As American society approaches the final years of our twentieth century, major public policy debates continue to rage in both environmental and agricultural communities. Virtually every facet of the world’s resources expands the list of issues, providing more opportunity, either for conflict or consensus. The growing issue list includes: use and management of public lands; rights of private property owners; conversions of environmentally-sensitive land to agricultural use; loss of biological diversity; access to water supplies; known and potential contamination of water and air quality from agricultural operations; use and production of agricultural chemicals; as well as debates on actual commodities produced, such as international controversies on tobacco exports and calls for reform of the global livestock industry (Brown, et al., p. 66).

Especially in the United States, the actors involved in agricultural and environmental policy have increased substantially during the past two decades, with two major shifts. First, environmental concerns are no longer the domain of a few national environmental groups. Support for environmental programs has grown substantially since the first Earth Day celebration in 1970 when more than 20 million Americans participated in well-publicized environmental celebrations. Recent polls indicate that almost three-fourths of America believes that major efforts are needed to improve environmental quality. Environmental information of various types proliferates in the media, abounds throughout school systems, appears in industry trade journals and almost overwhelms the general public. For example, no fewer than two-thirds of the top twenty-five Public Broadcasting System programs are nature and environmental documentaries (Bliss-Guest, p. 384-392).

Secondly, action has shifted away from the national scene to state and local efforts. The increased knowledge and intense public interest in social and environmental factors associated with agriculture and environmental issues have often mobilized local citizens groups. State capitols, county courthouses and city halls provide the forum
for much of today's serious discussions of public environmental and agricultural policies. Governments work with and respond to a much wider variety of actors in policy formulation—actors whose information base is vastly different and whose values and interests sometimes contrast starkly. The resulting laws, ordinances and policies affect state agencies and elected officials much more directly than in previous years.

Rather than posing new problems, these changes provide an opportunity for various actors to bring these communities together, through mechanisms and strategies not always available at the national level. Through methods ranging from officially appointed state-level commissions to community discussion groups and town forums, state and local agricultural and environmental officials have a major opportunity. Moreover, state and local policymakers have more real responsibility to provide a common dialogue for building new policies to address the even more complex issues in agriculture and environmental protection. Fortunately, new tools and mechanisms are available with some demonstrated successes.

**Background on Agricultural and Environmental Policy Issues**

State environmental administrators, particularly in states with rural areas, confront an astounding array of agricultural and environmental issues. A typical day can include contentious litigation on landfill permits, water rights negotiations, wetlands controversies, water quality regulations and animal feedlots, and environmental emergency planning associated with agricultural chemical production. In states like Kentucky with lots of rivers and lakes, emergency spills with resulting drinking water contamination often appear on the day's list of responsibilities. However these seem to occur most frequently at night and on weekends—particularly holiday weekends.

In spite of this variety of issues, devising strategies for addressing solid and hazardous waste problems dwarfed many of the other issues confronting state environmental managers throughout the mid to late 1980s. As burgeoning landfills in metropolitan areas began to close, rural land, particularly in the southern United States, grew in popularity as potential waste disposal sites (Fritsch, p. 4).

Rural community leaders often discussed proposed municipal landfills but also faced decisions on recommendations for hazardous waste treatment facilities and incinerators as well. Stiff opposition to these facilities frequently leads to discussions on general land management issues, land use planning, and even the preservation of agricultural land.

A major environmental policy emerging from these discussions centered on state level mandates for recycling and general waste reduction policies and, in some cases, the packaging of farm chem-
icals. In the recycling arena, state governments took the lead over federal action, with a majority of legislatures enacting some sort of recycling legislation during this era. The general waste discussion moved many states with agricultural production, including Nebraska, Minnesota and North Dakota, to implement programs on recycling of farm chemical packaging.

State governments also provided the arena for confrontational discussions on other major land management issues involving agriculture and environmental policy, including the value and significance of environmentally sensitive areas, private property rights associated with these areas, and wetlands protection. During the 1992 state legislative sessions, several states enacted some version of private property rights legislation associated with environmental protection, while numerous statehouses took up the debate without finalizing new laws.

Land management policies focused mostly on use of the land, but water management historically featured water supply issues. Throughout the 1970s the water management debates centered on opposition to building major reservoirs and other impoundments. Indeed, as droughts continued in the western United States, water rights controversies remain a major concern with several states and communities. Water conservation programs and negotiations concerning alternatives to large impoundments have been features of state and local strategies for merging agricultural water needs and environmental interests.

While water issues involving agriculture and environment have historically focused on water supply controversies, issues concerning contamination from runoff have emerged as a critical state concern in recent years. Water quality problems from nonpoint sources will receive additional attention through national discussion of the Clean Water Act Reauthorization. Groundwater pollution problems continue to be documented, as does the impact of certain pesticides on wildlife.

However, states and local governments also provide the proving ground for testing the practices to address water quality. Several state and local governments, working with diverse interests, are implementing demonstration projects for runoff controls, through carefully developed programs with high levels of local input.

Air quality policy discussions have focused on dust and emissions from farming operations, odor problems and concerns. For example fertilized soils emit two to ten times as much nitrous oxide as unfertilized soils and pastures. Livestock and fertilizers account for 80 to 90 percent of ammonia emissions. Air toxic issues, associated with the use of chemicals in agricultural production, have provided additional attention to agricultural and environmental policies.

As the national Community Right to Know laws enabled citizen
groups to learn about toxic emissions from chemical production and other manufacturing operations, local interest in reducing toxic use in the work place and the environment has increased dramatically. Numerous states and some local governments have implemented toxic use reduction programs, more stringent than national standards, addressing citizen concerns about toxic air and water emissions from these operations, many associated with agricultural production (U.S. Environmental Protection Agency, p. 128-133).

An additional overriding issue discussion emerging from intense examination of agriculture and environmental policy is the question of whether today's agricultural practices are ecologically sustainable. A basic reexamination of thinking about the relationship between environmental and agricultural policy issues is underway. Farmers are increasingly aware of the environmental toll taken by conventional farming practices. Some farmers, encouraged by scientists, public interest groups and others, are using a variety of alternative practices that help reduce pollution and maintain farm resources.

**Major State Environmental Agency Changes**

As the general public became more interested in environmental issues and activism became more decentralized around the nation, an additional major trend affected agricultural and environmental policy development. Because of national emphasis on decentralization of federal programs throughout the 1980s and 1990s, the nation's environmental laws have been delegated slowly to state governments. Throughout almost all the country, state environmental agencies, rather than the centralized offices of the U.S. Environmental Protection Agency (EPA), implement the national Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and related environmental enforcement programs.

Although this shift may appear insignificant in association with agricultural policy, the change is demonstrated by growth in funding for state environmental enforcement and increasing numbers of state-level inspectors and environmental attorneys which has resulted in the fines and penalties associated with state environmental regulatory programs. Essentially, combining the environmental enforcement shift to state governments with increased numbers of local activist groups provided numerous additional opportunities for more local input, discussion and even litigation associated with environmental and agricultural issues.

In addition, many local and grassroots groups are rejecting viewpoints of major national environmental organizations, calling for more stringent approaches and, usually, less negotiation and mediated environmental laws and regulations. America's grassroots environmental and social justice organizations have often linked
their interests and concerns with those in other nations, focusing on concerns with transnational corporations and environmental issues associated with international trade policies. For example, the Minnesota-based International Institute for Sustainable Agriculture, at the recent United Nations Conference on Environment and Development, announced their own global conference on sustainable agriculture to be held in June, 1993. The conference will feature a citizen-based international discussion on alternatives to current agriculture production in both the developed and developing nations.

In summary, the number of actors in agriculture and environmental policy continues to grow dramatically, while also increasing in diversity, information and access to resources. The increases call for more participatory, diverse and decentralized strategies for policy development and implementation.

**Challenges and Strategies**

Farming in industrialized countries has successfully produced food and fiber, yet it also has caused environmental degradation, creating serious problems for farmers (such as soil erosion) and, even worse, off-farm problems (such as groundwater contamination). These problems, epitomized by a concern that current agricultural practices are not sustainable, have led many agricultural scientists, economists and farmers to rethink conventional farming practices. What seems to be emerging is a range of environmentally beneficial farming practices—a synthesis based on both old, proven ideas and a new understanding of natural nutrient cycles and ecological relationships (Hammond, p. 99). Throughout the country, new relationships are being forged among various groups, including universities, public interest groups, farmers and community leaders. State and local governments are challenged to work with the wide variety of interests and bring the actors together in discussions which result in meaningful actions and strategies to address identified problems.

Several programs have worked diligently to address these concerns. For example, in Minnesota the legislature enacted a state-wide water supply planning law, requiring each county and community to develop a plan for addressing water quality. Since this is a highly agricultural state, government officials worked with a wide variety of groups at the local level to develop a dialogue and implement plans that received a high degree of public involvement and input.

Handling conflicts is a frequent issue confronting state and local governments attempting to bring together diverse groups. Some governments and universities have worked to implement conflict resolution training into the policy development process in order to give government officials and others the tools to provide for meaningful discussions by all the parties.
New organizational structures and institutional arrangements often are needed. In Puget Sound an intrastate regional approach provides for oversight and local government involvement. The Puget Sound Basin in western Washington state has worked on a nonpoint source control program as an important part of their water planning. A nomination process guided the process for identifying all involved parties and the state provided direct assistance for preparing guidelines for watershed management.

The United States' and Canada's Great Lakes Water Quality Agreement provides the model for bringing together an extremely diverse group of interests within a sometimes complex organizational structure to develop consensus on environmental and agricultural issues. Other regional efforts are evolving as well, including the Chesapeake Bay initiative and the Gulf of Mexico effort.

In summary, strategies for agricultural and environmental policy development and implementation require extensive planning and involvement of a community of interests more diverse than ever before. National policymakers must clearly consider the high level of intense local and state activity in the policy areas.

Additionally, governments must look outside their own structure for interest, resources and sometimes even the training and information to bring together a consensus group. A critical element in merging agricultural and environmental policy development, aside from the overriding debate on the sustainability of current agricultural practices, includes training and implementation of processes, as well as the institutional structure, to address conflict. National, state and local public policy groups, university and college programs, as well as individual community leaders can serve the catalyst role, sometimes the critical resource needed.

REFERENCES