

PROMOTION OF SUSTAINABLE DEVELOPMENT ALONG THE BORDER: CHALLENGES AND ACCOMPLISHMENTS

As stated in the *1996 U.S.-Mexico Border XXI Program: Framework Document (Framework Document)*, the goal of Border XXI is to “promote sustainable development in the border region by seeking a balance among social and economic factors and the protection of the environment in border communities and natural areas” (I.1). Border XXI seeks to achieve this goal by encouraging activities that meet the needs of the present without compromising the ability of future generations to meet their needs. Although Border XXI has made notable advances, there have been challenges to achieving the goal on both the overall programmatic and the workgroup levels. These challenges include: (1) lack of recognition of the range of elements that impact sustainability; (2) limitations of workgroup activities; and (3) insufficiency of efforts to engage local-level participants.

The first challenge was to recognize the broad range of elements that impact sustainability. The Border XXI framework was established on the assumption that the organizational structure that was being created, the strategies that were to be implemented, and the workgroup activities that were to be initiated all would contribute to the promotion of sustainable development. After the first few years of implementation, it became apparent to the governments of both countries that these elements, while an important part of the equation, would not alone lead to sustainable development in the border region.

A host of environmental, economic, and social factors contribute to sustainable development. Therefore, to achieve that goal requires an integrated, multifaceted approach to considering those factors and managing resources over the short, medium, and long terms. The strength of the Border XXI Program is that it focuses primarily on addressing the environmental and natural resources elements of sustainable development, as well as social factors as they pertain to environmental health. It also provides a point of

Progress Toward the Goal and Implementation of Key Strategies



departure for economic and technological considerations by promoting pollution prevention and the use of clean technologies. However, the scope of the current program does not account for all the factors that contribute to sustainable development in the border region.

One of the challenges of promoting the concept through workgroup activities is that those activities address only certain elements of sustainable development. Part of the approach to sustainable development implies solving existing problems. To that end, the workgroups have focused much of their efforts on analyzing and remediating environmental, natural resource, and public health problems resulting from previous unsustainable practices. However, sustainable development implies the creation of strategies that both prevent replication of existing problems in the future and anticipate entirely new problems. The relatively narrow scope of the program and the severity of existing environmental conditions have limited the success of the workgroups.

While local participation would enable the two federal governments recognized in the *Framework Document* to address sustainable development, the

progress of efforts to engage border communities has been slow. Since the principal actors in Border XXI, the federal and state environmental agencies, have limited authority and, in many cases, lack local-level perspective, it was difficult to promote sustainable development in the early days of the program. It has been only recently that the federal governments

have started to join with individual communities to discuss the concept in terms of local-level priorities and conditions and to determine how best to work in partnership with local entities to approach sustainability on a community-by-community basis.

While the U.S. and Mexican environmental agencies have limited authority in local land use and planning activities, they do have a central role in convening local experts and authorities, facilitating dialogues on issues related to sustainability, and assisting local and state governments in building technical and human capacity. To those ends, several

activities have been initiated recently under the Border XXI Program to promote sustainable development in the border region. A summary of those activities follows.

Border Institutes

Held in Rio Rico, Arizona in December 1998, Border Institute I provided a forum for dialogue on the future of the border region in terms of economic, demographic, and ecological problems and trends related to the sustainability of the border region. A summary report of the meeting, titled *The U.S.-Mexican Border Environment: A Road Map to a Sustainable 2020*, was published by the Southwest Center for Environmental Research and Policy (SCERP) and is available on SCERP's web site at www.scerp.org. Border Institute II, cosponsored by SCERP, the U.S. Environmental Protection Agency (EPA), and the Border Trade Alliance (BTA), was held in April 2000 in Rio Rico. The event focused on identifying actions and policy alternatives for achieving a healthy environment in border communities. For more information, e-mail the Institute for Regional Studies of the Californias at San Diego State University at irsc@mail.sdsu.edu.

Achieving Sustainability Conference

Held in Brownsville, Texas in March 1999, the conference Achieving Sustainability on the U.S.-Mexico Border underscored the commitments of the United States and Mexico to work together to ensure a sustainable future for the border region, while emphasizing the crucial role of local stakeholders in the process. The results emphasized that the true impetus for successful change will come from the local level and that long-term thinking and binational planning are needed to address the challenges confronting the region.

The National Town Meeting for a Sustainable America

Held in Detroit, Michigan in May 1999, the National Town Meeting focused in part on issues of sustainability in the U.S.-Mexico border region. Actual examples of how sustainable development has moved from the drawing board to reality in the border region were highlighted at the event.

Border XXI National Coordinators Meeting Workgroup Workshops

Held in May 1999 in Ensenada, Baja California, the workshops were conducted to familiarize Border XXI workgroup members with the principles of sustainable development and to encourage workgroups to adopt concepts of sustainability in their projects.

Sustainable Development Community Workshops in Mexico

Mexico's *Secretaría de Medio Ambiente, Recursos Naturales y Pesca* (SEMARNAP, or Secretariat of Environment, Natural Resources, and Fisheries) has conducted a series of sustainable development workshops along the border. The workshops are designed to provide local planners and city officials with a forum for building consensus on what sustainable development means for their communities. The workshops included facilitated breakout discussions and a series of exercises related to the following themes: (1) Population, Housing, and Land Use; (2) Urban Development, Infrastructure, and Equipment; (3) Industry, Transportation, and Contamination; and (4) Natural Resources, Water, and Soils. The members of each breakout group identified and quantified the problems most relevant to their communities. After analyzing the impact on key areas, each group developed a prognosis for the future of the community, as well as a set of short-, medium-, and long-term recommendations for the local, state, and federal governments. The approach helped participants focus on local-level implications of development and reinforced their prominent role in shaping the future of their communities. The results of the workshops were varied. In some cases, workshop findings were included in municipal development programs and directly influenced the municipal planning process. Other workshops resulted in the establishment of municipal sustainable development advisory committees made up of local authorities and community members.

Border Environment Cooperation Commission/North American Development Bank Sustainable Development Criteria

EPA and SEMARNAP recognize the efforts undertaken by the Border Environment Cooperation Commission (BECC) and the North American Development Bank

(NADB) in assisting states and local communities, other public entities, and private investors in the promotion of sustainable development. The BECC has adopted sustainable development criteria to evaluate infrastructure projects and has integrated those principles into an extensive public outreach and participation program. As members of the BECC board, EPA and SEMARNAP have worked with the institution to develop the criteria and other policies that promote the concept. The effort has helped raise public awareness of the need for developing environmental infrastructure in a way that will support sustainable growth.

The Seven Principles of Environmental Stewardship

EPA, SEMARNAP, the BECC, and the U.S.-Mexico Chamber of Commerce (USMCOC) have begun to involve industry as a positive actor in bringing about sustainable development through good corporate citizenship. The four organizations agreed to promote voluntary industry adoption of the *Seven Principles of Environmental Stewardship for the 21st Century (Seven Principles)*. The section in this chapter on Public- and Private-Sector Cooperation and Appendix 3 provide more details about the *Seven Principles*.

Recommendations

As a result of the experiences gained, the Border XXI participants have recognized that much more remains to be done to promote sustainable development. Various efforts undertaken, largely in the past two years of the program, have stimulated dialogues about the issues and have resulted in the creation of important partnerships. Future efforts should be aimed at creating additional partnerships that facilitate the development of more comprehensive, local-level approaches to sustainable development. Those efforts could benefit from: (1) building on SEMARNAP's approach of working at the local level by examining local efforts in the context of binational approaches and the interdependence of border communities; (2) expanding on the strategies of public participation and decentralization to achieve true community empowerment in decision making; (3) addressing the relationships among the environment, natural resources, and human health and such other factors as the economy, edu-

cation, health, land use, municipal management, and energy use; and (4) employing those factors in the development and implementation of Border XXI workgroup activities.

BORDER XXI STRATEGIES

The *Framework Document* outlines three strategies for achieving the Border XXI Program goal: (1) ensuring public involvement; (2) decentralizing environmental management through state and local capacity building; and (3) improving communication and cooperation among federal, state, and local government agencies.

ENSURE PUBLIC INVOLVEMENT

As stated in the *Framework Document*, the first strategy is to “ensure public involvement in the development and implementation of the Border XXI Program . . .” (Chapter II, Page 1 [II.1]). As was further stated, “Both governments aim to engage the creativity, ideas, and energy of border residents in the evolution and ongoing implementation of the long-term objectives . . .” (II.1). Through the Border XXI Program, the governments of the United States and Mexico have notably enhanced the binational public participation experience. The program has provided a context for both governments to jointly explore mechanisms for engaging border communities in dialogues about environmental and natural resource issues. In particular, for Mexico’s federal government, the binational public participation approach of Border XXI has presented an important model for providing forums for exchanging ideas with Mexico’s border residents.

During the first 10 years of the *La Paz Agreement*, there was little public participation in the development of border priorities.¹ When the *Integrated Border Environmental Plan (IBEP)* (1992–1994) was implemented, the lack of formal public input detracted from its public support. IBEP projects and initiatives were criticized for not reflecting the priorities of border residents. Through those experiences, both federal governments recognized the importance of public involvement in the planning and implementation of border environmental initiatives. A public participation element was

¹ The *Agreement between the United States of America and the United Mexican States on Cooperation for the Protection and Improvement of the Environment in the Border Area* was signed in La Paz, Baja California Sur, Mexico on August 14, 1983, and entered into force on February 16, 1984.

built into the framework of the subsequent phase of border planning, Border XXI, to ensure a role for the public in the development and implementation of border environmental programs.

During the development of the *Framework Document*, public meetings held in the border region proved to be an important opportunity for the governments to listen to the concerns and recommendations of border residents. In the United States, more than 20 public meetings were held in border cities during 1995 and 1996. In Mexico, four regional and several state-level public meetings were held during that same time period. In addition, three binational meetings were hosted by the two federal governments, one in Tijuana, Baja California; one in Nogales, Arizona; and one in Ciudad Juárez, Chihuahua. The historic meetings provided the first forums for border residents to engage in dialogue with officials of both countries at the same time. The meetings followed the example set by the BECC in 1995, when the BECC initiated public board meetings that allowed public comment and participation and established criteria that mandated public support for BECC-certified projects.

The meetings were held in two sets. The first set was held before the development of the draft *Framework Document*, to allow public input even before the two governments put pen to paper. After the draft document was

published, the second set of public meetings was held to again solicit input. In addition, the two governments accepted written comments by letter and by e-mail. The *U.S.-Mexico Border XXI Program: Comment and Response Summary Report* (June 1997) was published in response to the major comments received on the draft *Framework Document*. The comments also were considered in the development of the final *Framework Document*. On the basis of the public input, three workgroups, the Natural Resources Workgroup, the Environmental Information Resources Workgroup, and the Environmental Health Workgroup, were added to the Border XXI Program.

Public Involvement Objectives and Activities

Seven information management, reporting, and communication objectives for enhancing public participation were outlined in the *Framework Document* (Table 2-1). This section of the report describes progress made in achieving those objectives and highlights additional public outreach activities.

Objectives 1 and 2: Provide Information on Border XXI Plans, Progress, and Contacts

The nine Border XXI workgroups develop annual implementation plans for the upcoming year and summaries of

Border XXI Public Involvement Objectives

- Make available Border XXI annual implementation plans and progress reports; hold public forums along the border every two years (in conjunction with the progress report); compile and summarize public input.
- Provide a directory of Border XXI contacts to allow ongoing direct communication between the public and members of the Border XXI workgroups.
- Form binational subworkgroups to provide regional perspectives to Border XXI workgroups; explore additional channels for public input, such as existing federal and state border offices.
- Engage the assistance of the Good Neighbor Environmental Board (GNEB) (United States) and the *Consejo Consultivo para el Desarrollo Sustentable, Región 1* (CCDS, or Region I Advisory Council for Sustainable Development) (Mexico) in the implementation of Border XXI.
- Improve access to environmental information through: establishment of SEMARNAP public environmental information centers in the border region; establishment of public computer workstations with Internet access and toll-free Border XXI information telephone lines at EPA border liaison offices; and development of a binational information and data management directory.
- Support academic institutions, including SCERP and the *Fundación de México-Estados Unidos para la Ciencia* (FUMEC, or Mexico-United States Foundation for Science).
- Publicize the availability of grants to further Border XXI objectives, including the Commission for Environmental Cooperation's North American Fund for Environmental Cooperation.

The objectives listed above may have been paraphrased from the Framework Document. For a more detailed description of the objectives, please refer to that report. The objectives described in this section may be referred to by number. The numbers are intended for ease of reference only and do not imply order of importance.

Table 2-1

accomplishments during the previous year. Public meetings also are held periodically to update border communities on workgroup objectives and projects. Implementation plans have been published for 1996, 1997–1998, 1999, and 1999–2000. Copies were made available to stakeholders on both sides of the border, and the complete documents, or information about how to obtain them, were posted on the Border XXI web site at www.epa.gov/usmexicoborder and distributed through the BECCNet and the U.S.-Mexico Border listserv. In those documents, as well as others, including the fact sheets and compendium of projects, information about how to contact Border XXI staff is provided.

Objectives 3 and 4: Develop Additional Channels for Input to Border XXI

Binational subworkgroups have been created to facilitate dialogue at the regional and local levels or to address specialized border-wide topics. Some of the subworkgroups have been meeting every 6 to 12 months to provide project updates, discuss policy and implementation issues, and engage stakeholders in overall workgroup planning. Appendix 4 provides a list of the binational regional subworkgroups and border-wide initiatives established under the Border XXI Program.

Border XXI has sought additional input on border needs and development through interaction with the federal advisory councils of both governments, the Good Neighbor Environmental Board (GNEB) and Mexico's *Consejo Consultivo para el Desarrollo Sostenible, Región 1* (CCDS, or Region 1 Advisory Council for Sustainable Development). In addition to meeting regularly with Border XXI representatives and publishing annual reports about the border, the boards have provided EPA and SEMARNAP with assessments of and recommendations for Border XXI Program implementation. Those assessments and recommendations are provided in the addenda to this report.

The GNEB and the CCDS have met twice to address binational environmental issues and to exchange ideas about improving environmental education, improving communication and coordination among all border stakeholders, and enhancing the participation of state and local and private entities. The two federal advisory councils formed binational workgroups to discuss areas of joint interest, includ-

ing: (1) the environment; (2) natural resources; (3) environmental infrastructure; and (4) environmental education and public participation. Although they were not developed expressly for Border XXI, the specific issues and recommendations identified by the workgroups during the second joint GNEB/CCDS meeting in Reynosa, Tamaulipas in November 1998 have helped advance the Border XXI process by serving as additional input on parallel areas of interest.

Objectives 5 and 7: Improve Access to Information

The public has electronic access to environmental information through the following mechanisms: (1) computer workstations that have been installed in the El Paso, Texas and San Diego, California border liaison offices (see below) and (2) the Border EcoWeb, an Internet site that provides links to existing border information. Border EcoWeb is described more fully in the chapter on the Environmental Information Resources Workgroup. By visiting the border liaison offices or dialing a toll-free number (800-334-0741), the public can obtain documents and speak directly with staff. Information about EPA grants available to border communities is provided through the venues listed above, as well as through seminars and direct mailings. In addition, EPA and SEMARNAP have produced Border XXI fact sheets in English and Spanish that highlight the objectives and key projects of each of the nine workgroups. SEMARNAP, in cooperation with the *Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM, or Monterrey, Nuevo León Institute of Technology and Advanced Studies)*, has also published the *Reporte del Estado Ambiental y de los Recursos Naturales en la Frontera Norte de México* (Report on the State of the Environment and Natural Resources in the Northern Border of Mexico). Additional details about the report are provided in chapters 3 (U.S.-Mexico Border XXI Workgroups: Key Accomplishments) and 8 (Environmental Information Resources Workgroup).

Objective 6: Support Academic Institutions

In cooperation with a wide range of border stakeholders, SCERP, a consortium of five U.S. universities and four Mexican universities, is dedicated to conducting applied research to address border environmental problems. SCERP institutions are involved in a variety of solution-oriented, multi-

disciplinary programs focused on studying transboundary watersheds and air basins and pollution prevention, and on completing border community and tribal water infrastructure assessments. From 1996 to 1999, EPA provided SCERP with roughly \$10.5 million to support those activities. EPA also has provided \$3.5 million since 1997 to the *Fundación de México-Estados Unidos para la Ciencia* (FUMEC, or Mexico-United States Foundation for Science) to: (1) assess wastewater treatment training and certification programs, (2) evaluate the *Agua Limpia en Casa* (Clean Water in Homes) program in border communities, (3) diagnose the discharge of industrial wastewater into sewage systems, and (4) study border area aquifers. Appendix 5 contains additional details about EPA's resource commitments.

The EPA Border Liaison Offices

The EPA El Paso and San Diego border liaison offices, established in 1994, serve as the principal vehicles for providing outreach on the Border XXI Program and facilitating access to environmental information in border communities. In 1995, the first "satellite" office was opened in McAllen, Texas to help address environmental issues in the lower Rio Grande Valley. The office was relocated to Brownsville in 1997. The border offices support a wide range of environmental education activities and serve as the conduit for public input to Border XXI workgroups and EPA policy makers. A number of mechanisms have been initiated through the border offices to enhance involvement and access to information. Appendix 6 contains detailed information about all activities conducted by the border offices, including their public information centers, public meetings, fact sheets, and video.

Environmental Indicators Seminars

SEMARNAP hosted six public meetings in 1997 to discuss the proposed indicators for each Border XXI workgroup. The purpose of the meetings was to provide a forum for border residents, as well as representatives of state and local

governments, the private sector, and academic institutions, to offer their perspectives on the proposed indicators before the indicators were finalized. In addition, in 1998, after the *1997 United States-Mexico Border Environmental Indicators Report (1997 Indicators Report)* was published, SEMARNAP organized follow-up workshops in each of the six Mexican border states.

Sustainable Development Community Workshops

One important mechanism for public participation in the Mexican border municipalities has been the sustainable development workshops organized by SEMARNAP that were mentioned in the first section of this chapter. At the eight workshops (Table 2-2), representatives of the various community sectors participated in discussions focused on identifying:

(1) the significance and application of sustainable development at the local level and (2) the steps necessary to ensure that community development advances in a sustainable manner. The workshops provided a broad framework for public involvement, one in which community members participated in focus groups to gain a better understanding of

SEMARNAP Sustainable Development Community Workshops	
City	State
Tijuana	Baja California
Nogales	Sonora
San Luis Río Colorado	Sonora
Ciudad Juárez	Chihuahua
Piedras Negras	Coahuila
Linares	Nuevo León
Reynosa	Tamaulipas
Matamoros	Tamaulipas

Table 2-2

urban environmental problems and trends, as well as sustainable solutions.

Plans are underway to expand the workshops to the binational level in 2000. The workshops will be presented in at least two pairs of sister cities as a pilot project for applying the workshop model to transborder communities.

Challenges and Limitations

Although there was considerable public input into the *Framework Document*, involving the public in the implementation of Border XXI remains a challenge. While there are opportunities for the public to participate, those opportunities are limited and infrequent. Another drawback is the lack of a well-defined process for involving the public in workgroup activities. For example, there is no "feedback" mechanism for the workgroups or the National Coordinators (EPA and SEMARNAP serve as National Coordinators) to provide responses to

public comments or suggestions. One result is that the public has not had input to the annual implementation plans.

Notwithstanding these challenges, progress on involving the public, while slow to start, has gained momentum, particularly in the past two years of Border XXI. EPA's border liaison offices in San Diego and El Paso now serve as hubs for providing information about border environmental issues and soliciting feedback from the public. In addition, the annual National Coordinators meetings and some workgroup meetings, which, in the early years of the program, were closed, are now open and include public participation sessions. Moreover, some of the workgroups (Air, Hazardous and Solid Waste, Environmental Information Resources, and Cooperative Enforcement and Compliance) have held open sessions to enhance public participation.

Recommendations

Despite the challenges, it is clear that the public should be more extensively involved in the Border XXI Program. Outreach could be made more effective by: (1) providing more opportunities for public input to Border XXI; (2) revising the structure of the workgroup and National Coordinators meetings to include a well-defined public participation component; (3) establishing stronger links between the workgroups and the government representatives in charge of conducting outreach and soliciting input from border communities; (4) developing partnerships with border state agencies to strengthen and facilitate public outreach; and (5) expanding and diversifying environmental information activities to better inform the border public about Border XXI.

DECENTRALIZE ENVIRONMENTAL MANAGEMENT THROUGH LOCAL CAPACITY BUILDING

The second strategy of the Border XXI Program, as identified in the *Framework Document*, is to "build capacity and decentralize environmental management in order to augment the participation of state and local institutions . . ." (II.1). The Framework Document further states, "The success of Border XXI is contingent upon broad-based participation by federal, state, and local governments, Indian tribes, international institutions, academia, nongovernmental organizations, the private sector, and border citizens and communities" (I.4). Sustainable development is contingent upon how

such local issues as population growth, availability and cost of water, and use of natural resources are addressed. Consequently, state, local, and tribal governments should have the resources, authority, and technical capacity to confront environmental, natural resource, and economic issues.

The Border XXI Program has worked to build the capacity of state, local, and tribal governments, as well as that of other border stakeholders, through: (1) technical assistance and training; (2) funding; and (3) strengthening of partnerships and sharing of information. In the United States, emphasis has been placed on building the capabilities of federally recognized tribes, especially as they are related to infrastructure needs and operations. In addition, capacity-building efforts under the Border XXI Program have extended to such areas as environmental education, environmental justice, and industry participation.

Building Capacity through Technical Assistance and Training

The following projects illustrate some of the capacity-building efforts of the Border XXI Program in the areas of technical assistance and training. The list below is not comprehensive. Additional information about those activities and others is provided in the individual workgroup chapters.

- Through an amendment to the *La Paz Agreement*, the Joint Advisory Committee (JAC) for the Improvement of Air Quality in the Ciudad Juárez, Chihuahua-El Paso County, Texas-Doña Ana County, New Mexico Air Basin was created to provide locally-based recommendations to the Air Workgroup on how to manage air quality in the region.
- The Contingency Planning and Emergency Response Workgroup has assisted cities along the border in the development of six sister city contingency plans, which detail coordinated, standard procedures for responding to emergencies involving hazardous substances. The workgroup also has developed the Computer-Aided Management of Emergency Operations (CAMEO) system in Spanish and has provided several training opportunities for Mexican officials.
- The Hazardous and Solid Waste and Cooperative Enforcement and Compliance workgroups have enhanced local capacity by developing a range of cooperative training programs. Their efforts have included

training state and local officials on various aspects of environmental enforcement and sponsoring compliance seminars for transporters of *maquiladora* hazardous waste.

- The Environmental Health Workgroup has helped increase local capacity by developing several health education programs and a health resource data base to maintain quality health care and respond to environmental health emergencies in the border region.
- The Pollution Prevention Workgroup has an extensive technical assistance and capacity-building program through which technical conferences and workshops for industry have been offered. Manuals targeted on pollution prevention in specific industries also have been produced.

Building Capacity through Funding

The following projects illustrate some of the capacity-building efforts of the Border XXI Program that have been achieved through funding assistance. Additional information about these, as well as other, funding activities is provided in the individual workgroup chapters.

Building Capacity through BECC/NADB Assistance

Both governments recognize and support the capacity-building efforts of the BECC and the NADB to incorporate local decision makers in the development of projects. In cooperation with the Water Workgroup, the BECC has provided substantial technical assistance related to the development and funding of water, wastewater, and solid waste projects. The efforts are aided by BECC's Project Development Assistance Program (PDAP), created with \$20 million of EPA grant funds that can be used only for water and wastewater projects. Through this program, the BECC has approved \$15.6 million to assist 79 communities. Solid waste assistance, using the BECC's operating funds, amounted to more than \$1 million. The NADB has approved \$11.6 million to assist 60 communities through the Institutional Development Cooperation Program (IDP). Appendix 5 contains addi-

tional details about EPA's resource commitments. (The figures cited above are current as of February 2000.)

Building Capacity of States and Municipalities in Mexico

In accordance with the framework of the Border XXI Program, the World Bank's *Programa Ambiental Frontera Norte de México* (PAFN, or Environmental Program for the Northern Border of Mexico) has helped strengthen the capacity of the six Mexican border states and 10 of the municipalities in those states. From 1994 to 1999, the PAFN provided almost \$43.6 million pesos (more than US\$4.6 million) in equipment and other needed resources and assistance to the border states and municipalities. Following are some of the more notable achievements of the program:

- The PAFN has helped increase local-level capacity to evaluate pollution control by supporting basic training in such areas as: (1) application of methodologies and diagnostic techniques; (2) development of environmental measurements; (3) improvement of environmental quality; and (4) conservation and management of natural resources.
- The PAFN has helped increase the ability to process information related to environmental activities and programs.

As a result, the time required to respond to environmentally related incidents has been reduced. In addition, communication among the sectors involved regarding environmental matters has improved significantly.

- The PAFN has helped establish and equip laboratories in Tamaulipas and Coahuila with environmental monitoring units. In a similar effort, the program has helped purchase and install units in Chihuahua, Baja California, and Nuevo León.

Although much remains to be done, the PAFN, in its few years of operation, has helped link the efforts and resources of various levels of government and has proven to be an effective mechanism for building the capacity of Mexico's northern border states and municipalities. Appendix 7 contains additional details about Mexico's resource commitments.

PAFN Assistance to Mexican Border States and Municipalities		
State	Municipalities	Percent
Baja California	Mexicali, Tijuana	11.7%
Chihuahua	Ciudad Juárez	25.5%
Coahuila	Ciudad Acuña, Piedras Negras	20.4%
Nuevo León	—	11.7%
Sonora	San Luis Río Colorado, Nogales	14.3%
Tamaulipas	Nuevo Laredo, Reynosa, Matamoros	16.4%
Total		100.0%
— Not applicable Total Funding: More than US\$4.6 million (\$43.6 million pesos)		

Table 2-3

Building Capacity of Border Communities

The Border XXI Program has established a U.S.-Mexico Community Grants Program to build capacity for environmental and natural resource protection at the local level. The program has helped build capacity by empowering communities to develop area-specific solutions to their environmental problems and local environmental education efforts. The border communities were notified of grant opportunities through various media. EPA has awarded a total of 37 border community grants in three separate grant cycles (1995, 1997, and 2000), each worth between \$25,000 and \$40,000. Appendix 8 provides a summary of the grants awarded in 1995 and 1997, as well as additional information about capacity building in border communities.

EPA also has provided grant funding to U.S. states to help build capacity in border communities and industry. The states have helped carry out much of the Border XXI work through projects and programs on pollution prevention, water conservation, and air quality monitoring.

Building Capacity through Strengthening of Partnerships and Sharing of Information

The following projects illustrate some of the capacity-building efforts of the Border XXI Program that have been achieved through partnerships and information sharing. Some of these efforts have been directed toward nongovernmental institutions in the border region. Additional information about these and other activities is provided in the workgroup chapters.

Building Capacity through Environmental Education

The Environmental Information Resources Workgroup and the EPA border liaison offices have supported capacity building in the border region through the creation and sponsorship of several environmental education initiatives. These initiatives include: (1) a new border-wide environmental education strategy and five binational cooperative agreements to create a number of environmental education activities along the border region; (2) two guides on environmental education in the border area; (3) a council of educators; and (4) five environmental education binational conferences. Two of the cooperative agreements are designed to work with tribal communities in identifying their environmental education needs. Under the agreements, a binational curriculum will be created that

will be translated into English, Spanish, and Kumeyaay/Kumiai.

Building Capacity through Industry and Private Sector Partnerships

The coordinated efforts of the border liaison offices and the Pollution Prevention and Cooperative Enforcement and Compliance workgroups have resulted in the successful implementation of several capacity-building activities, including: (1) compliance assistance programs through training and education; (2) site assessment visits; (3) sector-specific pollution prevention manuals; and (4) voluntary compliance programs, such as EPA's Self Disclosure Policy. These activities have been effective tools for increasing the ability of the industrial sector to become a leader in addressing the environment as an integral part of its operations. The workgroup chapters provide additional details about capacity-building efforts focused on the industrial and private sectors.

Building Capacity of Border Tribes

EPA has made a concerted effort to more effectively engage U.S. border tribes in the Border XXI Program. In addition to acknowledging the important environmental and natural resource conservation role of the border tribes in the *Coordination Principles between the Border XXI National Coordinators and the U.S. and Mexican Border States and U.S. Tribes for the Border XXI Program (Coordination Principles)* (described below and in Appendix 8), EPA also has provided several grants to the tribes to build capacity, with a special emphasis on training. Other EPA activities that promote tribal capacity have included: encouraging participation of tribes in sub-workgroups, conducting outreach, holding open houses, hiring a tribal coordinator, and sponsoring a conference for tribes. Appendix 9 provides detailed information about specific EPA activities that focus on tribes in the border region.

Environmental Justice in the U.S. Border Area

The goal of environmental justice is to promote fair treatment and equal protection of all people, regardless of their race, culture, or income, so that they can live in safe, healthy, and clean communities. Many challenges faced by border communities fall within the scope of environmental justice, which deals with the disproportionate impact of environ-

mental burdens on low-income communities and communities of color. EPA strives to ensure environmental fairness by implementing the requirements of President Clinton’s Executive Order 12898 on environmental justice and by incorporating the common objectives of the Border XXI Program into agency operations. Both endeavors are focused on promoting sustainable development, ensuring public participation and interagency cooperation, protecting public health, achieving environmental fairness, and reducing disproportionate impact in high-risk communities. The Border XXI Program is committed further to building capacity and to decentralizing environmental management.

To address environmental justice concerns in border communities, EPA uses a four-pronged approach, which consists of the following:

- Empower communities and build local capacity to participate in environmental decision making and binational activities. Appendix 8 contains additional information about border community empowerment and capacity building.
- Ensure EPA’s responsiveness to environmental justice concerns, including development of a strategy to integrate environmental justice into all aspects of the Border XXI Program and other binational activities.
- Assume a leadership role in working with federal, state, and tribal agencies to encourage integration of environmental justice into their border programs.
- Reduce risk, exposure, and other adverse environmental impacts in the border region by ensuring compliance with environmental laws and the cleanup of natural resources.

Appendix 10 contains more information about EPA’s environmental justice activities in the border region.

Challenges and Limitations
Efforts of the Border XXI Program to Promote Decentralization

The Border XXI Program has not been able to fully decentralize environmental management and has not fully created appropriate mechanisms for strengthening state, local, and tribal governments. Although both federal governments have supported the involvement of state and local decision makers in project development through various efforts, involvement at those levels has been limited. Further, compared with the Mexican border states, the U.S. states were pro-

vided more funds to implement border programs.

In addition, the efforts of the nine workgroups have focused primarily on building capacity and not so heavily on decentralizing environmental management. The efforts to decentralize that have been initiated have been concentrated primarily at the state level, rather than the local government level.

Mexico’s Decentralization Process

Although the SEMARNAP-initiated process of decentralizing environmental management in the six border states in Mexico attained some achievements, that main objective has not been met. One of the main obstacles to broader success has been that only a few limited functions have been placed under state authority, and those without provision of the necessary resources to carry them out. That obstacle, as well as others, is discussed below.

The border states, however, have responded to decentralization more rapidly and effectively than other regions of Mexico. For example, they were the first to sign decentralization framework agreements, which established the basis for further specific agreements to transfer SEMARNAP-led functions to the states and municipalities. It is worth mentioning that, among the six border states, Tamaulipas and Coahuila are widely recognized for their environmental laboratories, which strengthen the environmental management capacity of the two states.

SEMARNAP Decentralization Agreements with Mexican Border States (1995–1999)	
State	Number of Agreements
Baja California	22
Sonora	42
Chihuahua	17
Nuevo León	23
Coahuila	21
Tamaulipas	38

Table 2-4

The four main obstacles to implementing decentralization activities in Mexico are described below.

- As previously discussed, the first obstacle has been that both SEMARNAP and the states have lacked sufficient financial resources to implement the decentralization process. The state governments have been precluded by this financial constraint from assuming federal functions and their associated additional expenses. In response to this concern, foreign resources are being

sought to further support the decentralization process, through the creation of environmental funds in each of the states.

- The legal framework has presented another key obstacle, since some of the regulations that govern SEMARNAP do not account for decentralization at the state and municipal levels. This circumstance has hindered the timely transfer of responsibility for functions traditionally provided by the secretariat.
- The lack of institutional capacity, both centrally and locally, has been another key obstacle. Some efforts currently are underway to strengthen the environmental institutional capacity at the state and municipal levels through the creation of the Comisiones Mixtas para la Descentralización (Mixed Commissions for Decentralization). The commissions are entities made up of federal, state, and public representatives, whose role it is to: (1) implement what has been agreed upon in the framework agreements and other specific agreements; (2) publish the Agenda Municipal para la Gestión Ambiental (Municipal Agenda for Environmental Management), an instrument that supports municipal environmental management planning; and (3) integrate decentralization with new forms of regional planning.
- Last, the offer of decentralization has been met with different degrees of resistance by the states. As mentioned above, the principal reason the states have shunned decentralization is the lack of resources available to them to support the process. The resistance of the states has been reinforced further by the resistance of some areas within SEMARNAP and its federal delegations to transfer authority for functions to the states. As a result of this twofold resistance, the scope of the decentralization process has been limited.

Recommendations

Both governments recognize that much more should be done to strengthen the capacity of state, local, and tribal governments and to decentralize environmental management. Future efforts will focus on (1) facilitating further decentralization through the next border program, including increasing authority and resources at the state and local levels, particularly in Mexico; (2) enabling the full participation of all border states and U.S. tribes in the Border XXI program; (3) continuing

to implement and expand the environmental capacity-building program for Mexican states and municipalities under PAFN; and (4) continuing to build state- and local-level capacity as it is related to the promotion of sustainable development through training and education.

ENSURE INTERAGENCY COOPERATION

The third strategy of the Border XXI Program, as identified in the *Framework Document*, is to “ensure interagency cooperation to maximize available resources and avoid duplicative efforts on the part of government and other organizations, and reduce the burden that coordination with multiple entities places on border communities” (II.1). This strategy was developed as a direct response to public criticism that federal environment and health activities along the border were implemented in an uncoordinated fashion, often resulting in a duplication of efforts.

Federal-to-Federal Cooperation

The Border XXI Program has served as a functional framework for binational cooperation, assisted by the participation of a number of federal and state agencies and U.S. tribal governments. As discussed in Chapter 1, the participating federal agencies in the Border XXI Program are EPA, the U.S. Department of Health and Human Services (HHS), and the U.S. Department of the Interior (DOI) in the United States and SEMARNAP, the *Secretaría de Desarrollo Social* (SEDESOL, or Secretariat of Social Development), and the *Secretaría de Salud* (SSA, or Secretariat of Health) in Mexico. EPA and SEMARNAP, the National Coordinators, have joint responsibility for, and oversight of, program implementation.

The emphasis on binational interagency coordination through Border XXI has helped encourage involvement of a full range of other federal agencies, each participating on a project-by-project basis. The Border XXI Program also is linked to other North American Free Trade Agreement (NAFTA)-related institutions such as the Commission for Environmental Cooperation (CEC), the BECC, the NADB, and the International Boundary and Water Commission (IBWC). The BECC, the NADB, and the IBWC have key roles in the policy development and infrastructure construction efforts coordinated by the Water Workgroup. The BECC and the NADB also have supported solid waste infrastructure projects at the local level.

State, Local, and Tribal Cooperation

In addition to extensive federal-to-federal cooperation, inter-governmental coordination and cooperation with border states and U.S. tribes has been a key achievement of the Border XXI Program. The partnership role that those entities play was formalized recently with the signing of the *Coordination Principles*. At the National Coordinators Meeting in Ensenada in May 1999, all 10 border state environmental agencies, EPA, and SEMARNAP signed the document. Present at the special session during which the document was signed were representatives of 14 U.S. federally recognized border tribes. The *Coordination Principles* provide a framework for collaboration among partners to establish objectives, identify activities, and secure the necessary resources to meet those objectives. In addition, they recognize the sovereignty of U.S. border tribes, as well as the long tradition of stewardship of “all Indian communities in the border area.” The *Coordination Principles* are intended to strengthen partnerships to further enhance the ability of border state agencies and tribes to plan an integral role in the Border XXI Program, including the development of the next border plan. Appendix 11 contains the text of the *Coordination Principles*.

In 1997, EPA began convening annual planning retreats with Arizona and California state agencies working in the border region. The goals of the retreats are to formalize coordination principles and engage states and tribes in the decision-making processes related to workgroup activities and broad border environmental policies. In 1999, Arizona tribes participated in the retreat. Several tribes also participated in the retreat in California in March 2000.

Although participation has been limited, local governments have played a role in the Border XXI Program. For example, local governments have been involved in the development of binational sister city contingency and emergency plans (See the chapter on Contingency Planning and Emergency Response) and recommendations for binational air pollution abatement strategies in specific areas, such as the El Paso County-Ciudad Juárez-Doña Ana County air basin and the San Diego County-Tijuana region.

Some EPA-supported state initiatives in the border region currently are not part of the Border XXI Program. For example, work being done on pesticide use and exposure is not explicitly covered by any Border XXI Workgroup.

However, with EPA funding, the four U.S. border states sponsored several information exchange conferences for U.S. and Mexican officials to improve working relationship with agencies responsible for pesticide regulations in Mexico. In the next phase of border planning, pesticides issues may receive more focused attention. The states play a critical role in helping to address border environmental and natural resource management issues, and EPA encourages continued support for those cooperative efforts.

Cross-Workgroup Cooperation

As each of the Border XXI workgroups' programs developed, it became apparent that many of the individual programs could benefit from collaborative interaction. Such was especially the case for the Environmental Health Workgroup, which found synergistic opportunities with the Air, Hazardous and Solid Waste, Environmental Information Resources, and Water workgroups. Since many of the health problems occurring along the border are the result of water- or air-based vectors, it became evident that measured changes in air and water quality were an ideal test-bed for measuring changes in health status. From Mexico, the SSA presented projects it had implemented, including the Clean Water in Homes program. (Appendix 12 provides more information about the program.)

As a result of joint efforts between the Air and Environmental Health workgroups, preliminary air measurements in El Paso made by EPA's Office of Research and Development (ORD), in collaboration with the Texas Natural Resources Conservation Commission (TNRCC), concluded that a children's pulmonary health study would be feasible. The Air and Environmental Health workgroups continue to work with local agencies to design a study in El Paso to further analyze the problem.

As a result of joint efforts between the Water and Environmental Health workgroups, several projects are underway to identify key water bodies for which joint studies could be developed. Projects could be implemented in Nuevo Laredo, Nuevo León; Reynosa; El Paso; and Del Rio as a result of those efforts. In addition, Mexico's SSA presented an epidemiological surveillance program for Ciudad Juárez, as recommended in the JAC's strategic plan.

Coordination between the Cooperative Enforcement and Compliance Workgroup and the Hazardous and Solid Waste

Workgroup has resulted in the streamlining of both workgroups. Joint subworkgroup meetings are held regularly, and information is exchanged on case-specific investigations related to the transboundary movement of hazardous wastes between the United States and Mexico. The two workgroups also participate in joint training sessions on regulations related to illegal shipments of hazardous waste, as well as import and export regulations governing hazardous waste and materials. In addition, they train hazardous waste inspectors.

Public- and Private-Sector Cooperation

Federal, state, tribal, and local agencies involved in the Border XXI Program have been working to cultivate strong public-private partnerships with industry.

In March 1999, EPA and the *Procuraduría Federal de Protección al Ambiente* (PROFEPA, or Mexico's Federal Attorney General for Environmental Protection) sponsored the conference Environmental Auditing and Pollution Prevention in the Maquiladora Industry in San Francisco, California for *maquiladora* parent companies and trade associations. The purpose of the conference was to increase awareness of environmental stewardship and encourage corporate executives to augment their roles as environmental stewards.

In 1999, EPA and SEMARNAP signed the *Seven Principles* with the USMCOC and the BECC. The *Seven Principles* advance the notion of corporate environmental stewardship and seek to promote goals of sustainable development through the enhancement of environmental compliance and the implementation of economically efficient and effective environmental measures. The principles of corporate environmental stewardship are:

- Management Commitment
- Compliance Assurance and Pollution Prevention
- Enablement of Systems
- Measurement of Continuous Improvement
- Public Accountability
- Industry Leadership
- Sustainable Community Development

In the coming years, EPA, SEMARNAP, and the USMCOC will work to promote voluntary implementation of the *Seven Principles* by industry and affiliate associations throughout the United States and Mexico, consistent with the domestic laws of each country. A comprehensive strategy for pro-

moting the effort currently is being developed. Appendix 3 contains the complete text of the *Seven Principles*.

Challenges and Limitations

The Border XXI Program has faced some challenges and criticisms related to ensuring interagency cooperation. One of the most notable constraints affecting achievement of the goal of sustainable development is that the Border XXI Program does not include all federal agencies that are involved in border work. Some of the federal agencies that do not participate under the current plan are the U.S. Departments and Mexican Secretariats of Agriculture, Energy, Transportation, Housing, Commerce, and Treasury.

In addition, while the program is linked to other NAFTA-related institutions, it coordinates more closely with some institutions than it does with others. A notable gap exists from the lack of full and consistent coordination and collaboration with the CEC. Although the scope and types of efforts in which the CEC participates often differ from those of Border XXI, closer communication and coordination between the two entities could result in more complementary efforts. To date, only a few activities with the EPA border liaison offices and with the Air and Water workgroups have been carried out in partnership with the CEC.

The Border XXI Program has been criticized for having limited state, local, and tribal government representation in the workgroups. A result of this shortcoming is that non-federal entities, particularly at the local level, were not widely included in the development of indicators for the border region. While Border XXI is progressing to include more non-federal participants, the challenge of fully incorporating all border governments into the workgroups remains.

Regarding the individual border-wide workgroups, Border XXI has been criticized for not having state-led workgroups. Even though the current structure of Border XXI does not lend itself to workgroup leadership by the states, the two federal governments have not done enough to investigate the changes that would enable representatives of the states to chair workgroups.

Recommendations

As a result of the efforts and experiences gained, both governments recognize that much more remains to be done to facilitate further binational cooperation at all levels. The following efforts and changes could be considered in the next

border program: (1) either refine the program mission for the next phase of border cooperation so that it better reflects the jurisdictions of the environmental agencies in both countries (that is, so that it is focused only on those activities over which the environmental and health agencies have influence) or expand the scope of the border program to include other federal agencies in the next phase of the border program; (2) continue to strengthen coordination efforts with border states and tribes; (3) initiate mechanisms that will involve local government more fully; (4) continue efforts to

promote cross-linkages between workgroups; (5) coordinate more closely with other NAFTA-related institutions and industry; and (6) involve states, tribes, and local governments in the development, quantification, and evaluation of environmental indicators.
