

Engaging the United States and Mexico in Defense, Development, and Diplomacy to Enhance our Sustainable Security at our Border

Erik Lee, Carlos de la Parra, Rick Van Schoik, and Sara Sonnenberg

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The United States seeks a safer, more prosperous, more democratic and more equitable world. We cannot reach that goal when one-third of humankind live in conditions that offer them little chance of building better lives for themselves or their children... We cannot build a stable, global economy when hundreds of millions of workers and families find themselves on the wrong side of globalization, cut off from markets and out of reach of modern technologies. We cannot rely on regional partners to help us stop conflicts and counter global criminal networks when those countries are struggling to stabilize and secure their own societies.

—U.S. Secretary of State Hillary Clinton, January 6, 2010

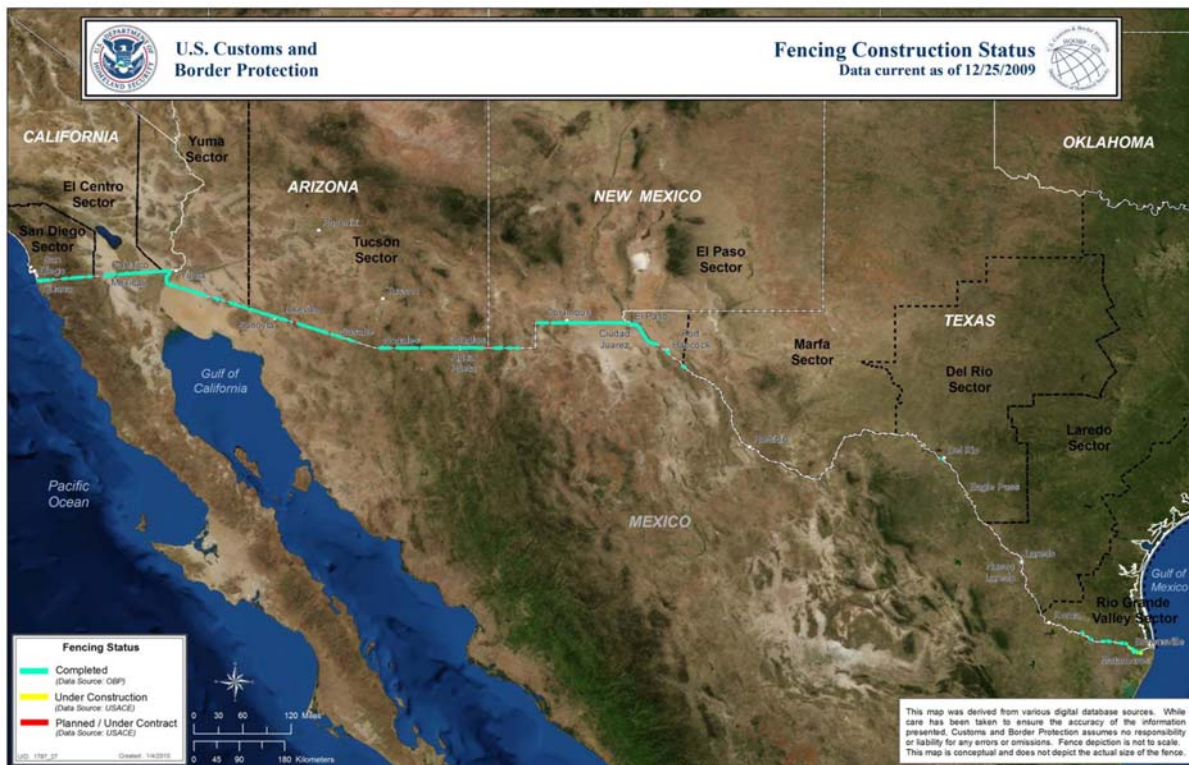
Introduction

In one of her first major addresses of this year, Secretary Clinton laid out the Obama Administration's approach to development in a lengthy speech at the Center of Global Development in Washington. Although she specifically mentioned Mexico only once in the speech, a number of the concepts she articulated could easily apply to how the U.S. would like to expand its relationship with Mexico going forward: *partnerships* and *investment* instead of traditional aid; *development* as a co-equal with defense and diplomacy, and *innovation* and *knowledge exchange*. The main difference with how the U.S. approaches development partnerships with other countries from how it approaches development issues with Mexico, of course, is that the two countries share an almost 2000-mile border, the locus of an enormous amount of complex binational interaction on all levels, a true "system of systems."

Without a doubt, the terrorist attacks upon the United States on September 11, 2001 catalyzed an intense and contentious reshuffling of the nation's priorities, and particularly with respect to how it managed its border with Mexico. The Homeland Security Act of 2002 created the Department of Homeland Security and grouped 22 component agencies under its umbrella. The REAL ID Act of 2005 gave the DHS Secretary the power to waive environmental regulations that interfered with or delayed the construction of physical barriers at the border. Following a number of false starts, according to the U.S. Customs and Border Patrol website, as of January 8, 2010, CBP has completed roughly 642.8 miles of fencing (344.3 miles of primary pedestrian fence and 298.5 miles of vehicle fence) along the Southwest border.

Figure 1: Status of border fence construction (as of December 2009).

http://www.cbp.gov/linkhandler/cgov/newsroom/highlights/fence_map.ctt/fence_map.pdf



A key advisory board to the federal government, the Good Neighbor Environmental Board (GNEB), acknowledged the expansion in the importance of border security operations in its March 2007 Tenth Report to the President and Congress of the United States, *Environmental Protection and Border Security on the U.S.-Mexico Border*. The GNEB also added two additional key factors related to the increase in border security operations: the spike in illegal immigration as well as the increased violence in Mexico associated with Mexico's ramped-up efforts to contain the various drug trafficking organizations. While the GNEB report took pains to point out that, in certain circumstances, the enhanced fencing actually *protected* environmentally sensitive areas, the report outlined nine major challenges (outlined below in Figure 2 to the border environment in the areas of undocumented migrant crossings and hazardous materials management).

Figure 2: Areas of focus and principal challenges for security and the environment. Tenth Report to the President and Congress of the United States, *Environmental Protection and Border Security on the U.S.-Mexico Border*.

AREA OF FOCUS	CHALLENGE
<p>Undocumented Migrant Crossings</p>	<p>1. Roads and foot trails created by undocumented migrants, migrant smugglers, and drug smugglers and by the interdiction agencies that pursue them cause damage to wildlife and fragile ecosystems.</p>
	<p>2. Trash and other waste left by undocumented migrants and drug smugglers in the process of crossing despoils the landscape and puts people and wildlife at risk for disease.</p>
	<p>3. Impenetrable fences may present significant negative consequences to wildlife and the environment.</p>
	<p>4. Lack of collaboration across agencies with responsibility for border security, land management, and environmental protection tends to lessen the likelihood of win-win scenarios for both security and the environment.</p>
<p>Hazardous Material Crossings</p>	<p>1. Ports of entry lack staff to inspect all shipments of hazardous materials, including hazardous waste, and some local emergency responders have inadequate training. Environmental agencies also lack hazmat tracking data as well as more general chemical storage data. Although CBP prescreens shipments before leaving 32 foreign ports, it does not do so at land ports in Mexico.</p>
	<p>2. Emergency responders are not able to easily cross the border to respond to incidents because of insurance, liability, national sovereignty, and command issues, and customs and border procedures may delay response.</p>
	<p>3. Technology equipment and personnel issues: environmental protection needs of small U.S. communities, Mexican communities, and U.S. tribes are overlooked in the “big picture.”</p>
	<p>4. An overarching strategic plan for border region ports of entry is needed that reflects development, population, language, and staffing requirements, which also would lessen tensions that exist between security and environmental protection personnel at some ports of entry.</p>
	<p>5. Tribal funding and communication pose a challenge, specifically the inability of border tribes to receive funding for emergency response and less than desirable communication on hazardous materials transported through and adjacent to tribal lands.</p>

However, if the three pillars of statecraft and the U.S. national security policy are defense, diplomacy, and development, then the current public policy discussion on border security infrastructure and its environmental effects may focus too heavily upon a still too narrow definition of security that potentially misses all three “D’s.” An enlarged definition of national security and pursuit of human security can potentially accomplish all three. The bottom line for all environmental work should be the human condition and even more specifically, human security. This broader, dimensionalized definition of security includes components such as energy, water, infrastructure, natural disasters, biological, food and agriculture, natural habitats, hazardous materials and chemicals, and infectious diseases. This broader definition of security offers the United States and Mexico several opportunities and win-wins for both the security and environmental communities.

Impacts of Border Security Policy, Infrastructure And Activities

So what exactly are the impacts of border security operations but to the natural world and to the human world? They are myriad and diverse.

Ecological upset. The fence bisects otherwise intact ecosystems, assemblages of species, natural communities, habitats, and natural processes such as hydrology and fire. Flesch et al (2009) documents the destruction of ‘connectivity’ claiming two dimensional (for terrestrial species) and three dimensional (for aerial or flying species) obstruction and fragmentation of home range and territory. “Vegetation gaps and tall fences may limit transboundary movement” thus lowering otherwise “relatively high levels of gene flow and migration.., and

dispersal. Disruption of transboundary movement corridors by impermeable fences would isolate some populations” and spatial distributions may be affected by border development.”

In some places where fences have been constructed for political or ownership reasons those fences are being removed for the benefit of species. In the central California valley and Carrizo Plain, fences are being removed to save the pronghorn antelope which was introduced in 1990 but needed more room to range to survive and prosper. “The long stretches of fence spread cross the range prevent the pronghorn from fleeing predators and are a big reason why the herd has the worst survival rate in the west” (Cone, 2009)

A genetic migration workshop in 2007 cited several large animals as at risk from habitat bisection – the bighorn sheep of the Californias, the bears of the Rio Bravo/Grande and several species of birds some of which do not fly far enough to cross the fence.

Ecosystem processes and services. Various biologist and environmental economists attempt to value the natural world and estimates range across the trillions of dollars of service to humanity annually, Suffice it to say destroyed habitat without mitigation is lost productivity, quality of life and future vitality. Specific services offered by habitat in the border includes the filtering and nursery services offered by estuaries, the creation of oxygen and filtering of pollutants performed by habitat, the sedimentary and nutrient value of hydrological flows and processing,

the home and creation of niches to all species by riparian sky island and other rare or endangered biomes, and the natural and esthetic value offered to birders and other naturalists.

Cooperation and Mutual Aid. Governor Schwarzenegger is fond of telling the story of being woken up late one night by President Calderon who was flying over California to a meeting in Asia. The president declared "California is one fire. What can I do?" This anecdote about what neighbors naturally do to assist each other is tempered by the reality that since 2001 almost all operations are harder, more time consuming, arduous or tense. Victor Conrad of Carleton University in Canada has even done a survey to document the extra effort needed and binational coordination that does not occur due to friction and border thickening

Avenues of exploration to address impacts. If indeed sovereignty is seen as an obstacle to cooperation as seen at border institute VI and Border Institute IX, there are mechanisms for transnational sovereignty, sovereignty bargaining or sovereignty sharing. The US Ambassador to Mexico Carlos Pascual has even written in his latest book (Jones et al, 2009) that 21st century diplomacy needs to be based on a shared responsibility and collaborative action. Pathogens and hazardous materials flow across borders more easily than cooperation on fighting them necessitating elaborate planning, preparation and preparedness for all natural disasters as well as intentional damage-inducing events. Some of that P3 effort may require one nation or the other to give up some degree of absolute control of its border or homeland, laws or regulation, peoples or process.

Taking an “All-Hazards” Approach to the U.S.-Mexico Border

Unilateral and overly focused planning in the U.S.-Mexican border region and with respect to the binational agenda more broadly – planning that only takes security issues, environmental issues, economic issues, U.S. issues, or Mexican issues into consideration – can be counterproductive and generate significant unintended consequences. However, an all-hazards approach to risk mitigation that takes a number of key issues into consideration when attempting to solve any one problem (such as, for example, illegal immigration,) have the potential to be richer, longer-lasting and more sustainable. An all-hazards approach to the U.S.-Mexico border applies a framework to view the borders as a “system of systems,” or an interconnected junction of both spatial and conceptual areas, where various key systems meet, intersect and affect one another, including bi-and tri-national communications networks, levels of governance, law enforcement, security tools and approaches, migratory populations, etc. Considering hazards collectively, rather than singling out individual threats, and the U.S.-Mexico border as dynamic point of intersection, border security measures should adopt an integrated approach that detects and classifies all types of illegal and high risk border crossers, such as drugs, irregular migrants, weapons, bulk cash, and precursor chemicals. An all-hazards approach is holistic and multifaceted and allocates resources according to risk, rather than perceived threat. Examples of this multifaceted planning are presented below as mini-case studies, grouped within eight themes or binational issue areas, often together with cautionary cases where an all-hazards approach was not applied. Figure 3 below provides a list of these binational issue areas

Figure 3: Overview of Binational Issue Areas

BINATIONAL AREAS	SECURITY ISSUES	KEY PARTNERSHIPS NEEDED
1. Energy	U.S. heavy dependence on and access to petroleum.	Binational mechanisms to ensure cleaner, more stable energy production.
2. Water	Wastewater overflow from Mexico into the U.S.	Binational wastewater treatment facilities.
3. Ecosystems and Habitats	Invasive plant species that prevent proper patrol of border regions by law officers.	Binational teaming with tribal nations that reside in border regions to remove invasive plants.
4. Food and Agriculture		
5. Human Health and Quality of Life	H1N1 influenza epidemic and mitigating virus spread.	Trinational/binational collaboration and communication of scientific findings other resources.
6. Natural Disasters and Intentional Acts	Transboundary forest fires.	Binational planning to prevent and respond to forest fires and other security risks.
7. Infrastructure	Closing or restricting traffic at Ports of Entry (POE).	Binational collaboration of increased security measures on either side of POEs.
8. Hazardous Materials and Waste	Loss of funding for the HazTracks effort to classify and identify hazardous waste crossing the border.	Binational planning and funding of a transboundary hazardous waste management facility or system.

1.

Multifaceted Energy Planning. Mexico is the third-largest supplier of petroleum to the United States; the U.S. economy depends heavily upon access to this key commodity. Efforts to integrate the regional energy sources, markets, and infrastructure ensure security to both sides. Exchange of renewable energy (and their credits), mitigation of greenhouse gas jointly, trade of emission reduction credits, and other binational mechanisms ensure a cleaner and more stable energy picture. The recent binational agreement on renewable energy, the U.S.-Mexico Bilateral Framework on Clean Energy and Climate Change of 2009 offers some hope in this area;

projects at the border offer an opportunity to ground this agreement in a concrete and highly beneficial context.

Multifaceted Water Planning. One of the oldest and most successful and institutionalized forms of collaboration between the United States and Mexico is through the mechanism of the International Boundary and Water Commission/Comision Internacional de Limites y Aguas (IBWC/CILA), established in 1889. The relatively recently established North American Development Bank and Border Environment Cooperation Commission have been instrumental in evaluating plans for and then funding several successful binational wastewater treatment plants, such as the treatment plants in Ambos Nogales (Arizona-Sonora) and Dos Laredos (Texas-Tamaulipas). If properly planned, binational wastewater treatment plants can save the United States and Mexico billions of dollars, as they are usually more strategically located than unilaterally planned facilities are and they generally implement less expensive and more effective treatment processes. Moreover, binational planning offers Mexico the technological and financial resources it needs to adequately treat its wastewater – wastewater that, in many occasions, would flow into the United States.

Multi-faceted Ecosystems / Habitats Planning. Since 2005, the United States, Mexico, and the Cocopah Nation have teamed to remove tamarisk and other an invasive plant species that have explosive growth rates and are choking sections of the Colorado River that serves as the boundary between the United States, Mexico, and Cocopah. Not only is this binational project restoring the Colorado's natural ecosystem and hydrological processes, but the removal of the dense vegetation is enhancing the ability of law enforcement officials to see and patrol the river

and border in areas that were once major crossing points for illegal activity. The removal has also allowed law enforcement officers to determine the border unambiguously.

As has been pointed out before in several venues, scientists have discovered that fences along the U.S.-Mexican border can, in the right contexts, *protect* the environment, as they prevent migrants from stamping out permanent trails, furthering erosion, littering, and igniting unintentional forest fires. Virtual security fences, such as the fence security system that is becoming operational along the Arizona-Sonora border as part of the U.S. Customs and Border Patrol *SBI*net (Secure Border Initiative), can potentially be used to detect and track rare mammals, such as the jaguar. *SBI*net systems combine technologies such as mobile and fixed towers, cameras, radars and unattended ground sensors. Combining good ecological practices with advanced technologies, such as the control of sediment to prevent security sensors from being buried, ensures greater security along the southwest border. Figure 4 provides an overview of *SBI*net virtual fence construction.

Figure 4: *SBI*net Overview. Source: DHS Fact Sheet, “*SBI*net: Securing the Nation’s Borders.” <http://www.dhs.gov/xlibrary/assets/sbinetfactsheet.pdf>.

Elements of <i>SBI</i>net	Detect an entry when it occurs. Identify what the entry is. Classify its level of threat (who the entrant is, what the entrant is doing, how many, etc.). Respond effectively and efficiently to the entry, and bring the situation to the appropriate law enforcement resolution.
Scope of <i>SBI</i>net	6,000 miles of border. Provides DHS and CBP with the optimum mix of personnel, technology, infrastructure, and response platforms to detect, identify, classify, and respond to illegal breaches of the international borders with Canada and Mexico and thereby bring the situations to the appropriate law enforcement resolution.

Initial Task Order	The initial task order covers 28 miles of border within Tucson Sector and will serve as a model for further roll-out. Deployment timeline is eight months. Further task orders to follow.
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Unilateral Food / Agricultural Planning. The United States’ decision to subsidize corn, the growing of corn for the ethanol market, combined with the NAFTA-guaranteed free trade of agricultural products has hampered the Mexican corn market, which has prompted thousands of Mexican to migrate to the United States in search of work (a security issue.) [do we have a more concrete, border-specific example to use here?]

Multi-faceted Human Health and Quality of Life. Health is often one of the priority issues of human security. Large population movement, limited public health infrastructure, and poor environmental conditions contribute to increased risk for infectious diseases in the border region, especially at the U.S.-Mexico border where more than 14 million people reside. The Border Infectious Disease Surveillance Program (BIDS) has been extremely successful in detecting infectious diseases before they cross the U.S.-Mexican border. BIDS owes much of its success to its policy of collaboration among U.S. and Mexican stakeholders and scientists. The recent trinational collaboration of the Security and Prosperity Partnership (SPP) of North America on H1N1 influenza response serves as a model for collaboration. In 2007, the SPP released the North American Plan for Avian and Pandemic Influenza which focuses on detection, containment and control; preventing entry into North America; minimizing illnesses and death; sustaining infrastructure, and mitigating impacts to economy and functioning of society.

The three North American governments worked closely together from the beginning of the H1N1 outbreak through the sharing of information and resources to implement evidence-based strategies in the countries and on the borders to ensure health safety. Quarantine, by its very nature, is a failed exercise because it more or less assumes that other infected people have already crossed and contaminated the native population. Collaboration and communication between nations and citizens was the most effective means of mitigating the spread of the virus, proven by both the U.S. and Mexico acting like good neighbors. Mexico's proved this through early announcements of the influenza epidemic in Mexico and use of two epidemiologic surveillance systems to classify and identify patients and suspected influenza cases to isolate the H1N1 strains, while the U.S. assisted with medical detection work and kept the border open.

Multi-faceted Planning for Natural Disasters and Intentional Acts. According to the tenth report of the Good Neighbor Environmental Board (2007) California and Baja California have successfully planned and implemented strategies to putting out transboundary forest fires. "Under this agreement, Mexican fire agencies have crossed into San Diego County to assist local fire fighters on a number of occasions. In addition, U.S. agencies regularly provide assistance south of the border" (Source: Tenth Report of Good Neighbor Environmental Board, 2007.) Not only does this form of binational planning eliminate forest fires more effectively than unilateral planning does (i.e. it affords the region more manpower and it offers solutions to stopping fires that cross the border,) but it also provides San Diego and Tijuana with mechanisms and strategies that can be easily used in responding to potential transboundary terrorist attacks. The binational Border Area Fire Council, which was originally created to respond to fires

created by migrants, has led to other binational cooperation on fire prevention, trans-boundary prescribed burns, natural resource management, joint emergency response training, and equipment exchange.

Unilateral Infrastructure Planning. The U.S. has decided to close the port of entry along the binational Amistad Dam, which connects El Rio, Texas and Acuña, Coahuila. While this action is a security measure, the U.S. could have simply heightened the security along the dam (via technological resources, etc.), while keeping the port of entry open. Closing the port of entry will affect the economies of both cities.

Unilateral Natural Disaster and Infrastructure Planning

Recent surprise rainstorms have flooded communities, closed businesses, and even drowned a few people. Proper planning which integrated across the border and accommodated drains on either side could have lessened the impacts.

Hazardous Materials and Waste. The clear intent and promise of safety to both countries was the provision of NAFTA that waste from hazardous materials used in the production of Mexican maquiladoras would be “repatriated” to the U.S. until such time that Mexico developed an adequate storage, transport, and disposal system for the hazards. HazTracks, the binational effort intended to track hazardous waste as it crosses the U.S.-Mexican border, has lost its funding. Therefore, a new provision to handle toxic waste from Mexico needs to be put in place.

U.S.-Mexico Border Environment and Security: Key Opportunities

The Good Neighbor Report

The Tenth Report of the Good Neighbor Environmental Board to the President and Congress of the United States, Environmental Protection and Border Security on the U.S.-Mexico Border, published in March 2007, noted the negative environmental effects of both illegal immigration (new networks of roads and large amount of trash and other refuse left by migrants in environmentally sensitive areas) and intensified security operations by the U.S. Department of Homeland Security. It also emphasized the positive opportunities for the border environment and the U.S. and Mexico with respect to some fencing that protected sensitive areas in particular circumstances as well as the convergence of interests of the security and environmental communities with respect to the close management of hazardous materials entering at the dozens of ports of entry along the border. Below we outline additional areas of opportunity beyond these specific areas of ecological protection and hazardous materials management.

Opportunity 1: Consultation on Environmental Impact

One of the potentially most useful tools available to the three North American nations in the area of environment and security is one that we have but have never used. Transboundary environmental impact and assessments (TEIA), an important environmental management tool that presents a significant opportunity for collaboration between the United States and Mexico. TEIA address issues of transboundary environmental impact that occur within two or more countries physical areas of jurisdiction and implement methods of joint management between

the countries. There is a critical capacity to do this which has existed for well over a decade and there are national and international organizations to guide us. The NAFTA environmental side agreement, the North American Agreement on Environmental Cooperation (NAAEC) between the U.S., Canada and Mexico, was agreed to as part of the North American Free Trade Agreement. The NAAEC mandated the trilateral Commission on Environmental Cooperation and included TEIA as part of this agreement. Unfortunately, TEIA has yet to be implemented in North America.

It is important to emphasize the central and beneficial role TEIAs could play not just for environmental impact minimization, monitoring, mitigation, and management but for North American diplomatic relations more broadly. TEIAs could build upon cross-border environmental work that has evolved through binational programs such as Border 2012; in many cases, the environmental arena is one of the most positive and productive areas of interaction between the United States and Mexico. If Mexico could, at a minimum, get the U.S. to consider TEIAs for the infrastructure that they do want to construct on the border, then from the U.S. perspective this might be as straightforward as implementing strategic environmental assessments (SEAs) which are greater, more comprehensive, and as the name suggests, more strategically oriented than the current programmatic and project environmental impact reports (EIRs) and environmental impact statements (EISs) that the various federal agencies currently implement. So there's an entrée into TEIAs through these SEAs that would not be too foreign for the U.S. system.

So what is holding up this process? The divisive issues on TEIAs are actually few. Because environmental review is a federal domain in Mexico but a state jurisdiction in U.S., disagreement persists about if only federal or if all projects would be subject to notification. The U.S. federal government could enable and facilitate U.S State notification of and from Mexican federal levels. While the U.S. side posts most reviews for public comment, that process is not official consultation. It should also be emphasized that TEIAs are but one of a host of under-implemented and under-evaluated environmental and security agreements between the United States and Mexico. The 1983 La Paz Agreement does not address the border wall; neither does the 22-point 2002 Smart Border Agreement, the Security and Prosperity Partnership, nor the 2009 Mérida Initiative address the border wall in any substantive way.

Yet the current construction, operation, and patrolling of virtual and actual fences raises the issue of trans-boundary environmental impact and assessment to a new level of importance: the obvious and binationally recognized impacts to both sides of the border fence and associated infrastructure, what is in essence a divider of ecosystem and all of its parts. The REAL ID Act of 2005 gave the Secretary of the U.S. Department of Homeland Security both exclusions and exemptions to environmental review when security—in the judgment of the secretary—is judged to be jeopardized by compliance or the implied delay of implementation. However, the Act does not specify that *transborder* effects of the fence are also exempted. This is important, because the considerable and negative diplomatic effects of both building a wall with a neighbor and the lack of notification over its environmental impacts are an example of what can happen when the environment and security are not considered holistically in border

policymaking (for the purposes of space we are not bringing the fence's impact upon *competitiveness* into consideration here).

Opportunity 2: Leverage Technology, Infrastructure, and Cooperation Effectively

Technology does have a role in securing our nation's borders, although we need to think through its sustainable implementation. SBInet has not yet proven its value at detecting, identifying, classifying, and assisting with interdicting inappropriate flows across the border. While it has left a footprint of generators, roads, towers, cables and other infrastructure that while not as concentrated as the wall or fence has similar habitat fragmentation effects. Of lesser impact on the ground would be the use of remote telemetry to accomplish the same security objectives.

The use of unmanned aerial vehicles, UAVs, or drones and satellites even further away is suggested. The Schengen free travel zone of the European Union is monitored by satellites and U.S. gave Mexico bandwidth on one of its satellites as part of the Merida Initiative. Satellites could ultimately protect the environment, facilitate trade, and engender better U.S.-Mexican relations and U.S.-Canadian relations.

The potential successful use of satellites suggests that trade, security, and protection of the environment need not be seen as "pick one and delete the rest." Instead, security, environment and commerce can co-exist if co-developed together. The graphics below show an example of how green infrastructure, or natural capital (Figure 5A), can determine where human capital and economic infrastructure goes (Figure 5B). Borders and security infrastructure are often then imposed onto the landscape to protect national capital, but they need not

destroy the environment or create unnecessary tension between nations. Figure 5C shows how in remote and challenging terrain, such as terrain with steep hillsides and riparian habitat, security infrastructure such as satellite telemetry, unmanned aerial surveys, balloon-lofted radar and stand-off sensors can monitor activities and movements. In urban binational metroplexes, some fencing does make sense, if used intelligently with configurations such as trinational customs teams. In other areas, a combination of fences and satellites makes sense. This combination allows energy, legitimate vehicle, personnel, and product transfer across the border yet affords control of the border.

Figure 5a: Crossborder green infrastructure

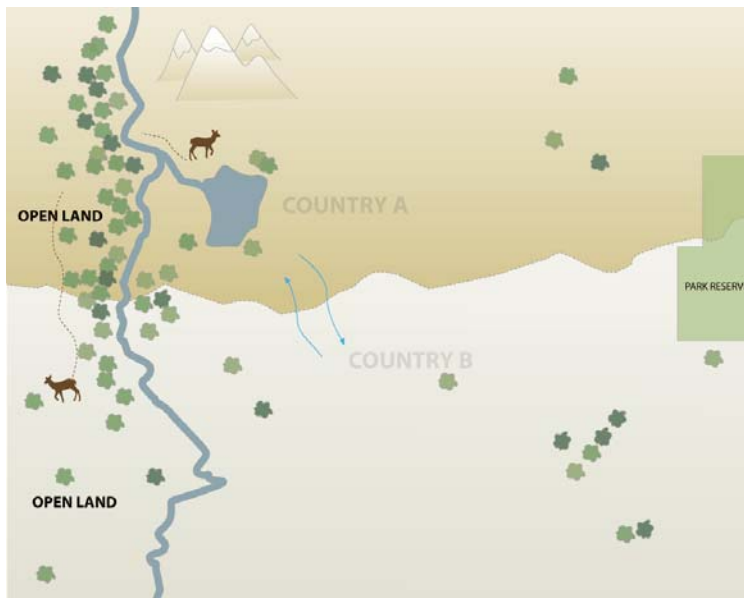


Figure 5b: Human capital and economic infrastructure

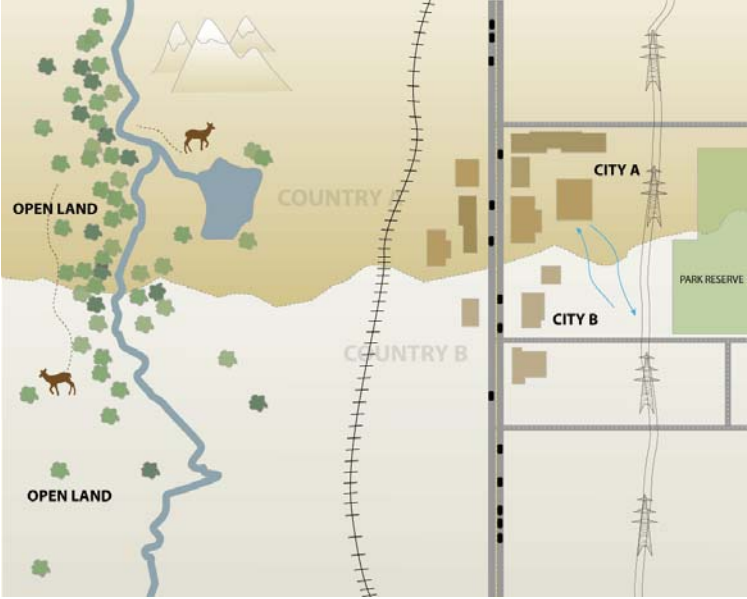


Figure 5c: Smart border infrastructure



Opportunity 3: Measuring the Effectiveness of North- and Southbound Mitigation of Border Security Risks against the Costs of Security Infrastructure

- SBInet, Common Operating Picture, drugs, irregular migrants, weapons, bulk cash, precursor chemicals, etc.;

Opportunity 4: Southern and Northern Border Differences and Implications

Opportunity 5: Sovereignty Bargaining Between the United States and Mexico

Opportunity 6: Engage Existing Binational Governance Mechanisms and Organizations

- Border Governors Conference

It should be noted that the authors do not imply that stricter security or law enforcement is unnecessary at the U.S.-Mexican border. Instead, we suggest that the relationship between security and the environment should be studied further so that effective security measures that have fewer environmental consequences (or even enhance the environment and the economy), and that complement all aspects of security can be instituted at the border.

Conclusion: Policy Options and Recommendations

In February 2009, the North American Center for Transborder Studies at Arizona State University launched the report, *North America Next: A Report to President Obama on Building Sustainable Security and Competitiveness*. The report contained 8 main recommendations and a number of complementary recommendations. We revisit these recommendations below because of their insistence on the productive intersection of security, the environment, and economic competitiveness.

Designate a North America/Borders authority to coordinate sustainable security.

A senior deputy at the National Security Council should be appointed to deal with and to resolve the competing, complementary, and overlapping border management, national security, law enforcement, commerce, transportation, environment, water, regional development, and other infrastructure and political issues that comprise today's border area realities. A singular focus on traditional security does not address all of the critical functions of our borders.

Expand joint risk assessment and preparedness with Canada and Mexico.

Much of the security effort in North America is focused on the prevention of another major terrorist attack. But this effort can be bolstered by more effectively engaging our North American neighbors as collaborators through enhanced joint defense of North America to minimize, mitigate, and manage natural and human-caused catastrophes in North America.

Create an effective North American trade and transportation plan with Canada.

and Mexico. Common transportation infrastructure challenges in all three countries—congestion, bottlenecks, infrastructure deficits—are an opportunity for concerted investment that will bring concrete, highly visible improvements to the trilateral public. Build upon examples such as the existing Arizona-Sonora infrastructure plan and California's unique new port of entry at Otay Mesa. Economic stimulus packages going forward should include funds for bolstering border-region infrastructure.

Create a joint, revolving fund for infrastructure investments in North America.

Infrastructure in the United States, Canada and Mexico is rapidly deteriorating and in urgent need of broad and deep investment. By pooling resources, the three countries can maximize the competitive benefit vis-à-vis Asia and Europe and jump-start our collective economic engine.

Implement a North American Greenhouse Gas Exchange Strategy.

A North American Greenhouse Gas Exchange Strategy (NAGES, modeled on the Clean Development Mechanism to create a North American clean energy fund) could ensure the United States continues to have priority access to Canada's wealth of hydro-electricity, natural gas, light petroleum and uranium in exchange for off sets for the greenhouse gases created by their development. Mexico, as the seller of the off sets, could then develop the infrastructure to clean its energy, transportation, housing, and industrial sectors. This arrangement would improve U.S. energy interdependence and continental climate security.

Establish joint and practical assessments of North American policy effectiveness.

We are in great need of practical and meaningful ways to guide and track progress on a number of key North American issues. Such an effort should include tools such as a Cross-Border Collaboration Scorecard and an annual State of North America Report (SoNAR) to be developed by North American academic and public policy organizations. The scorecard and report would inform the annual Trilateral Leaders' Summit.

Implementation of such ambitious objectives necessarily takes advantage of existing bilateral agreements, mechanisms and institutions (of which there are many, as pointed out above). Envisioned coordinated actions at the various levels of government are as follows:

Additional recommendations:

NATIONAL/FEDERAL DEPARTMENTS AND DIVISIONS

- U.S Congress should consider legislation such as the Border Conservation and Security Act of 2007.
- DHS and EPA should integrate Border 2012 contingency planning, emergency response, and disaster recovery capacity plans into security response plans.
- BECC and DHS should consider developing a border strategic plan.
- DHS, EPA, and DoI and counterparts in Mexico include a chapter on the Environment in Security Management System (SMS) plans and a chapter on Security in Environmental Management Systems (EMS) plans.
- DoI and DHS train CBP agents in environmental stewardship protocols and Best Management Practices.
- CBP inform land managers and local communities affected by their proposed security projects of all potential ramifications with analysis to be completed by an objective team of experts such as the Borderlands Management Task Force
- DHS affirm intent as possible to building virtual fences along rivers, in sensitive habitats, and up steep gradients in remote and rural areas.

STATE, LOCAL, TRIBAL, AND REGIONAL* ORGANIZATIONS

Envisioned coordinated actions at additional levels of government are as follows:

- Regional universities, environmental NGOs, and other science-based organizations could be tasked by DHS and other key agencies to identify sensitive habitats in areas with high amounts of biodiversity and vulnerability in rural areas.
- EPA, DoI, DHS and international environmental non-governmental organizations could seek funding for mitigation, management and monitoring together and guarantee at appropriate level of funding be available for use for projects being in Mexico

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