.[81] Executive Order 12,264, however, was one of the last executive acts of Carter's term of office, and President Reagan revoked the Order one month

---

[74] 15 U.S.C. § 2602(2)(B)(ii). Presumably, Congress has intended FIFRA, 7 U.S.C. §§ 136–136y, to be the exclusive means of regulating pesticides.

[75] 15 U.S.C. § 2611(a).

[76] 15 U.S.C. § 2611.

[77] H.R. 6587, 96th Cong., 2nd Sess. (1980).

[78] *Id.*

[79] Exec. Order No. 12,264, 46 Fed. Reg. 4,659 (1981).

[80] *Id.*

[81] *Id.*

after taking office in 1981.[82] Executive Order 12,290,[83] issued by Reagan, implemented the Export Administration Act[84] with a minimum regulatory burden.[85] It appears that the Reagan Administration was interested in undercutting the existing notification requirements for banned or regulated substances.[86]

More recent attempts to amend FIFRA have proven unsuccessful. In 1983, at the EPA Administrator's request, Congress extended FIFRA without revision.[87] A 1986 attempt to amend FIFRA briefly enjoyed the support of forty-one environmental, consumer, and labor organizations and ninety-two agrochemical companies.[88] This environmental and industrial alliance disintegrated due to disputes as to how much cost the chemical industry should bear for pesticide testing and quarantined stockpiles.[89]

2. Regulations and Policies for Pesticide Imports

U.S. policies and regulations governing the importation of pesticides and agricultural products contaminated with pesticide residues into the U.S. are much more strict than the export regulations. Unlike pesticide exports, pesticide imports are not exempt from FIFRA.[90] FIFRA registration requirements fully govern pesticide imports. The EPA Administrator may test imported pesticides and may refuse their admission into the country if they are unregistered, otherwise in violation of FIFRA, or injurious to health or the environment.[91]

In an effort to combat the boomerang effect, raw agricultural produce and processed foods which contain pesticide residues are regulated by FIFRA and the Food, Drug, and Cosmetic Act (FDCA).[92] The FDCA requires the Food and Drug Administration

---

[82] Exec. Order No. 12,290, 46 Fed. Reg. 12,943 (1981); Goldberg, *supra* note 28, at 1035.

[83] Exec. Order No. 12,290, *supra* note 82.

[84] *See supra* note 61 and accompanying text.

[85] Exec. Order No. 12,290, *supra* note 82.

[86] PILLS, PESTICIDES AND PROFITS, *supra* note 15, at 87.

[87] Note, *supra* note 39, at 140 (citing L.A. Times, Mar. 23, 1984, § 2 (Editorial), at 6, col. 1).

[88] Middlekauff, *Pesticide Residues in Food: Legal and Scientific Issues*, 42 FOOD DRUG COSM. L.J. 251, 264 (1987).

[89] Shabecoff, *Congress Again Confronts Hazards of Killer Chemicals*, N.Y. Times, Oct. 11, 1987, § 4, at 5, col. 1.

[90] 7 U.S.C. § 136o(a), (c).

[91] 7 U.S.C. § 136o(c).

[92] Federal Food, Drug, and Cosmetic Act, Pub. L. 75–717, 52 Stat. 1040 (1938) (codified as amended at 21 U.S.C. §§ 301–393 (1988)).

(FDA) to test food, drugs, devices, and cosmetics which are imported or offered for import into the U.S.[93] The FDA may refuse admission of imports if, among other things, they are adulterated or misbranded.[94] Foods are by definition adulterated when they contain pesticide residues in excess of the tolerance amounts established by the EPA Administrator.[95]

The EPA Administrator both sets tolerance levels for produce and processed foods and exempts certain products from tolerance requirements, applying a risk-benefit analysis that balances public health against the necessity for an adequate, wholesome, and economic food supply.[96] The tolerance limits or exemption status of foods are assessed as a result of FIFRA's pesticide registration procedures.[97] Banned or unregistered pesticides will not have established tolerance limits because their sale in the U.S. is not permitted by FIFRA. The Administrator will consider foods contaminated with any amount of banned or unregistered pesticides as adulterated and will prohibit them from admission.[98]

B. *International Efforts to Reform Pesticide Policies*

1. United Nations Activity

Since 1969, several international agencies have expressed concern about the sale and marketing of pesticides throughout the world, and especially in LDCs.[99] In 1972, the U.N. held the Conference on the Human Environment at which the General Assembly created a special body, the United Nations Environment Pro-

---

[93] 21 U.S.C. § 381(a).

[94] *Id.*

[95] 21 U.S.C. §§ 342(a), 346a(a).

[96] 21 U.S.C. § 346a(b).

[97] 21 U.S.C. § 346a(a)(1),(d), and (e).

[98] Where banned pesticides are by their nature persistent in the environment and result in some form of residue on food products even after discontinuance, the EPA has promulgated regulations which require that imported products meet certain action levels. Action levels have replaced zero tolerances so as to account for the background amounts of pesticide contamination, yet deter continued use of a banned pesticide. Tolerances and Exemptions From Tolerances for Pesticide Chemicals in or on Raw Agricultural Commodities; Policy Statement on Revocation of Tolerances for Cancelled Pesticides, 40 C.F.R. § 180 (1990).

[99] The World Health Organization (WHO) and the Food and Agriculture Organization (FAO) issued *Guidelines for Legislation Concerning the Registration for Sale and Marketing of Pesticides* in 1969. Lutz, *The Export of Danger: A View from the Developed World*, 20 N.Y.U. J. INT'L L. & POL. 629, 660 n.113 (1988) (citing WHO Doc. OH/69.3; FAO Doc. PL:CP/21 (1969)).

gramme (UNEP),[100] whose principal goal was to facilitate international cooperation for environmental ends.[101] The UNEP established Earthwatch, a group whose objective was to monitor environmental effects around the world in order to collect and disseminate scientific and regulatory data on environmental issues.[102] In 1976, the UNEP created the International Register of Potentially Toxic Chemicals (IRPTC) as part of the Earthwatch program.[103] IRPTC's function is to amass as much of the scientific and regulatory data as are available in chemical manufacturing countries and to make this information available to importing countries.[104] By 1985, the IRPTC had identified over 600 chemicals of global concern, and it had prepared detailed information on 400 of these substances.[105]

In 1977, the UNEP Governing Council issued a report recognizing the pervasiveness of unethical practices in the trade of hazardous chemicals, drugs, cosmetics, and foods.[106] This report prompted continuing efforts both in the UNEP and in the U.N. General Assembly to try to promote uniform standards and guidelines for the hazardous products trade. In 1979, the General Assembly passed Resolution 173 which urged member countries to notify importing governments of the hazards of a given product before it is exported from that country.[107] Resolution 173 also required the U.N. Secretary-General to issue a report explaining the various provisions which member countries have made to manage hazardous substances.[108] Later, in 1980, the General Assembly requested that the United Nations Commission on Transnational Corporations provide member countries with health and safety data for hazardous substances introduced into the international market.[109]

In 1982, the UNEP established the Ad Hoc Working Group of Experts for the Exchange of Information on Potentially Harmful Chemicals in International Trade, and it created the Provisional

---

[100] G.A. Res. 2997, 27 U.N. GAOR Supp. (No. 30) at 43, U.N. Doc. A/8730 (1972).

[101] Goldberg, *supra* note 28, at 1041 (citing U.N. DEP'T PUB. INFORMATION, EVERYONE'S U.N. at 167–68, U.N. Sales No. E.79.I.5).

[102] 28 U.N. GAOR Supp. (No. 25) at 45, U.N. Doc. A/9025 (1973).

[103] 31 U.N. GAOR Supp. (No. 25) at 125, U.N. Doc. A/31/25 (1976).

[104] Goldberg, *supra* note 28, at 1041–42.

[105] *Id.* (citing 15 ENVTL. L. REP. (Envtl. L. Inst.) 10,158 (June 1985)).

[106] Note, *supra* note 39, at 144 (citing UNEP Decision 85(v) (1977)); *see also* 33 U.N. GAOR Supp. (No. 25) at 55, U.N. Doc. A/33/25 (1978).

[107] G.A. Res. 173, 34 U.N. GAOR Supp. (No. 46) at 189, U.N. Doc. A/34/46 (1979).

[108] *Id.*

[109] G.A. Res. 186, 35 U.N. GAOR Supp. (No. 48) at 202–03, U.N. Doc. A/35/48 (1980).

Notification Scheme for Banned or Severely Restricted Chemicals.[110] The Working Group of Experts has since compiled a comprehensive survey of international regulations regarding the international trade of hazardous chemicals.[111] The Provisional Notification Scheme calls for the designation of national authorities in all countries to serve as clearinghouses for the mutual exchange of information dealing with hazardous substances. The General Assembly adopted the Provisional Notification Scheme in 1984 and called for the continued update of a consolidated list of banned or severely restricted products to be made available to member countries.[112]

Currently, the U.N. efforts have been aimed at creating better, more uniform control of hazardous trade through information exchange. Although these efforts have publicized the hazardous product trade and stressed the need for international cooperation, more action is needed. Most recently, the UNEP unanimously adopted a treaty dealing with the restriction of hazardous waste trade.[113] Although the General Assembly must still ratify this treaty, the UNEP Governing Council has deemed it the first step toward ending the indiscriminate trade of hazardous products and waste.[114]

2. Organisation for Economic Cooperation and Development (OECD) Activity

The OECD is an organization of industrialized nations which was established in 1961.[115] Because the OECD has the close attention of the industrialized nations, it has been effective in promoting more responsible export-import standards for hazardous trade. In the 1970s, OECD members agreed to the "polluter pays" principle, which was aimed at assessing the costs of pollution against polluters

---

[110] Goldberg, *supra* note 28, at 1042–43 (citing U.N. Doc. EP/WG.96/5 (1984) and U.N. Doc. UNEP/WG.112/2 (1984)).

[111] *Id.* at 1043 (citing *Survey of Programmes and Activities for the Exchange of Information on Potentially Harmful Chemicals (In Particular Pesticides) in International Trade*, U.N. Doc. EP/WG.96/3 (1984)).

[112] G.A. Res. 229, 39 U.N. GAOR Supp. (No. 25) at 173, U.N. Doc. A/39/25 (1984).

[113] 26 U.N. CHRONICLE 71 (June 1989).

[114] *Id.*

[115] Convention on the Organisation for Economic Co-operation and Development, Dec. 14, 1960, 12 U.S.T. 1728, T.I.A.S. No. 4891, 888 U.N.T.S. 179. The Convention came into force on September 30, 1961, with Australia, Austria, Belgium, Canada, Denmark, Finland, France, FRG, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the U.S. as parties to the treaty. *Id.*

and not the state from which the pollution has arisen.[116] In 1980, the OECD set up the Expert Group on Information Exchange Related to Export of Hazardous Chemicals.[117] The Expert Group recommended a two-step notification process by which exporting countries would provide information on exported chemicals and relevant regulatory data to importing countries.[118] The OECD has also requested that all industrial countries follow the notification procedures required in the U.S. in order to standardize trade in toxic chemicals.[119]

More recently, as with actions taken by the U.N.,[120] the OECD has been concerned with the trade and dumping of hazardous waste.[121] The hazardous waste agreements have recommended that exporting countries obtain "prior informed choice" (or prior informed consent) from the importing country before shipping hazardous waste.[122] Prior informed consent requirements in hazardous waste trade may signal a positive trend toward requiring stricter controls for all hazardous trade. The OECD will need to stress greater international cooperation among its member states and enhanced control of hazardous trade in order to truly protect importing countries and the global environment.

3. Other International Efforts

Other international efforts to control hazardous trade include the efforts by the European Community (EC) to establish a uniform hazardous trade policy among its member nations. Recent EC directives include provisions for environmental assessment of certain public and private projects, emergency assistance and accident prevention aid for industrial installations, testing and notification of new chemical substances, and regulation of hazardous wastes.[123]

---

[116] Lutz, *supra* note 99, at 655 (citing *OECD Recommendation on Guiding Principles Concerning International Economic Aspects of Environmental Policies*, OECD Doc. C(72)128 (May 26, 1972)).

[117] Goldberg, *supra* note 28, at 1040 (citing *Survey of Programmes and Activities for the Exchange of Information on Potentially Harmful Chemicals (In Particular Pesticides) in International Trade*, at 17, U.N. Doc. EP/WG.96/3 (1984)).

[118] *Id.* (citing *Report of the Expert Group on Information Exchange Related to Export of Hazardous Chemicals*, at 9, O.E.C.D. Doc. Env./Chem./MC/82.1 (1982)).

[119] D. WEIR & M. SCHAPIRO, *supra* note 14, at 68.

[120] *See supra* note 113 and accompanying text.

[121] Handl, *supra* note 26, at 617 (citing *OECD Council Decision-Recommendation on Exports of Hazardous Wastes From the OECD Area*, 142 OECD OBSERVER 28 (1986)).

[122] *Id.*

[123] *See* Lutz, *supra* note 99, at 652–53.

Directives have no binding effect on member states until they are implemented through municipal law. If a directive is unconditional, however, and a member state has failed to implement it within the specified period of time, the directive may have legal effect.[124] EC efforts, therefore, are encouraging not only because of the cooperation and uniformity of trade policy achieved among member states, but because these states may be legally bound to EC policy. EC programs, which will be enhanced as a result of unification under the 1992 unified economic system, could serve as a valuable model for future international reforms of hazardous trade.

Nongovernmental Organizations (NGOs) have also been involved in efforts to advise governments, MDBs, and MNCs. The Pesticide Action Network (PAN) International is attempting to halt the spread and misuse of pesticides through its worldwide lobbying efforts.[125] Other groups, including trade associations such as the Agricultural Chemicals Dialogue Group and the International Group of National Associations of Manufacturers of Agrochemical Products, have also tried to promote policies and guidelines for agrochemical reform.[126] Efforts by NGOs have been constrained by the fact that they are often not given standing in the international arena and must lobby individual governments and agencies. Ultimately, NGOs serve largely as catalysts for national and international policy changes.

IV. Inadequacies of Existing Regulations and Policies for the Control of Pesticide Trade

A. *United States Regulations and Policies*

1. Inadequacies of United States Export Controls

There are numerous weaknesses in the existing U.S. efforts to control pesticide abuse caused by American pesticide exports to LDCs. As stated above, U.S. policies regarding all exports have traditionally been based on the policy of *caveat emptor*.[127] Congress has amended FIFRA requiring the labeling of pesticide exports. If the pesticide is not registered for use in the U.S., the manufacturer

---

[124] *Id.* at 652 n.79 (citing Becker v. Finanzamt Munster-unnenstadt, 1982 E. Comm. Ct. J. Rep. 53, Common Mkt. Rep. (CCH) ¶ 8,789, (1982)).

[125] D. Weir, *supra* note 11, at xiii.

[126] Goldberg, *supra* note 28, at 1047–48.

[127] Comment, *supra* note 23, at 539.

and EPA Administrator must notify the foreign importer and foreign government of the pesticide's unregistered status.[128] Although these amendments are an improvement over the buyer beware policy, the effectiveness of notification is hampered by the inability of an LDC to respond properly to such notice.

Unfortunately, LDCs are not able to regulate pesticide trade and pesticide use properly under the current notification process.[129] Notification is insufficient because of the flawed administrative process employed by the U.S., the influence of MNCs over LDCs' agricultural policies, and the lack of regulatory infrastructure in LDCs.

FIFRA is inadequate in ensuring that LDCs are notified about hazardous pesticide trade. Although FIFRA provides for labeling, and in some cases for notification,[130] there is no express provision that the label be printed in the language common to the importing country.[131] Labeling of the pesticide product upon shipment from the U.S. does not ensure that a properly labeled container will reach the farm field and be available to the farm worker. Moreover, FIFRA's notification procedure, which mandates notification only if the pesticide is not registered for use in the U.S., creates a significant loophole in the regulatory process.[132] Foreign governments and foreign importers are not notified of the potential hazards, regardless of the quantities imported, of pesticides which are registered for use in the U.S.[133] Currently, the EPA has little or no information regarding the types, amounts, and destinations of pesticides exported to LDCs.[134]

Notification requirements under FIFRA also do not ensure that notice will reach the proper foreign government officials in a timely manner. Due to the multiagency involvement in pesticide trade, there is considerable confusion regarding which U.S. regulatory agency should be involved in the notification process.[135] Investigations by the Government Accounting Office (GAO) indicate that the EPA has not notified foreign governments on many occasions

---

[128] 7 U.S.C. § 136o(a)(2).

[129] *See, e.g.*, Note, *supra* note 39, at 148.

[130] 7 U.S.C. §§ 136(p), 136o.

[131] *See* 7 U.S.C. §§ 136(p), 136(q).

[132] *See* 7 U.S.C. § 136o(a)(2).

[133] *See* Comment, *supra* note 23, at 556.

[134] *U.S. Export of Banned Products: Hearings Before the Subcomm. on Commerce, Consumer and Monetary Affairs of the House Comm. on Government Operations*, 95th Cong., 2d Sess. 36 (1978) (statement of S. Jacob Scherr, Attorney for the Natural Resources Defense Council).

[135] *See* Lutz, *supra* note 99, at 643.

when it should have.[136] Furthermore, when notification is made, there is no assurance that the LDC official who has the power to act upon the notice material will be informed. Notice is often sent to U.S. embassies in LDCs, where the information remains unused.[137] Finally, the EPA often notifies foreign governments only after the pesticide has been shipped.[138] Once the pesticide transport has commenced, the LDC is often powerless to supervise or regulate the pesticide's importation and subsequent use.

The notification policy regarding the export of pesticides is ineffective when the LDCs cannot properly act on the notification. As discussed above, many LDCs lack existing regulatory policies on pesticide use and most lack sufficient administrative infrastructure for policy enforcement.[139] MNCs also exert great influence over the governments of LDCs, particularly by influencing those officials who are responsible for agricultural policies.[140] As a result, the little existing regulatory control over pesticides is often slanted in favor of the goals of MNCs.

The historically poor living and working conditions for rural people in LDCs also thwart pesticide reform. Immediate health and financial concerns usually preoccupy farm workers in LDCs.[141] They often worry more about whether they have a home and food for themselves and their families than whether they are subject to pesticide hazards. Pesticide dangers appear relatively innocuous to these farmers. The farm worker is often not educated in matters regarding pesticide use and its associated dangers.[142] Often the farm worker cannot read labeling instructions even when these are provided. Poor social conditions and repressive governments and employers also hinder farm worker unions from forming and advocating reforms.[143] In short, the general atmosphere creates a situation where the farm worker is either unwilling or unable to cope with pesticide hazards.

---

[136] Comment, *supra* note 23, at 555; *see also* Note, *supra* note 39, at 137. The EPA often has delayed notification to foreign governments until after it has taken final action on a substance. Comment, *supra*.

[137] 1978 SUBCOMMITTEE REPORT, *supra* note 53, at 21.

[138] Comment, *supra* note 23, at 552.

[139] *See supra* notes 40–42 and accompanying text.

[140] *See supra* note 21 and accompanying text.

[141] *See* D. BULL, *supra* note 15, at 146–47; D. WEIR & M. SCHAPIRO, *supra* note 14, at 15, 32; Handl, *supra* note 26, at 607.

[142] Goldberg, *supra* note 28, at 1030–31.

[143] D. WEIR & M. SCHAPIRO, *supra* note 14, at 7.

2. Inadequacies of United States Import Controls

The U.S. regulations governing the importation of pesticides are inadequate to control the introduction of pesticide residues on imported foods. Contaminated food imports often pass through the U.S. border, resulting in the boomerang effect.[144] The inadequacy of import controls is largely due to practical problems rather than theoretical ones. Theoretically, U.S. law prohibits food imports tainted with unacceptable levels and types of pesticide residues. In practice, however, this regulatory process does not work because of inadequate testing and enforcement.

An alarming amount of food entering the U.S. is contaminated with pesticide residues but is nevertheless sent along to the consumer.[145] In addition, the U.S. is importing more food from LDCs.[146] This is a particular concern since the GAO has estimated that at least twenty-five percent of all U.S. pesticides used in the Third World are banned, heavily restricted, or have never been registered for use in the U.S.[147] Contaminated foods escape confiscation at the border because of inadequate testing and lax enforcement by the FDA.[148]

Inadequate testing of pesticide residues is part of a problem inherent in regulating the chemical industry. The industry is growing quickly—new and more complex chemical compounds are being developed very fast. The EPA cannot establish analytical methods to detect chemical residues accurately, and to assess their effects on health and safety, at the pace at which new chemicals are produced.[149] This disadvantage is complicated by the fact that, under FIFRA, pesticides can be exported for use abroad without ever going through registration with the EPA.[150] As a result, the manu-

---

[144] *See supra* notes 53–54 and accompanying text.

[145] N.Y. Times, May 1, 1987, § 1, at 24, col. 6.

[146] As a result of the green revolution, many Third World countries have become food exporters. Lewis, *The Green Revolution Bears Fruit*, N.Y. Times, June 2, 1985, § 4, at 7, col. 1. The Chilean fruit export industry, for example, earned about $850 million in 1989. Nearly 65% of Chile's food exports go to U.S. markets. N.Y. Times, Mar. 16, 1989, § 2, at 10, col. 5.

[147] *See* D. WEIR & M. SCHAPIRO, *supra* note 14, at 4 (citing GENERAL ACCOUNTING OFFICE, *Better Regulation of Pesticide Exports and Pesticide Residues in Imported Foods is Essential*, U.S. GAO REP., June 22, 1979, at iii, 39. Currently, the U.S. exports 500 million pounds of pesticides per year which are not registered for use in the U.S. Simons, *supra* note 10.

[148] N.Y. Times, Dec. 4, 1986, § 1, at 23, col. 1.

[149] Approximately 20 thousand registration applications for new chemicals are reviewed by the EPA each year. Middlekauff, *supra* note 88, at 253; *see also* D. WEIR & M. SCHAPIRO, *supra* note 14, at 28.

[150] 7 U.S.C. § 136o.

facturer may not supply the EPA with the necessary analytical data.[151] In some cases, as noted above, the EPA might not even be aware of a given pesticide's existence.

Additional problems in controlling contaminated food imports result from a lack of enforcement by the FDA. Because food imports, particularly agricultural produce, are perishable, there is a compelling need to inspect and ship food to market as quickly as possible.[152] As a result, the FDA allows food to be shipped before the testing results are complete. Subsequently, if the test results indicate contamination, it is often too late to recall the food product as it usually has already reached the consumer. The FDA has also been lax in levying fines against violators of the FDCA even where the FDA has repeatedly found unlawful contamination.[153] As a result, there is no incentive for food distributors and farmers to correct pesticide abuses. When inspectors find contaminated food imports and prohibit their entry at a given border, shippers will often try another port or border entry point. The FDA currently lacks adequate communications and personnel to integrate and supervise each entry point correctly. Therefore, the shipper who attempts to penetrate the U.S. border by trial and error is often successful.

B. *International Policies*

The international attempts to catalyze increased control of pesticide trade and use have been successful in promoting awareness of pesticide abuse and in effecting information exchange. These international efforts, however, have been slow to require prior informed consent and uniform standards dictating how industrialized countries and MNCs should act.[154] Efforts by international groups

---

[151] *See* Goldberg, *supra* note 28, at 1044. The chemical industry is often reluctant to provide its own data and study methods to governmental agencies voluntarily. The industry is wary that providing data on its chemical products will result in the disclosure of trade secrets to competitor companies. *Id.*

[152] D. WEIR & M. SCHAPIRO, *supra* note 14, at 29; Note, *supra* note 1, at 339 n.67 (citing GEN. ACCOUNTING OFFICE, *Better Regulation of Pesticide Exports and Pesticide Residues in Imported Food is Essential*, 43 U.S. GAO REP., June 22, 1979, at 28–34); Molotsky, *F.D.A. is Faulted on Imported Food*, N.Y. Times, Dec. 4, 1986, § 1, at 23, col. 1.

[153] Note, *supra* note 1, at 339 n.67.

[154] Prior informed choice has not attracted sufficient support for inclusion into the UNEP or FAO guidelines. Handl, *supra* note 26, at 618 n.58; *see also* Lutz, *supra* note 99, at 656 (citing *OECD Council Recommendation on Information Exchange Related to Export of Banned or Severely Restricted Chemicals*, OECD Doc. C(84)37 (1984)).

are also largely nonbinding and nonenforceable.[155] Therefore, the success of any given program often rests upon the unanimous voluntary participation and support of individual countries.[156] Individual countries have the ultimate responsibility to carry out a specific agenda in the hope of meeting the goals of international agreements.

Other noted problems of international group efforts include a history of duplicity among actors promoting international development and pesticide reform. For example, the FAO previously has advocated the sale and use of restricted pesticides in the world market.[157] Also, development banks have notoriously funded projects without considering adverse environmental effects, both in the LDC and to the rest of the world.[158] Other international efforts have been biased due to the influence of certain industrialized countries and the active lobbying of MNCs.[159] Historically, then, conflicting goals and lack of adequate enforcement power have hindered international reform efforts.

V. A Model for Pesticide Reform Through Improved United States Regulations and Policies

A. *Export Regulations and Policies*

The current notification policies advocated by the U.S. and international groups are inadequate to bring about pesticide reforms when the LDCs are incapable of properly responding to the notice. Congress should amend current regulations, providing for closer supervision of the pesticide trade. The spectrum of recommended changes to pesticide export policy includes providing technical and monetary assistance to LDCs so that they may develop their own pesticide regulations; increasing registration requirements for pesticides produced in the U.S.; requiring exporters to receive prior informed consent from the LDC prior to the shipping

---

[155] It is not clear in multilateral agreements whether an international tribunal would hold an exporting country liable for causing harm to an importing country. Comment, *supra* note 23, at 548; *see also* Lutz, *supra* note 99, at 660–61.

[156] *See* Lutz, *supra* note 99, at 661–62.

[157] D. Weir & M. Schapiro, *supra* note 14, at 55.

[158] Note, *supra* note 1, at 340–41; *see also* Plater, *Multilateral Development Banks, Environmental Diseconomies, and International Reform Pressure on the Lending Process: The Example of Third World Dam-Building Projects*, 9 B.C. Third World L.J. 169 (1989).

[159] D. Weir & M. Schapiro, *supra* note 14, at 52–54.

of any pesticide; and requiring export licenses for all ultrahazardous pesticides produced in the U.S.

In order to correct pesticide abuses in LDCs, the U.S. and other industrialized countries should provide LDCs with technical and monetary assistance so that LDCs will be able to develop their own pesticide regulations and policies. An improved government infrastructure in LDCs will facilitate prior informed consent and export licensing effectiveness. U.S. monetary and diplomatic assistance should promote this end. With adequate regulatory facilities, an LDC will better be able to determine its own needs and limitations. Furthermore, an improved regulatory program will help ensure that LDCs use imported pesticides correctly.[160] Improved farm practices, education, working, medical, and living conditions for the farm worker will help achieve better pesticide application methods and detection of pesticide poisoning.

Improved registration requirements for all pesticides produced in the U.S., whether intended for domestic or foreign use, are needed to further pesticide reform. Procedures requiring the registration of all pesticides, requiring better information exchange between chemical companies and the EPA during testing, and establishing EPA record-keeping of pesticide manufacturing, shipping, and use are all necessary.[161] The gathering of this data will help make prior informed consent and export licensing of ultrahazardous pesticides effective and practical. Furthermore, improved registration will help improve the testing of imported foods and help avoid the boomerang effect.

Requiring prior informed consent will help ensure that foreign governments receive notification of pesticide hazards and make an informed decision regarding pest control measures before the pesticide is shipped. Prior informed consent, when linked with monetary and diplomatic assistance, which improve the regulatory infrastructure of LDCs, will effectively allow LDCs to prohibit the export of unwanted pesticides from the exporting country. By stopping the trade of pesticides at their source, LDCs would be less concerned about regulating dangerous chemicals in the farm fields.

---

[160] Goldberg, *supra* note 28, at 1046.

[161] The EPA currently reviews information on product usefulness, chemical and toxicological properties, quantity and nature of residues the product is likely to leave on food, and environmental impacts for chemicals which will be used in U.S. markets. Poliner, *The Regulation of Carcinogenic Pesticide Residues in Food: The Need to Reevaluate the Delaney Clause*, 7 VA. J. NAT. RESOURCES L. 111, 114 (1987). This information currently reviewed by the EPA should be collected and made available for all chemicals produced in the U.S. regardless of their markets.

Export licensing, the last step in the spectrum of export reforms, should be designed along lines similar to the Barnes Bill.[162] Under this procedure, a producer of a hazardous pesticide, for example those pesticides which are banned or restricted from use in the U.S., would have to obtain export licenses prior to the export of such pesticides to a foreign country. Through the licensing procedure the EPA would assess the risks and benefits associated with the pesticide's use. The risk-benefit test could be modeled after the analysis employed by the EPA in conducting registration procedures and setting tolerance levels for pesticides distributed within the U.S.[163]

Although export licensing proposals receive much criticism because of their potential interference with foreign sovereigns, the EPA can guard against these concerns by including LDCs in the risk-benefit analysis. An LDC would only be involved in decisions which affect licenses for products which are destined for that country. Licenses, and licensing decisions, would be specific to a given product and a given LDC. Licenses would also be structured to an LDC's particular needs.[164] In this way, LDCs would not interfere with each other's policies or with U.S. internal affairs.

A bilateral risk-benefit analysis would enable the EPA to assess the ability of an LDC to manage a pesticide product and allow an LDC to advocate its own needs. In the event of a dispute between the EPA and an LDC, where the LDC would like to import a pesticide and the EPA believes the pesticide is too dangerous, the EPA decision should be final. Here, the EPA should justify its unilateral decision on the basis of global environmental needs and the potential liability that may result if the exporting country is found responsible. By including LDCs in the decision-making process, the EPA would not be advocating an imposition of U.S. standards upon foreign countries, except in the most extreme cases. Rather, the U.S. would arrive at a majority of licensing decisions in cooperation with LDCs. This would ensure a comprehensive review of all relevant environmental health and economic issues.

Through these proposed reforms, the U.S. would become more actively involved in pesticide exports and would be more responsible for the actions of the American pesticide industry in international

---

[162] *See* H.R. 6587, 96th Cong., 2d Sess. (1980).

[163] 7 U.S.C. § 136a, 21 U.S.C. § 346a(b).

[164] Specific conditions in LDCs often make U.S. standards on health and safety inappropriate. Comment, *supra* note 23, at 539.

trade. These reforms would not require complete restrictions on pesticide exports. Instead, the U.S. would be seeking to correct the double standard that exists today between domestic pesticide use and pesticide use in LDCs. In the end, these reforms would help bring about more effective pest control and help meet the development needs of LDCs.

B. *Import Regulations and Policies*

Improved compliance with existing food import standards is a necessary complement to pesticide reform. Contaminated food entering the U.S. marketplace has a direct effect upon U.S. citizens. These effects are the direct result of abusive pesticide practices in international trade. Thus, there is a strong justification for increased pesticide controls in order to correct this domestic health problem. Drawing attention to the boomerang effect through improved food import practices will also draw public attention to the abuses of pesticide trade and the concern of global pesticide impacts.

In order to effect improved import restrictions, the FDA must address the practical difficulties of testing food products at the border. In theory, the FDCA and FIFRA will prevent entry of foods contaminated with unacceptable types or amounts of pesticide residues.[165] For the system to work effectively, however, the U.S. must increase its facilities at its entry points. The existing penalty and fee structure in the FDCA[166] can partially absorb the potential increased costs.

The FDA should more strictly enforce existing fines and imprisonment penalties under the FDCA[167] for their deterrent effect. The time restriction for testing imported foods is a serious problem because of the perishability of food. The FDA should increase prosecutions under the FDCA, therefore, even though tainted food has already been sent on to the consumer. Increased prosecution will discourage continued abuse of pesticide tolerance limits. In order to aid in the detection of FDCA violations, the FDA should keep better records of shippers, food distributors, ports of entry, type of pesticide contamination, and repeat offenders. In this way problematic food imports can be detected and import checkpoints can be forewarned of potential food contaminants.

---

[165] *See supra* notes 90–98 and accompanying text.

[166] 21 U.S.C. §§ 333–334(e).

[167] *Id.*

The U.S. should also improve pesticide testing and detection procedures. Improved analyses will be one result of enhanced registration requirements for all pesticides produced in the U.S. By having greater access to the manufacturing records of chemical companies, the EPA will be able to establish more thorough and chemical-specific tests for pesticide residues.

The benefits of food import controls are numerous. Import controls will help alleviate some concerns about the U.S. exerting unilateral export reforms. Concerns regarding further disruption to an already troubled U.S. export industry and the trade deficit are worsened by the view that unilateral trade reform will hurt domestic chemical companies while failing to create health and safety benefits in LDCs. Many fear that unilateral action will result in little global change in pesticide abuses because any pesticide markets vacated by U.S. industries will be readily filled by MNCs based in other industrialized nations.[168] Improved food importation standards, however, will ensure that the U.S. markets will not be available for any food products tainted with unacceptable pesticide residues. Thus, all chemical sales and agricultural practices that promote pesticide abuse and food contamination, even those originating in foreign industrialized countries, will be equally regulated by U.S. import standards.

Improved import policies will also help alleviate the problem of U.S.-based MNCs skirting domestic regulatory controls by creating foreign manufacturing and sales subsidiaries. Many MNCs are establishing facilities in LDCs in order to escape regulatory control and become more closely affiliated with foreign markets. Import restrictions on contaminated foods, however, will ensure that foods grown by abusive pesticide practices will not be made available to U.S. consumers. This will provide a disincentive to U.S.-based MNCs which are motivated by the prospect of avoiding domestic standards.[169]

Improved import controls will also provide added protection to the U.S. farmer and others associated with domestic food production in the U.S. Domestic import restrictions will likely be considered protectionist because of the apparent windfall to domestic agriculture. Although this is not an intended benefit of import reforms, it could serve as a powerful political motive for regulatory enforcement of food trade and pesticide reforms. Farming lobbyists

---

[168] Wash. Post, Feb. 25, 1980, at A1, col. 3.

[169] *See* Comment, *supra* note 23, at 545.

and politicians with strong farming constituencies will be interested in such import controls and will counter the lobbying efforts of the chemical and seed companies. Although advancement of domestic interests may be considered selfish, the result would enhance environmental goals associated with pesticide use. The direct benefits of import restrictions—health, safety, and environmental protection—justify policies which may appear protectionist.[170] Protectionist criticisms are also rebutted by the equitable nature of applying existing standards for food production and sale to both domestic and foreign interests.

VI. Conclusion

Pesticide trade and its related abuses have grown tremendously in LDCs, partly due to the green revolution and partly due to the increasing technical aspects of agriculture. The international trade of pesticides has been largely unregulated in the past, although current international efforts are being made to create more uniform and more responsible guidelines and policies. The U.S. has amended several of its regulations in order to provide some protection to LDCs through pesticide labeling requirements and notification procedures. These efforts, however, are largely ineffective because LDCs usually are incapable of responding effectively to the information provided by developed countries. The U.S. will need to enact additional regulatory reforms as part of a continuing effort by industrialized nations to take responsibility for the products they place into international markets. The advantages of regulatory reforms to the pesticide trade will result in benefits not only to the LDC, but to the U.S. consumer and the global environment.

Mark A. Kablack

---

[170] *See supra* notes 59–65 and accompanying text.