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**CENTRAL AMERICA**

# ASSESSMENT OF THE USAID ENVIRONMENTAL COOPERATION PROGRAM TO PROMOTE COMPLIANCE WITH CAFTA-DR

PROSPERITY, LIVELIHOODS AND CONSERVING  
ECOSYSTEMS (PLACE) IQC  
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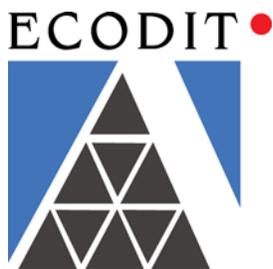
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## ABBREVIATIONS AND ACRONYMS

We have tried to minimize the use of abbreviations and acronyms used in this report, but we use them to save space when they refer to frequently mentioned organizations and conventions, and when commonly used in this field. The full name to which the abbreviation or acronym refers is given the first time it is used in the text.

AECI	Spanish International Cooperation Agency
AFD	Alcoholes Finos Dominicanos
BAP	Better Agricultural Practices
BEO	Bureau Environmental Officer
BMP	Best Management Practices
BORSICCA	Industrial Waste Exchange for Central America and the Caribbean
CAFTA-DR	Central America-Dominican Republic-United States Free Trade Agreement
CAS	Conformity Assessment Procedures
CATHALAC	Water Center for the Humid Tropics of Latin America and the Caribbean
CCAD	Central American Commission for Environment and Development
CEADEL	Centro de Estudios y Apoyo al Desarrollo Local
CEPREDENAC	Coordinating Center for the Prevention of National Disasters in Central America
CESCCO	Center for the Study and Control of Contaminants
CIAC	Center for Research and Cultural Support
CIAT	Comisión Interamericana del Atún Tropical
CIISA	Centro de Inversiones Internacional, S. A
CITES	Convention on International Trade of Endangered Species of Wild Fauna and Flora
CNPML	Cleaner Production National Centers
CORFOGA	Corporación Ganadera [in Costa Rica]
COVERCO	Commission for the Verification of Corporate Codes of Conduct

CP	Cleaner Production
DIGECA	Environmental Quality Management Directorate
DR	Dominican Republic
EIA	Environmental Impact Assessment
ELE	Environment and Labor Excellence [Program]
EMS	Environmental Management System
ES	El Salvador
FTA	Free Trade Agreement
GICO	Ganaderos Industriales de Costa Rica
GUA	Guatemala
ICI	Industrias Cárnicas Integradas
ILO	International Labor Organization
MAC	Ministry of Agriculture and Cattle
MACESA	Matadero Central, S.A
MAG	Ministry of Agriculture and Livestock
MARN	Ministry of Environment and Natural Resources
MARENA	Ministry of Environment and Natural Resources of Nicaragua
MCC	Millennium Challenge Corporation
MEA	Multi-lateral Environmental Agreements
MINEAT	Ministry of Environment, Energy and Telecommunications
NASA	National Aeronautics and Space Administration
NGO	Non-governmental Organization
NIC	Nicaragua
NOAA	National Oceanic and Atmospheric Administration
OAS	Organization of American States

OSH	Occupational Safety and Health
OSPESCA	Organization of Fishing and Aquaculture in Central America
PASA	Participating Agency Service Agreements
PES	Payment for Ecosystem Services
PRTR	Pollutant Release and Transfer Registers
RA	Rainforest Alliance
RENAEPA	National Network of Business for Environmental Protection
RETC	Register of Emissions and Transfer of Contaminants
SAI	Social Accountability International
SAN	Sustainable Agriculture Network
SERNA	Secretariat for Environment and Natural Resources [Honduras]
SERVIR	Regional Visualization and Monitoring System
SETENA	Secretary General of the National Environmental Technical Secretary
SICA	Central American Integration System
SOW	Scope of Work
SUCAP	Supermarket Association of Central America and Panama
UNEP	United Nations Environmental Program
UNITAR	United Nations Institute for Training and Research
USAID	United States Agency for International Development
USAID/E-CAM	United States Agency for International Development – El Salvador and Central America-Mexico Regional Mission
USEPA	United States Environmental Protection Agency (EPA)
USFS	United States Forest Service
USG	United States Government
WADA	Water and Development Alliance
WWF	World Wildlife Fund

# EXECUTIVE SUMMARY

## *Background and Overview*

In August of 2005, the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR) was approved by all parties to eliminate tariffs and trade barriers and expand regional opportunities for workers, manufacturers, consumers, farmers, ranchers, and service providers of the signatory countries<sup>1</sup>. To benefit fully from CAFTA-DR and in coordination with the Environmental Cooperation Agreement (ECA) signed by all Parties in February of 2005, participating countries are required to improve and effectively enforce their labor and environmental laws as stipulated in Chapters 16 (Labor) and 17 (Environment) of the Free Trade Agreement.

Since 2006, the USAID-managed Regional Environmental Cooperation Program (referred to as the “Program”) has been providing assistance to the governments of Central America and the Dominican Republic to promote compliance with the environmental and social conditions of the CAFTA-DR and ECA. The Central American Commission for Environmental and Development (*Comisión Centroamericana de Ambiente y Desarrollo* or CCAD), the U.S. Environmental Protection Agency (USEPA), and the National Aeronautics and Space Administration (NASA) have been core implementers of the program since 2006, and the Environmental and Labor Excellence program for CAFTA-DR (ELE-Chemonics) since 2008.

This report is a qualitative Assessment of the USAID-managed Environmental Cooperation Program that analyzes the extent to which the Program has built local capacity to comply with the environmental provisions of CAFTA-DR and improved the lives of people in the region by the time it ends in September 2012. Although the major focus of this assessment is on the environmental aspects of the program the Assessment team also examined its impact on the adoption of appropriate labor standards by businesses in the CAFTA-DR countries. Over the course of two and half months, the Assessment Team conducted an extensive review of documentation on the program, visited all six CAFTA-DR countries, carried out dozens of visits to project implementation sites, and met with and interviewed over 200 individuals familiar with the programs under review.

## *Assessment of Program Performance*

The cumulative accomplishments, reported in CCAD’s Quarterly Report for January-March of 2011 and ELE-Chemonics’ Quarterly Report for April-June 2011, indicate a very high rate of success in completing programmed activities. Most indicators (26 for CCAD- and 31 for ELE-Chemonics) show that 100% or more of the targets have been reached. Those indicators that have not been completed are nonetheless all progressing and will probably be accomplished as planned by the end of September 2011 for Chemonics and in August 2012 in CCAD’s case. USEPA and NASA quarterly reports were reviewed, but they were not cumulative. It should be noted, as previous assessment reports have observed, that many of the indicators measure outputs (i.e. courses held, numbers of people trained, legal compendiums compiled) rather than results or impacts, which in many cases will not be measurable for some time.

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<sup>1</sup> Signatory countries include: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States America.

*Improved Environmental Laws, Policies, Regulations and Procedures*

CCAD, USEPA, and ELE-Chemonics have worked with all six CAFTA-DR countries on strengthening the legal framework for wastewater management. Support has been provided through a number of activities, and highlights include: legal and technical assistance on the implementation of the Regional Wastewater Regulation Model, developing mechanisms for the establishment of wastewater performance standards; strengthening of laboratories for wastewater analyses; developing an Appropriate and Sustainable Wastewater Treatment Manual for the Region; and developing regulations for sludge management and disposal.

As a result of this support, Costa Rica has finished updating its wastewater regulations, using the Regional Wastewater Regulation Model approved in 2005 by the CCAD Council of Environment Ministers, and it has almost finished a national sludge regulation instrument. Nicaragua has finished drafting its national wastewater regulations and is awaiting the presidential decree needed to bring the regulation into effect. Honduras is actively revising the final draft of its national wastewater regulation to incorporate provisions on sludge management and disposal, and it is expected to be promulgated by the end of 2011. All six countries received support from USEPA to strengthen the process for laboratories to raise their standards and compete to become a Reference Laboratory. The main results are 1) one “Regional Reference Laboratory” (Centro de Investigación en Contaminación Ambiental, Universidad de Costa Rica (CICA-UCR) was designated in Costa Rica and 2) four “National Reference Laboratories” were designated in El Salvador (Administración Nacional de Acueductos y Alcantarillados, ANDA), Guatemala (Laboratorio Nacional de Salud), Nicaragua (Centro para la Investigación de los Recursos Acuáticos de Nicaragua de la Universidad de Nicaragua, CIRA-UNAN), and Costa Rica, Instituto Costarricense de Acueductos y Alcantarillados, AYA).

CCAD and USEPA provided technical assistance to control the use, storage and recycling of mercury (a chemical and hazardous substance) in Costa Rica’s Children’s Hospital and one hospital in Honduras. Principal results include (1) hospital inventories detailing where Mercury is located and in what quantities, (2) changing procurement procedures (“no Hg”) so that less hospital equipment contains Hg in the future, and (3) reduced risk of poisoning because of the development of manuals on safer storage procedures and managing Hg spills.

With CCAD, the work on solid waste has included updating policy (Nicaragua and El Salvador), working on draft legislation (Costa Rica), updating norms and regulations (Nicaragua), developing inspection protocols and audits for landfills (Costa Rica and El Salvador), and preparing guides (almost finished) for the construction and operation of landfills (Costa Rica and El Salvador, the only countries with landfills, as opposed to “waste dumps”). To increase the value of solid waste, CCAD has helped promote the web-based commodity exchange for solid waste, BORSICCA (Industrial Waste Exchange for Central America and the Caribbean). With the Dominican Republic’s joining BORSICCA in June of 2011, all CAFTA-DR countries are now members of this initiative.

### *Strengthened Environmental Law Enforcement*

The main weakness identified by the various *fiscales* or prosecutors interviewed in the region concerned a lack of awareness and technical knowledge about environmental issues, especially among judges, but also among the public in general. This Program has helped strengthen the work of prosecutors and judges through training as well as the compilation of legal reference materials. ELE-Chemonics organized train-the-trainers courses on environmental criminal law that were delivered in five of the six countries (excluding Honduras because of the political crisis there). In addition to prosecutors and judges, investigators from the national police and prosecutors' staff also attended the courses. The courses were adapted to each country's legal framework and mechanisms of compliance, so the course material could be more readily applied by the participants and more easily incorporated into the countries' university curriculums. In addition, CCAD organized a regional course on the critical topic of assessing the costs of environmental damage.

Through the support of ELE-Chemonics, a regional legal compendium was prepared and made available to all environmental prosecutors in each country, together with a national compilation of environmental jurisprudence (case histories). Access to case histories provides critical guidance to judges when there are gaps or ambiguities in the law. A number of prosecutors mentioned that the printed document provided added value, because many judges in the region still do not have access to the internet access or even a computer in their offices.

### *Improved Environmental Impact Assessment (EIA) Processes*

An effective EIA process is at the core of helping the CAFTA-DR countries avoid significant negative environmental impacts from the increased economic activity that the free trade agreement is likely to be stimulating. This component of the Program was implemented by the various ministries of environment of the CAFTA-DR countries, CCAD, USEPA, and the Environmental and Labor Excellence component of USAID's regional program. USEPA provided training on the principles of EIA review processes primarily directed to the staff of the CAFTA-DR ministries of environment while ELE provided training for primarily for businesses, various sectors of business, universities, and environmental consultants. Our interviews with participants in courses consistently confirmed the relevance of their content and suitability of the methodology. In our estimation, the EIA courses improved the participating countries' capacity to manage the EIA process.

USEPA also contributed to the strengthening of the legal and regulatory framework for the EIA process. As USEPA has itself noted, many additional improvements to the EIA process, such as a more effective process for public participation, are still needed in the CAFTA-DR countries. The document "Recommendations to Strengthen EIA Review", which was developed in consultation with the EIA Directors from the six CAFTA-DR countries, makes 27 recommendations for improving their EIA process in four areas: (1) institutional reforms; (2) decision making; (3) decision-making at the level of projects; and (4) public participation. Each of the countries will prepare its own action plan and identify two projects that the CAFTA-DR program will fund through CCAD.

USEPA also supported a process for the drafting of technical EIA review guidelines in mining, energy and tourism and training government officials in their use. The Assessment Team cannot

comment in detail on the technical quality of the three guidelines, but notes that they were prepared through a highly effective, collaborative process that, so far as could be determined, involved the right people in each country and the principal experts in the sector in the U.S. government.

The Program financed new or improved administrative tracking systems for environmental impact assessments in all the CAFTA-DR countries except Nicaragua (where a satisfactory system was already in place). The administrative tracking system for EIAs has been only recently installed, but they promise to be highly successful in addressing one of the principal problems of the ministries of environment: delays in processing and difficulty in keeping track of their paperwork. The administrative tracking system has increased transparency and efficiency as well as reduced costs.

The program work plan also calls for the deployment of the NEPAAssist system (USEPA) in at least four CAFTA-DR countries by the end of the ELE Program. NEPAAssist is a tool developed by USEPA and based on Geographic Information Systems that supports instant access, integration and analysis of information in support of EIA review and preparation. The NEPAAssist platform appears to have great utility for preparing EIAs of higher technical quality but its actual utility cannot be evaluated until the program is fully functioning in one or more of the CAFTA-DR countries. The system has been installed in El Salvador, Costa Rica, Dominican Republic, and Nicaragua, and will be installed in Honduras and Guatemala in late 2011.

In order to improve the quality of environmental impact assessments and the degree of compliance with environmental management plans, the Program has improved the implementation of environmental audits in all the CAFTA-DR countries. CCAD helped develop a regional model for environmental auditing as well a system for registering and certifying environmental service providers to help ensure compliance with environmental management plans and the quality of EIAs.

#### *Improved Accessibility and Quality of Information*

Under USEPA's Air Quality Management Program, CCAD and USEPA have provided specialized training on "Management of Air Quality", "Quality Assurance", "Air Quality Modeling" and "Development of Emission Inventories for Air Quality" to all six countries. Additionally, the Program provided specialized equipment for Costa Rica and Guatemala to start their emissions inventories. Costa Rica finished their first inventory of criteria contaminants for the metropolitan area of San Jose in 2007. Subsequent inventories will be taken in Guatemala, El Salvador, Nicaragua and the Dominican Republic with CCAD technical support. With the results of an air quality inventory, government authorities are in a position to assess the impacts on total emissions from changes in types of fuel, the number of vehicles on the road per day, the types and ages of vehicles, and other variables, and can make policy changes that will improve the urban environment and reduce health risks and the incidence of respiratory diseases.

SERVIR is an internet based platform that integrates satellite and other geospatial data for improved scientific knowledge and decision-making by managers, researchers, students and the general public. In partnership with NASA and USAID, the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), SERVIR program provides historical analyses and data, crucial, time-sensitive satellite-based information, interactive web-based

products and tools, information on current environmental and weather conditions. Additionally, SERVIR helps institutions monitor and forecast environmental changes and improve response to natural disasters in Central America and the DR.

SERVIR is an important service for the institutions of Central America, and the support from USAID under CAFTA-DR has built the capacity of CATHALAC. In the opinion of Dr. Emilio Sempri, the Director of CATHALAC, "...the equipment has certainly contributed to development of regional capacities and has augmented CATHALAC's infrastructure." After 6 years of work, SERVIR has "responded to some 48 extreme events across Mesoamerica, the Caribbean, and South America including: floods, tropical storms, hurricanes, earthquakes, fires, and volcanic eruptions resulting in millions of dollars in savings."

### *Improved Private Sector Environmental Performance*

This component of the Program assists private businesses to adopt environmental management systems (EMS) and cleaner production practices and technologies (CP). In addition to improving a company's environmental performance by optimizing water and energy consumption and reducing the generation of solid wastes and contaminants, the introduction of CP and EMS processes and technologies also increases profits by decreasing operating costs and/or producing new sources of income. Overall, this component has provided excellent assistance to improve the environmental performance of sectors that are important to the economies of the CAFTA-DR countries. Although the Program has assisted over 150 companies reduce costs and increase profits, especially through savings in the use of energy and water. We were able to document the success of a number of companies in improving their environmental performance and believe that this component of the Program has considerable potential to benefit a greater number and wider variety of businesses.

Although cost savings is the number one driver of the adoption of cleaner technology and practices, it is apparent that cleaner production practices and technologies tend to be more widely and rapidly adopted by businesses when they are introduced through sector-wide associations and with the close cooperation of government agencies, rather than through assistance to individual companies. The Program has provided cleaner production technical advisors through the Cleaner Production Centers, CCAD, and ELE-Chemonics. We were consistently told that the technical advisors were highly experienced and technically competent and had provided extremely useful technical advice to the companies or institutions we consulted. The CAFTA-DR Trade Meeting on Cleaner Production that CCAD helped organize in San Salvador in March of 2011 also appears to have been an effective means of promoting Cleaner Production. The event brought together business representatives from throughout the region to and according to CCAD, resulted in some 500 business meetings and deals worth over US \$6 million.

The Cleaner Production Centers in El Salvador, Guatemala, Nicaragua, and Honduras and at the University of Costa Rica are providing excellent technical assistance in cleaner production to businesses and are national institutions, which can become permanent sources of technical advice in cleaner production technologies and continually accumulate experience and deepen and widen their inter-institutional ties. The Program has supported a number of training activities and has helped introduce cleaner production into the curriculum in universities in the CAFTA-DR countries. We received uniformly positive comments about the quality and usefulness of the

training courses in cleaner production and EMS. Governments can encourage the adoption of cleaner production technologies by supporting recognition of companies that have implemented environmentally sound practices. We found that the Program has provided useful assistance in support of both national and regional competitive Cleaner Production Awards.

The Program also supported the adoption by all the CAFTA - DR countries of a regional strategy for cleaner production. The strategy establishes clear priorities for actions that will both improve the environmental performance of the private sector and increase their competitiveness in international markets.

A final objective of this component of the Program was to promote voluntary private alliances between buyers and producers/processors for the adoption of voluntary environment and labor standards. We found a number of instances where the Program had successfully promoted alliances that are likely to have a positive effect on compliance with environmental standards. As of June 2011, these agreements encompass a total of 179 producers located in Guatemala, Nicaragua, Costa Rica and El Salvador. The alliances were developed in five different productive sectors (fruits, vegetables, seafood, sugarcane and cattle) between different stakeholders in the value chain.

The application of better management practices helped producers and processors meet and often exceed new national environmental and labor standards, and offered commercial advantages by giving them access to a "differentiated products" markets. Stronger efforts need to be made to raise awareness of the importance of labor standards compliance in these activities. Where compliance has been accomplished, especially improvements in Occupational Safety and Health, it often appears to be a by-product of other improvements, and not as a planned. But where better management practices are introduced there appears to be a healthy complementarity between promoting compliance with labor standards in tandem with cleaner production that should be taken advantage of.

### ***Conclusions and Recommendations***

The Regional Environmental Program represents a considerable administrative challenge, working as it does with dozens of lines of activity in six different countries, each with multiple stakeholders and diverse implementing partners, contractors, or sub-contractors. There are inherent inefficiencies in taking on so many objectives at one time, and the number of projects and implementers at times have stretched the absorptive capacity of the beneficiary countries, in particular in the region's poorly funded and thinly staffed environmental ministries

#### ***Institutional Relations and Implementing Agencies:***

- USAID Bilateral Missions and E-CAM communication and coordination have been uneven, but is generally seen as having improved in recent months. Planned regional activities have not always been consulted or adequately communicated with the USAID bilateral mission in whose area they are to take place.
- As a multilateral political institution, CCAD may have limitations as an implementing agency because of its very nature as a multilateral political institution. But its political nature also gives it the advantage of enjoying political support and buy-in for its activities. CCAD offers an institutional platform and continuity, backed by the ministers of

environment, which enables them to implement as well as monitor and follow up on programs in process. We found the CAFTA-DR unit of CCAD to be an effective implementer, providing good quality products and programs. CCAD needs to absorb the capabilities of the unit into its permanent structure so that it will be able to fulfill its critical role in promoting the continuation and expansion of the types of activities that the Program has conducted.

- ELE-Chemonics was able to deploy highly qualified technical expertise and work closely with the private sector, and was generally able to deliver products in a timely and effective manner. As a rule, the participants and beneficiaries of programs implemented under ELE expressed considerable satisfaction with their quality and usefulness. When CCAD and ELE-Chemonics coordinated their activities, as they did in several complementary efforts in support of Cleaner Production, the results were quite effective. ELE-Chemonics provided excellent support to USEPA, enabling them to move much faster in the implementation phase of the regional wastewater regulatory model (post 2005) as well as other technical areas.
- The EPA portion of the program was slow to start, but by the time we began our assessment the overall satisfaction with their work was consistently very high. Interviewees cited the professionalism of the USEPA teams, their outstanding technical qualifications, and the collaborative approach they took to working with their regional counterparts and the implementing agencies.
- As an implementing partner, NASA has had a relatively limited presence on the ground, but has provided indispensable technological capability and scientific support in creating and sustaining SERVIR, the regional program that combines satellite and ground-based data with forecast models to monitor and forecast environmental changes and improve response to natural disasters.

#### *Science and Technology:*

The application of science and technology in the CAFTA-DR countries is the principal means by which they will be able to combine economic growth with the protection of their natural environments. We found that the Program has achieved significant results in assisting the CAFTA-DR countries to apply science and technology to: (1) cleaner production and environmental management systems; (2) adaptive management of renewable natural resources, especially water, fish and forests; (3) preparation for natural disasters; and (4) improved internal and regional communication for planning, monitoring, and implementing environmental activities. In the process, USAID E-CAM has gained invaluable experience in how to assist the CAFTA-DR countries to design and implement these types of programs. The Program, however, has had limited financing over the five years of implementation and when it ends in September 2012, the CAFTA-DR countries' institutional capacity for incorporating science and technology into productive processes together with environmental protection will remain incipient.

#### *Links between Environmental and Labor Standards:*

Improved labor conditions and standards appear to have been in most cases a serendipitous by-product of the Program's efforts to improve environmental standards and performance. The activities of the Program related to voluntary labor and environmental certifications, aimed at

reducing costs, increasing economic benefits and the number of workers benefitting from improved working conditions. Both CCAD and ELE stated that improving labor standards was not in their Scopes of Work, yet there has been progress in labor compliance in all CAFTA-DR countries as the result of the Program's activities. This is a win-win result, possibly accidental, where the outcomes are good for business, good for the environment, and good for working people. A planned integration of these interrelated goals might have achieved much more.

## **Recommendations**

*Recommendation No. 1: Find resources that can maintain some level of USEPA assistance in the region should be a high priority.*

EPA's work has proved highly effective, and very much appreciated by the participating countries. While EPA may not be able to keep a permanent presence in the region, it is imperative that upper management at the CAFTA-DR environmental government institutions continue to support the drafting, implementing and enforcing of environmental laws and regulations. A constant regional institutional presence like CCAD can minimize the loss of institutional knowledge and commitment during transitional periods of old and new administrations. CCAD can also play a critical role, as it has already done, in supporting U.S. agencies (such as USEPA) who are implementing future programs in the region.

*Recommendation No. 2: Strengthen the environmental impact assessment process further.*

In general, the Program has been very successful in strengthening the offices that manage Environmental Impact Assessments, but continued technical assistance and further training from USEPA would help to ensure that these achievements are consolidated and sustainable in each of the CAFTA-DR countries. The EIA tracking systems need to be made fully functional, and the staffs that operate them need to be fully trained and sufficient in numbers.

*Recommendation No. 3: Strengthen the institutions that can best promote cleaner production.*

Cleaner Production and Environmental Management Systems are another area that are likely to yield significant results with sustained support, especially if that support can be provided through institutional structures such as the Centers for Cleaner Production, universities, and business associations, which are more likely to reach a wider pool of businesses and be more sustainable. Developing mechanisms for smaller businesses to get financing for investments in cleaner technology would contribute substantially to the Program's growth and impact.

*Recommendation No. 4: Add a public education component to future environmental programs.*

In most of the CAFTA-DR region, awareness of environmental problems and the consequences of ignoring them are weak, as is the market for "green" products that can give further stimulus to cleaner production. Public education campaigns can promote more responsible public behavior, reduce tolerance for environmental abuses, and increased reporting and prosecution of environmental transgressions.

*Recommendation No. 5: Consider restructuring SERVIR and how its services are managed.*

SERVIR provides valuable services, but they are not as widely accessible or as user friendly as they could be. USAID may want to consider alternative models for structuring SERVIR and how it manages access to its data, including decentralizing its management. Stakeholder countries should have greater ownership and a greater say in how this important regional resource and public service is managed.

*Recommendation No. 6: Continue to assist CAFTA-DR countries in drafting, implementing, and enforcing environmental laws and regulations.*

CAFTA-DR requires the countries to implement environmental laws and regulations effectively, and improving the environmental laws and regulations and their enforcement has been a principal activity under the Program, with good results to date. The task, however, will be far from completed when the Program ends.

*Recommendation No. 7: Seek climate change and/or Feed the Future funding for applicable activities and programs.*

Also looking to the future, the other major challenge is Central America's high level of vulnerability to the effects of global climate change and extreme weather. With *Adaptation*, *Clean Energy*, and *Sustainable Landscapes* serving as the pillars of USAID climate change policy, the USAID CAFTA-DR environmental programs have relevance and many linkages to the Agency's overarching climate change initiative. Any extension of CAFTA-DR environmental programming should aim to incorporate the threats and effects of climate change into environmental decision-making in all the countries, such as incorporating climate change as a consideration when conducting environmental impact assessment. Key to justifying continued support for many of the typically labeled "brown" issues that CAFTA-DR environmental programs have been addressing, will be understanding the complexity of **climate resilience**.

# RESUMEN EJECUTIVO

## *Antecedentes y Generalidades*

En agosto del 2005, el Tratado de Libre Comercio entre la República Dominicana, Centroamérica y Estados Unidos (DR-CAFTA) fue aprobado por todas las partes para eliminar aranceles y barreras comerciales y expandir las oportunidades regionales para los trabajadores, consumidores, agricultores, y proveedores de servicios de los países signatarios<sup>2</sup>. Para beneficiarse completamente del DR-CAFTA y en coordinación con el Acuerdo de Cooperación Ambiental (ACA) firmado por todas las partes en febrero del 2005, a los países participantes se les requiere mejorar y aplicar de manera efectiva su legislación laboral y ambiental según se establece en los Capítulos 16 (Laboral) y 17 (Ambiental) del Tratado de Libre Comercio.

Desde el 2006, el Programa Regional de Cooperación Ambiental manejado por USAID (referido como el “Programa”) ha estado proveyendo asistencia a los gobiernos de Centroamérica y la República Dominicana para promover el cumplimiento con las condiciones ambientales y sociales del DR-CAFTA y el ACA. La Comisión Centroamericana de Ambiente y Desarrollo o CCAD, la Agencia de Protección Ambiental de EE.UU. (USEPA), y la Administración Nacional de Aeronáutica y Espacio (National Aeronautics and Space Administration – NASA) han sido los ejecutores centrales del programa desde el 2006, y el Programa para la Excelencia Ambiental y Laboral para el DR-CAFTA (ELE-Chemonics) desde el 2008.

Este informe es una evaluación cualitativa del Programa de Cooperación Ambiental manejado por USAID, que analiza el grado hasta el cual el Programa ha fortalecido la capacidad local para cumplir con las disposiciones ambientales del DR-CAFTA y mejorado las vidas de las personas en la región, al momento de su finalización en septiembre del 2012. Aunque el enfoque principal de esta evaluación está en los aspectos ambientales del programa, el Equipo de Evaluación también examinó su impacto en la adopción de estándares laborales adecuados por parte de las empresas en los países del DR-CAFTA. Durante el transcurso de dos meses y medio, el Equipo de Evaluación realizó una revisión extensa de la documentación en el programa, visitó los seis países DR-CAFTA, llevó a cabo docenas de visitas a los sitios de implementación del proyecto, y se reunió y entrevistó a más de 200 individuos que estaban familiarizados con los programas bajo revisión.

## *Evaluación del Desempeño del Programa*

Los logros acumulados, reportados en el Informe Trimestral de la CCAD para Enero – Marzo del 2011 y el Informe Trimestral de ELE-Chemonics para Abril – Junio 2011, indican una alta tasa de éxito en completar las actividades programadas. La mayoría de los indicadores (26 para CCAD y 31 para ELE-Chemonics) muestran que 100% o más de las metas han sido alcanzadas. Aquellos indicadores que aun no han sido completados están, no obstante, progresando y probablemente estarán cumplidos según lo planificado para el final de septiembre del 2011 para Chemonics, y en agosto del 2012 en el caso de CCAD. Los reportes trimestrales de USEPA y NASA fueron revisados, pero no eran acumulativos. Debe ser notado, según ha sido observado

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<sup>2</sup> Los países signatarios incluyen: Costa Rica, República Dominicana, El Salvador, Guatemala, Honduras, Nicaragua y los Estados Unidos de América.

en informes de evaluación anteriores, que muchos de los indicadores miden actividades (ej. cursos realizados, cantidad de personas entrenadas, recopilaciones de compendios legales) en lugar de resultados o impactos, lo que en muchos casos no será medible por algún tiempo.

#### *Leyes, Políticas, Regulaciones y Procedimientos Ambientales Mejorados*

CCAD, USEPA y ELE-Chemonics han trabajado con los seis países DR-CAFTA en el fortalecimiento del marco legal para el manejo de aguas residuales. La asistencia ha sido provista a través de varias actividades, y las que resaltan incluyen: asistencia legal y técnica sobre la implementación del Modelo Regional de Regulación de Aguas Residuales, el desarrollo de mecanismos para el establecimiento de estándares de desempeño de aguas residuales; fortalecimiento de laboratorios de análisis de aguas residuales; desarrollo de un Manual de Tratamiento de Aguas Residuales Apropriado y Sostenible para la Región; y el desarrollo de reglamentos para el manejo y disposición final de lodos.

Como resultado de esta asistencia, Costa Rica ha terminado de actualizar sus reglamentos sobre aguas residuales, utilizando el Modelo Regional de Regulación de Aguas Residuales aprobado en el 2005 por el Consejo de Ministros Ambientales del CCAD, y casi ha terminado el instrumento nacional de regulación de lodos. Nicaragua ha terminado la redacción de los reglamentos nacionales sobre aguas residuales y está esperando el decreto presidencial necesario para poner en vigor el reglamento. Honduras está revisando activamente el borrador final de su reglamento nacional de aguas residuales para incorporar disposiciones sobre manejo y disposición final de lodos y se espera que sea promulgada para finales del 2011. Los seis países recibieron asistencia de USEPA para fortalecer el proceso por el cual los laboratorios incrementan sus estándares y compiten para convertirse en un Laboratorio de Referencia. Los resultados principales son: 1) un “Laboratorio de Referencia Regional” (Centro de Investigación en Contaminación Ambiental Universidad de Costa Rica (CICA-UCR) fue designado en Costa Rica; y 2) cuatro “Laboratorios Nacionales de Referencia” fueron designados en El Salvador (Administración Nacional de Acueductos y Alcantarillados - ANDA), Guatemala (Laboratorio Nacional de Salud), Nicaragua (Centro para la Investigación de los Recursos Acuáticos de Nicaragua de la Universidad de Nicaragua, CIRA-UNAN), y Costa Rica, (Instituto Costarricense de Acueductos y Alcantarillados, AYA).

CCAD y USEPA proveyeron asistencia técnica para controlar el uso, almacenamiento y reciclaje de mercurio (una sustancia química y peligrosa) en el Hospital de Niños de Costa Rica y un hospital en Honduras. Los resultados principales incluyen: (1) inventarios de hospitales detallando donde y en qué cantidades está localizado el mercurio, (2) cambio en los procedimientos de compras (“no Hg”) de forma que menos equipos de hospital contengan Hg en el futuro, y (3) riesgo reducido de envenenamiento debido al desarrollo de manuales sobre procedimientos de almacenamiento seguro y manejo de derrames de Hg.

Con CCAD, el trabajo sobre derechos sólidos ha incluido la actualización de políticas (Nicaragua y El Salvador), trabajar en borradores de proyectos legislativos (Costa Rica), la actualización de normas y reglamentos (Nicaragua), el desarrollo de protocolos de inspección y auditorías para rellenos sanitarios (Costa Rica y El Salvador), y preparación de guías (casi terminado) para la construcción y operación de rellenos sanitarios (Costa Rica y El Salvador, los únicos países con rellenos sanitarios, a diferencia de “botaderos a cielo abierto”). Para incrementar el valor de los desechos sólidos, CCAD ha ayudado a promover la bolsa de intercambio de productos basada en

la web para los desechos sólidos, BORSICCA (Bolsa de Intercambio de Desechos Industriales para Centroamérica y el Caribe). Con el ingreso de la República Dominicana a BORSICCA en junio del 2011, todos los países del DR-CAFTA son ahora miembros de esta iniciativa.

#### *Fortalecimiento en la Ejecución de la Ley Ambiental*

Las principales debilidades identificadas por varios fiscales entrevistados en la región se relacionan a la falta de conciencia y de conocimientos técnicos sobre los temas ambientales, especialmente entre los jueces, pero también entre el público en general. Este Programa ha ayudado a fortalecer el trabajo de los fiscales y jueces a través de entrenamientos, así como también la recopilación de material de referencia jurídica. ELE-Chemonics organizó cursos de ‘entrenando a entrenadores’ sobre legislación criminal ambiental que fueron ofrecidos en cinco de los seis países (excluyendo Honduras debido a la crisis política existente). En adición a los fiscales y jueces, los investigadores de la policía nacional y el personal de la fiscalía también asistieron a los cursos. Los cursos fueron adaptados al marco legal y a los mecanismos de cumplimiento de cada país, para que el material del curso pudiera ser aplicado más fácilmente por los participantes e incorporado con más facilidad en los currículos universitarios de los países. Adicionalmente, CCAD organizó un curso regional sobre el tema crítico de evaluación de los costos del daño ambiental.

A través de la asistencia de ELE-Chemonics, se preparó un compendio legal regional que fue puesto a disposición de todos los fiscales ambientales de cada país, junto con una compilación nacional de jurisprudencia ambiental (historias de casos). El acceso a las historias de casos provee una guía crítica a los jueces cuando existen brechas o ambigüedades en la ley. Varios fiscales mencionaron que el documento impreso que fue provisto le añade valor, debido a que muchos jueces en la región aun no tienen acceso a internet e incluso a una computadora en sus oficinas.

#### *Procesos Mejorados de Evaluación de Impacto Ambiental (EIA)*

Un proceso efectivo de EIA es el enfoque central de la asistencia para que los países DR-CAFTA logren evitar impactos ambientales significativamente negativos debido al incremento de la actividad económica que el tratado de libre comercio puede estimular. Este componente del Programa fue implementado por varios ministros de ambiente de los países DR-CAFTA, CCAD, USEPA, y el componente de Excelencia Ambiental y Laboral del programa regional de USAID. USEPA proveyó entrenamiento sobre los principios de los procesos de revisión de EIA principalmente para negocios, varios sectores empresariales, universidades, y consultores ambientales. Nuestras entrevistas con los participantes en los cursos confirmaron de manera consistente la importancia de su contenido y la idoneidad de la metodología. En nuestra opinión, los cursos de EIA mejoraron la capacidad de los países participantes de manejar el proceso de EIA. USEPA también contribuyó al fortalecimiento del marco legal y regulatorio para el proceso de EIA. Como la propia USEPA ha señalado, muchas mejoras adicionales al proceso de EIA, tales como un proceso más efectivo para la participación pública, todavía son necesarios en los países DR-CAFTA. El documento “Recomendaciones para Fortalecer la Revisión de EIA”, el cual fue desarrollado en consulta con los Directores de EIA de los seis países DR-CAFTA, consta de 27 recomendaciones para mejorar los procesos de EIA en cuatro áreas: (1) reformas institucionales; (2) toma de decisiones; (3) toma de decisiones a nivel de proyectos; y (4) participación pública. Cada uno de los países preparará su propio plan de acción e identificará dos proyectos que el programa DR-CAFTA financiará a través de CCAD.

USEPA también proveyó asistencia al proceso de redacción de lineamientos técnicos de revisión de EIA en minería, energía y turismo, y entrenó a oficiales del gobierno sobre su uso. El Equipo de Evaluación no puede comentar en detalle sobre la calidad técnica de los tres lineamientos, pero hacen el señalamiento que fueron preparados a través de un proceso colaborativo, altamente efectivo que, hasta donde pudo ser determinado, involucró a las personas correctas de cada país y a los principales expertos del sector en el gobierno de EE.UU.

El Programa financió sistemas de seguimiento administrativo nuevos o mejorados para las evaluaciones de impacto ambiental en todos los países del DR-CAFTA, con excepción de Nicaragua (donde un sistema satisfactorio ya estaba en marcha). Los sistemas de seguimiento administrativo para los EIAs fueron instalados recientemente, pero prometen ser altamente exitosos en abordar uno de los problemas principales de los ministerios de ambiente; los retrasos en el procesamiento y la dificultad de dar seguimiento al flujo de documentos. Este sistema de seguimiento administrativo ha aumentado la transparencia y la eficiencia, así como ha reducido los costos.

El plan de trabajo del programa también establece el despliegue del sistema NEPAssist (USEPA) en por lo menos cuatro de los países DR-CAFTA para el final del Programa ELE. NEPAssist es una herramienta desarrollada por USEPA y basada en Sistemas de Información Geográfico que apoyan el acceso instantáneo, la integración y el análisis de la información en apoyo de la revisión y preparación del EIA. La plataforma NEPAssist parece que tiene una gran utilidad para la preparación de EIAs de una mayor calidad técnica, pero su utilidad real no puede ser evaluada hasta que el programa esté funcionando por completo en uno o más de los países DR-CAFTA. El sistema ha sido instalado en El Salvador, Costa Rica, República Dominicana y Nicaragua, y será instalado en Honduras y Guatemala a finales del 2011.

A fin de mejorar la calidad de las evaluaciones de impacto ambiental y el grado de cumplimiento con los planes de manejo ambiental, el Programa ha mejorado la implementación de las auditorías ambientales en todos los países DR-CAFTA. CCAD ayudó a desarrollar un modelo regional para las auditorías ambientales así como un sistema para registrar y certificar prestadores de servicios ambientales para ayudar a asegurar el cumplimiento con los planes de manejo ambiental y la calidad de los EIAs.

#### *Acceso y Calidad de Información Mejorados*

Bajo el Programa de Manejo de Calidad de Aire USEPA, CCAD y USEPA han provisto entrenamiento especializado sobre “Manejo de la Calidad del Aire”, “Aseguramiento de Calidad”, Modelación de Calidad de Aire” y “Levantamiento de Inventarios de Emisiones para la Calidad del Aire” en los seis países. De manera adicional, el Programa proveyó equipos especializados para que Costa Rica y Guatemala empezaran sus inventarios de emisiones. Costa Rica terminó su primer inventario de contaminantes para el área metropolitana de San José en el 2007. Inventarios subsecuentes serán realizados en Guatemala, El Salvador, Nicaragua y la República Dominicana con la asistencia técnica de CCAD. Con los resultados de un inventario de calidad del aire, las autoridades del gobierno están preparados para evaluar los impactos en las emisiones totales desde cambios en los tipos de combustibles, el número de vehículos diarios en las calles, los tipos y edades de los vehículos, y otras variables, y podrán hacer cambios de políticas que mejorarán el ambiente urbano y reducirán los riesgos sanitarios y la incidencia de las enfermedades respiratorias.

SERVIR es una plataforma basada en internet que integra los datos satelitales y otros datos geoespaciales para la mejora del conocimiento científico y la toma de decisiones por parte de gerentes, investigadores, estudiantes y el público en general. En alianza con NASA y USAID, el Centro del Agua del Trópico Húmedo para América Latina y el Caribe CATHALAC), el programa SERVIR provee análisis y datos históricos, información crucial y oportuna basada en satélites, productos y herramientas interactivos basados en la web, información sobre las condiciones ambientales y meteorológicas actuales. Adicionalmente, SERVIR ayuda a las instituciones a monitorear y predecir los cambios ambientales y a mejorar las respuestas a los desastres naturales en Centroamérica y la RD.

SERVIR es un importante servicio para las instituciones de Centroamérica, y la asistencia de USAID bajo el DR-CAFTA ha fortalecido la capacidad de CATHALAC. En la opinión del Dr. Emilio Sempris, Director de CATHALAC, "...el equipo ciertamente ha contribuido a desarrollar las capacidades regionales y ha aumentado la infraestructura de CATHALAC". Después de 6 años de trabajo, SERVIR ha "respondido a algunos 48 eventos extremos en toda Mesoamérica, el Caribe, y Sur América, incluyendo: inundaciones, tormentas tropicales, huracanes, terremotos, fuegos, y erupciones volcánicas, resultando en millones de dólares en ahorro".

#### *Desempeño Ambiental Mejorado del Sector Privado*

Este componente del Programa asiste a las empresas privadas a adoptar sistemas de manejo ambiental (EMS) y prácticas y tecnologías de producción más limpias (PL). Adicionalmente a la mejora del desempeño ambiental de una compañía mediante la optimización de los consumos de agua y energía, y la reducción de la generación de desechos sólidos y contaminantes, la introducción de procesos y tecnologías de PL y EMS también incrementan las ganancias al disminuir los costos de operación y/o producir nuevas fuentes de ingresos. En general, este componente ha provisto una asistencia excelente para mejorar el desempeño ambiental de los sectores que son importantes para las economías de los países DR-CAFTA. El Programa ha asistido a más de 150 compañías a reducir los costos y a incrementar las ganancias, especialmente a través de ahorros en el uso de energía y agua. Nosotros hemos podido documentar el éxito de una cantidad de compañías en el mejoramiento de su desempeño ambiental y creemos que este componente del Programa tiene un potencial considerable para beneficiar a un mayor número y a una más amplia variedad de empresas.

A pesar de que los ahorros en los costos son el motor de impulso número uno para la adopción de tecnologías y prácticas más limpias, es aparente que las prácticas y tecnologías de producción más limpias tienden a ser adoptadas más ampliamente y con mayor rapidez por las empresas cuando son introducidas a través de asociaciones sectorialmente amplias y con la estrecha cooperación de las agencias del gobierno, en lugar de la asistencia de compañías individuales. El Programa ha provisto consultores técnicos de producción más limpia a través de los Centros de Producción Más Limpia, CCAD, y ELE-Chemonics. Nosotros hemos sido informados de manera consistente que los consultores técnicos contaban con una alta experiencia, que eran técnicamente competentes, y que habían provisto asesoría técnica extremadamente útil a las compañías o instituciones que consultamos. La Reunión de Comercio de Producción Más Limpia del DR-CAFTA, que CCAD ayudó a organizar en El Salvador en marzo del 2011, también parece que resultó ser un medio efectivo para promocionar la producción más limpia. El evento unió a representantes de negocios de toda la región y de acuerdo a CCAD, resultó en

aproximadamente 500 ruedas de negocios, y negocios valorados en más de \$6 millones de dólares.

Los Centros de Producción Más Limpia en El Salvador, Guatemala, Nicaragua, y Honduras y en la Universidad de Costa Rica están ofreciendo una asistencia técnica excelente en producción más limpia a empresas, y son instituciones nacionales que pueden convertirse en fuentes permanentes de asesoría técnica en tecnologías de producción más limpia, y acumular experiencia y profundizar y ampliar sus vínculos interinstitucionales de manera continua. El Programa ha brindado asistencia en varias actividades de entrenamiento y ha ayudado a introducir la producción más limpia en el currículo de las universidades en los países DR-CAFTA. Hemos recibido comentarios positivos de manera uniforme sobre la calidad y utilidad de los cursos de entrenamiento sobre producción más limpia y EMS. Los gobiernos pueden fomentar la adopción de tecnologías de producción más limpia mediante el apoyo al reconocimiento de las compañías que han implementado prácticas ambientales fuertes. Hemos encontrado que el Programa ha provisto asistencia útil en apoyo a los Premios de Producción Más Limpia tanto nacionales como regionales.

Un objetivo final de este componente del Programa fue promover las alianzas privadas voluntarias entre los compradores y productores / procesadores para la adopción de estándares ambientales y laborales voluntarios. Encontramos una cantidad de instancias donde el Programa ha promovido alianzas de manera exitosa, las cuales es probable que tengan un efecto positivo en el cumplimiento de los estándares ambientales. A partir de junio del 2011 estos acuerdos engloban un total de 179 productores localizados en Guatemala, Nicaragua, Costa Rica y El Salvador. Las alianzas fueron desarrolladas en cinco sectores productivos diferentes (frutas, vegetales, mariscos, caña de azúcar y ganado) entre diferentes partes interesadas de la cadena de valor.

La aplicación de mejores prácticas gerenciales ayudó a los productores y procesadores a alcanzar, y a menudo a exceder los estándares ambientales y laborales, y ofreció ventajas comerciales al darles acceso a mercados de “productos diferenciados”. Necesitan hacerse mayores esfuerzos para incrementar la concientización de la importancia del cumplimiento de los estándares laborales en estas actividades. En los casos en que el cumplimiento ha sido alcanzado, especialmente en las mejoras de Seguridad y Sanidad Ocupacional, con frecuencia parece ser un producto derivado de otras mejoras, y no algo planificado. Pero en los casos en que han sido introducidas mejores prácticas gerenciales, parece que hay una complementariedad saludable entre la promoción del cumplimiento de los estándares laborales en tándem con la producción más limpia que debe ser aprovechada.

### ***Conclusiones y Recomendaciones***

El Programa Regional Ambiental representa un reto administrativo considerable, trabajando como lo hace con docenas de líneas de actividades en seis países diferentes, cada uno con múltiples partes interesadas y varios socios de implementación, contratistas y sub-contratistas. Existen deficiencias inherentes en tomar tantos objetivos al mismo tiempo, y el número de proyectos e implementadores a veces ha disminuido la capacidad de absorción de los países beneficiarios, en particular en los ministerios ambientales de la región, que están pobremente financiados y cuentan con poco personal.

*Relaciones Institucionales y Agencias de Implementación:*

- La comunicación y coordinación entre las Misiones Bilaterales de USAID y E-CAM no han sido fluidas, pero es generalmente visto como ha mejorado en los últimos meses. Las actividades regionales planificadas no siempre han sido consultadas o comunicadas de manera adecuada con la misión bilateral de USAID en el área en que deben tener lugar.
- Como una institución política multilateral, CCAD puede tener limitaciones como agencia implementadora debido a su propia naturaleza de institución política multilateral. Pero su naturaleza política también le da la ventaja de disfrutar de un apoyo político y de respaldo para sus actividades. CCAD ofrece una plataforma institucional y continuidad, respaldado por los ministros de ambiente, lo que le permite implementar, así como monitorear y dar seguimiento a los programas en proceso. Hemos encontrado que la unidad de CAFTA-DR de CCAD es un implementador efectivo, que provee productos y programas de buena calidad. CCAD necesita absorber las capacidades de la unidad en su estructura permanente de forma que pueda ser capaz de cumplir con su crítico rol de promover la continuación y expansión de los tipos de actividades que el Programa ha realizado.
- ELE-Chemonics pudo desplegar experiencia técnica altamente calificada y trabajar de cerca con el sector privado, y fue generalmente capaz de entregar productos a tiempo y de manera efectiva. Como regla, los participantes y beneficiarios de los programas implementados bajo ELE expresaron una considerable satisfacción con su calidad y utilidad. Cuando CCAD y ELE coordinaron sus actividades, como lo hicieron en varios esfuerzos complementarios en apoyo a la Producción Más Limpia, los resultados fueron muy efectivos. ELE-Chemonics proveyó un apoyo excelente a USEPA, permitiéndoles moverse mucho más rápido en la fase de implementación del modelo regulatorio de aguas residuales (post 2005) así como en otras áreas técnicas.
- La porción EPA del programa tuvo un lento inicio, pero para el momento en que empezamos nuestra evaluación, la satisfacción general con su trabajo fue consistentemente muy alta. Los entrevistados citaron el profesionalismo de los equipos de USEPA, sus excelentes credenciales técnicas, y el enfoque colaborativo que tomaron para trabajar con sus contrapartes regionales y las agencias de implementación.
- Como un socio de implementación, NASA ha tenido una presencia relativamente limitada en el terreno, pero ha provisto capacidad tecnológica indispensable y apoyo científico en la creación y sostenimiento de SERVIR, el programa regional que combina datos satelitales y datos basados en el terreno con modelos de pronósticos para monitorear y pronosticar cambios ambientales y mejorar la respuesta a los desastres naturales.

*Ciencia y Tecnología:*

La aplicación de ciencia y tecnología en los países DR-CAFTA es el medio principal por el cual ellos podrán combinar el crecimiento económico con la protección de sus ambientes naturales. Hemos encontrado que el Programa ha alcanzado resultados importantes en la asistencia a los países DR-CAFTA para aplicar la ciencia y la tecnología a: (1) producción más limpia y sistemas de manejo ambiental; (2) manejo adaptable de recursos naturales renovables, especialmente agua, peces y bosques; (3) preparación de desastres naturales; y (4) comunicación

interna y regional mejorada para la planificación, el monitoreo, y la implementación de actividades ambientales. En el proceso, USAID E-CAM ha ganado experiencia invaluable en como asistir a los países DR-CAFTA en diseñar e implementar estos tipos de programas. El Programa, sin embargo, ha tenido un financiamiento limitado en los cinco años de implementación y cuando termine en septiembre del 2012, la capacidad institucional de los países DR-CAFTA para incorporar la ciencia y la tecnología en los procesos productivos junto con la protección ambiental permanecerá incipiente.

#### *Vínculos entre Estándares Ambientales y Laborales:*

Las condiciones y los estándares laborales mejorados parecen que han sido en la mayoría de los casos un producto fortuito derivado de los esfuerzos del programa de mejorar los estándares y el desempeño ambiental. Las actividades del Programa relacionadas a trabajo voluntario y certificaciones ambientales, estaban dirigidas a reducir costos, incrementar los beneficios económicos y la cantidad de trabajadores que se benefician de condiciones laborales mejoradas. Tanto CCAD como ELE afirmaron que el mejoramiento de los estándares laborales no estaba en sus Términos de Referencia, pero no obstante había un progreso en el cumplimiento laboral de todos los países DR-CAFTA como resultado de las actividades del Programa. Este es un resultado ganar-ganar, posiblemente accidental, donde los resultados son buenos para los negocios, buenos para el ambiente, y buenos para los trabajadores. Una integración planificada de estas metas interrelacionadas pudo haber alcanzado mucho más.

#### **Recomendaciones**

*Recomendación No. 1: Encontrar recursos que puedan mantener algún nivel de asistencia de USEPA en la región debe ser una prioridad alta.*

El trabajo de EPA ha probado ser altamente efectivo, y muy apreciado por los países participantes. Mientras es posible que EPA no sea capaz de mantener una presencia permanente en la región, es imperativo que la alta gerencia en las instituciones ambientales de gobierno del DR-CAFTA continúe apoyando la redacción, implementación y ejecución de las leyes y regulaciones ambientales. Una presencia regional institucional como la CCAD puede minimizar la pérdida del conocimiento institucional y de compromiso durante los períodos de transición de nuevas y viejas administraciones. CCAD también juega un rol crítico, como lo ha estado haciendo, en apoyar a las agencias de EE.UU. (tales como USEPA) que están implementando programas futuros en la región.

*Recomendación No. 2: Fortalecer más el proceso de evaluación de impacto ambiental.*

En general, el Programa ha sido muy exitoso en el fortalecimiento de las oficinas que manejan las Evaluaciones de Impacto Ambiental, pero la continuación de la asistencia técnica y entrenamiento adicional por parte de USEPA puede ayudar a asegurar que estos logros estén consolidados y sean sostenibles en cada uno de los países DR-CAFTA. Los sistemas de seguimiento EIA necesitan ser completamente funcionales, y el personal que los opera necesita estar completamente entrenado y ser de cantidad suficiente.

*Recomendación No. 3: Fortalecer las instituciones que pueden promover mejor la producción más limpia.*

Los Sistemas de Producción Más Limpia y de Manejo Ambiental son otra área que es probable que alcancen resultados importantes con una asistencia sostenida, especialmente si dicha asistencia puede ser provista a través de las estructuras institucionales tales como los Centros de Producción Más Limpia, universidades, y asociaciones de empresas, las cuales tienen más probabilidad de alcanzar un grupo más amplio de negocios y ser más sostenible. El desarrollo de mecanismos para que los negocios más pequeños obtengan financiamiento para inversiones en tecnología más limpia contribuirá de manera sustancial al crecimiento e impacto del Programa.

*Recomendación No. 4: Agregar un componente de educación pública a los programas ambientales futuros.*

En la mayoría de la región DR-CAFTA, la concientización sobre los problemas ambientales y las consecuencias de ignorarlos son débiles, como lo es el mercado para productos “verdes” que puede dar un estímulo adicional a la producción más limpia. Las campañas de educación pública pueden promover el comportamiento público de manera más responsable, reducir la tolerancia a los abusos ambientales, e incrementar los reportes y la persecución de las violaciones ambientales.

*Recomendación No. 5: Considerar la reestructuración de SERVIR y el manejo de sus servicios.*

SERVIR provee servicios valiosos, pero aun no son tan accesibles o de uso amigable como podrían ser. USAID podría considerar modelos alternativos para estructurar SERVIR y como este maneja el acceso a sus datos, incluyendo descentralizando su manejo. Los países interesados deben tener un sentido de propiedad mayor y más voz con relación a la forma en que es manejado este importante recurso regional y servicio público.

*Recomendación No. 6: Continuar asistiendo a los países DR-CAFTA en redactar, implementar y hacer cumplir la legislación y regulaciones ambientales.*

El DR-CAFTA requiere que los países implementen leyes y regulaciones ambientales de manera efectiva, y mejorar las leyes y regulaciones ambientales y su ejecución ha sido una actividad principal bajo el Programa, con buenos resultados a la fecha. La tarea, sin embargo, estará muy lejos de su finalización cuando el Programa termine.

*Recomendación No. 7: Buscar financiamiento para el cambio climático y/o Alimentar el Futuro para actividades y programas aplicables.*

El otro reto importante mirando hacia el futuro es el alto grado de vulnerabilidad de Centroamérica a los efectos del cambio climático y eventos extremos. Con *Adaptación, Energía Limpia y Paisajes Sostenibles* como los pilares de la política de cambio climático de USAID, los programas ambientales para el DR-CAFTA de USAID tienen relevancia y están muy vinculados con las iniciativas generales de cambio climático de la Agencia. Cualquier extensión de los programas ambientales de DR-CAFTA debería estar dirigida a incorporar las amenazas y los efectos del cambio climático en la toma de decisiones ambientales en todos los países, tales como incorporar el cambio climático como una consideración cuando realizan evaluaciones de impacto ambiental. El entendimiento de la complejidad de la **resistencia climática** va a ser clave en justificar la continuación de la asistencia para muchos temas comúnmente llamados “marrones” que los programas ambientales del DR-CAFTA han estado abordando.

# I.0 INTRODUCTION

## 1.1 OBJECTIVES

The United States Agency for International Development El Salvador – Central America-Mexico Regional Mission (USAID/E-CAM) has been providing assistance to the governments of Central America and the Dominican Republic since 2006 to promote compliance with the Central American – Dominican Republic – United States Free Trade Agreement<sup>3</sup> (CAFTA-DR) and an Environmental Cooperation Agreement (ECA) signed in 2005. This Assessment aims to analyze the success of the USAID-managed Regional Environmental Program from 2006 to present and to project impacts of the program through 2012.

This Assessment has two main objectives:

- (1) Evaluate the extent to which the Regional Environmental Program managed by USAID/E-CAM has helped the signatory countries of the CAFTA-DR agreement to **build capacity** to comply with the environmental provisions of CAFTA-DR and have promoted public-private alliances to improve environmental and labor standards;
- (2) Assess how USAID assistance has helped **improve the lives** of people in the region, through better wastewater management, increased air quality monitoring, better solid waste management, improved private sector environmental performance, better informed decision making, and improved enforcement and compliance.

In addition to these key objectives, the Assessment team investigated program design and performance of USAID programs and developed recommendations focusing on the potential contribution USAID could make to address both the direct and indirect challenges and opportunities of CAFTA-DR over the short and medium term (one to five years) linked to Adaptation and Global Climate Change. This report builds on the findings of previous assessments, including the Mid-Term Assessment conducted by Nathan Associates in 2009 and Evaluation Reports One and Two conducted by the Organization of American States (OAS). The full Scope of Work for this assignment is provided in *Annex C*.

## 1.2 METHODOLOGY

The Assessment Team consisted of one Team Leader/Communication Specialist, an Environmental Institutional and Natural Resource Management Specialist, an Environmental Specialist, and a Labor Specialist (see *Annex D* for a description of experience and expertise of the Assessment Team). The team conducted an **Assessment**, which is defined by USAID as an *informal* review of a project or program, and distinct from quantitative evaluations. The team analyzed program design and performance, compared stated goals and expected outcomes with results, and compared outcomes with institutional needs. This Assessment was a qualitative study, with observations and conclusions based on in-depth interviews, an extensive review of current program documentation, and site visits.

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<sup>3</sup> Signatory countries include: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States America.

Over the course of eight weeks, the Assessment Team:

- Conducted an extensive review of documentation on the program;
- Visited all six CAFTA-DR countries in Central America and the Dominican Republic;
- Conducted dozens of visits to project implementation sites; and
- Met with and interviewed over 200 individuals familiar with the programs under review.

Interviewees included host country as well as U.S. government officials, USAID bilateral mission staff, implementing organizations, program beneficiaries, representatives of interested non-governmental organizations. See *Annex A* for a detailed list of interviewees.

The Assessment Team explored the following issues when interviewing individuals:

- Success of implementation activities, if the successful activities met expectations, and why activities were successful;
- What did not go well, what might have been done differently, and how resources or time may have been spent alternatively;
- If tangible impacts were already materializing, when and if impacts could be expected, and the sustainability of such impacts;
- How to scale up activities, the pre-conditions for scaling up or achieving a multiplier effect from the success of an activity; and
- How additional funds or resources would have been used or could be put to use in the future.

The Assessment Team also delivered the findings and conclusions of the Assessment at a full-day Regional Implementing Partners meeting in San Salvador, El Salvador in August 2011. USAID bilateral Missions, focal point representatives for all of the signatory countries of the free trade agreement and/or another government delegate, and program implementers were represented at the meeting. The findings and conclusions were discussed with the attendees, and valuable feedback received at the meeting was incorporated into the final draft of this report.

### **1.3 ORGANIZATION OF REPORT**

This report is organized into the following key sections:

- (1) Introduction (*this section*)
- (2) Program Design
- (3) Program Performance
- (4) Conclusions
- (5) Recommendations

The Program Design portion provides background information on the Program and discusses key issues that determined the implementation design and process and how these design features may have affected implementation. The main body of this report, an assessment of Program Performance in Section 3, is organized by Program Components of the Combined Matrix Work Plan of July 2011 including (See *Annex E* for a copy of the matrix.):

- Improved Environmental Laws, Policies, Regulations, and Procedures
- Strengthened Enforcement of Environmental Laws
- Improved Process for Environmental Impact Assessment
- Improved Accessibility and Quality of Environmental Information
- Improved Environmental Performance of the Private Sector

Most of the discussion that follows regarding each of these program components consists of a qualitative assessment of the effective completion of each program component, an analysis of the component and relevant implementation activities when applicable, and a discussion of impact of implementation activities if there are any tangible impacts to date.

A description of Conclusions, both specific and general, that can be drawn from these observations and analysis, follows, and the Assessment concludes with a number of Recommendations for future programs and approaches, should funding be available.

## **1.4 LIMITATIONS OF THE ASSESSMENT**

This Assessment was an ambitious task for a time period of a little under three and half months and is therefore necessarily qualitative due to the extensive amount of time that data collection and analysis would have required for a quantitative evaluation. The team's resources and time were spread thinly and at least partially absorbed with producing a series of success stories, brochures and videos that accompanied the execution of this Assessment. The Assessment team faced a number of challenges, including the following:

- Elimination of a significant section of the labor scope of work a few days after the Task Order was signed;
- Rigorous travel and extensive interview schedule that required intensive management and coordination;
- Attempting to understand a large multi-faceted and complex six year program with multiple players, stakeholders, and activities in a short period of time;
- Gaps in institutional memory due to some staff turnover in certain institutions;
- Continuous updating of results and new information throughout the Assessment since many of the CAFTA-DR Environmental Programs are still ongoing; and
- Lack of clear baselines and consistent and succinct monitoring and evaluation over the life of the Program to clearly measure and attribute observed gains and results to USAID.

The Assessment team relied on the assistance of USAID and many of the other Program implementers and participants for help in minimizing and understanding these challenges.

## 2.0 PROGRAM DESIGN

### 2.1 BACKGROUND ON CAFTA-DR AND USAID PROGRAMS

The Central American countries of Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua as well as the Dominican Republic span a wide spectrum of political, economic and institutional development, each country with its own unique challenges and opportunities. In order to promote convergence on issues concerning environmental protection and law enforcement, the Central American countries, the Dominican Republic and the US signed an Environmental Cooperation Agreement (ECA) in February of 2005. The environmental goals and areas of cooperation as outlined in the ECA are as follows:

- (a) Strengthening each Party's environmental management systems, including reinforcing institutional and legal frameworks and the capacity to develop, implement, administer and enforce environmental laws, regulations, standards and policies;
- (b) Developing and promoting incentives and other flexible and voluntary mechanisms in order to encourage environmental protection, including the development of market-based initiatives and economic incentives for environmental management;
- (c) Fostering partnerships to address current or emerging conservation and management issues, including personnel training and capacity building;
- (d) Conserving and managing shared, migratory, and endangered species in international commercial trade and management in marine and terrestrial parks and other protected areas;
- (e) Exchanging information on domestic implementation of multilateral environmental agreements that all Parties have ratified;
- (f) Promoting best practices leading to sustainable management of the environment;
- (g) Facilitating technology development and transfer and training to promote the use, proper operation and maintenance of clean production technologies;
- (h) Developing and promoting environmentally beneficial goods and services;
- (i) Building capacity to promote public participation in the process of environmental decision-making;
- (j) Exchanging information and experiences among Parties wishing to perform environmental reviews, including reviews of trade agreements, at the national level; and
- (k) Any other areas of environmental cooperation on which the Parties may agree.

In August of 2005, the Central America – Dominican Republic – United States Free Trade Agreement (CAFTA-DR) was approved by all parties to eliminate tariffs and trade barriers and expand regional opportunities for the workers, manufacturers, consumers, farmers, ranchers, and service providers of the signatory countries. CAFTA-DR stipulates that participating countries are required to improve and effectively enforce their existing labor and environmental laws as stipulated in Chapter 16 and 17 respectively. To benefit fully from CAFTA-DR, participating countries need to address basic requirements outlined in the environment and labor chapters of

CAFTA-DR and the underlying environmental and labor issues surrounding the free trade agreement (FTA).

In coordination with the ECA, signatory countries are required under Chapter 17 of the FTA:

1. To comply with CAFTA-DR Environment Chapter obligations, including:
  - 1.1. to ensure that environmental laws and policies, provide for and encourage high levels of environmental protection;
  - 1.2. to effectively enforce environmental laws;
  - 1.3. to ensure that judicial, quasi-judicial, or administrative proceedings are available to sanction or remedy violations of environmental laws; and
  - 1.4. to improve implementation of, and compliance with, multi-lateral environmental agreements (MEAs);
2. To improve protection and conservation of the environment, including natural resources;
3. To encourage transparency and meaningful public participation in environmental decision-making;
4. To foster a culture of environmental protection and compliance with environmental laws through, among other things, the promotion of economic opportunities, voluntary measures to enhance environmental performance, and job creation; and
5. To harmonize regional environmental laws and policies for improved environmental protection and parity across the region.

## **2.2 PROGRAM STRUCTURE AND MANAGEMENT**

USG assistance for the promotion of compliance with CAFTA-DR is administered by USAID, US Department of State, US Trade Representative, Department of Labor, and Department of Interior. Since 2006, the US government has invested approximately US\$77.04 million to fund environmental cooperation with governments of the signatory countries. Historically, USAID has managed about two-thirds of the funds for promoting environmental cooperation. Until 2008, the Agency accepted proposals from other federal agencies to provide technical assistance. During this timeframe, the US Environmental Protection Agency (USEPA), the US Forest Service (USFS), the National Oceanic and Atmospheric Administration (NOAA) and the U.S. National Aeronautics and Space Administration (NASA) provided technical assistance directly to the signatory governments to support the ECA and its Environmental Cooperation Commission of the CAFTA-DR.

The Central American Commission for the Environment and Development (*Comisión Centroamericana de Ambiente y Desarrollo* or CCAD), the regional organization within the Central American Integration System (SICA)(an organizing body created in 1993 to coordinate the implementation of Presidential Summit resolutions and decisions made by the Council of Ministers of Foreign Affairs), also received almost 6 Million USD in funding for the period of 2006 – 2009 to support environmental integration under CAFTA-DR. CCAD's main responsibilities include supporting regional integration in environmental matters, promoting the

upward harmonization of environmental legislation, norms, indicators, standards, and enforcement procedures (USAID, CCAD Award Agreement, 2006).

After 2008, USAID rarely accepted proposals from federal agencies, but did continue to facilitate technical assistance from the USEPA and NASA through the Environment and Labor Excellence for CAFTA-DR Program (2008 – 2011) contracted to Chemonics. CCAD also received funding through 2012. CCAD, USEPA, ELE-Chemonics, and NASA have been the core implementers of the USAID environmental program to support compliance with Chapter 17 of CAFTA-DR since 2008.

USAID is carrying out CAFTA-DR environmental cooperation activities under four broad themes (Descriptions of activities under each theme are cited from <http://www.caftadr-environment.org/>):

- A. Institutional strengthening for the effective implementation and enforcement of environmental laws;
- B. Biodiversity conservation;
- C. Market-based conservation; and
- D. Improved private sector environmental performance.

*A). Institutional strengthening for the effective implementation and enforcement of Environmental laws*

USAID/E-CAM, in partnership with USAID Central American Bilateral Missions, together with implementing partners, the Central American Commission for Environmental and Development (CCAD), the U.S. Environmental Protection Agency (USEPA), the Environment and Labor Excellence Program for CAFTA-DR, or “ELE” (under a contract to Chemonics), and the U.S. National Aeronautics and Space Administration (NASA), worked to strengthen environmental management systems in the region and improve access to environmental information.

The program was designed to improve environmental laws, policies, regulations and procedures related to environmental protection, wastewater, solid waste, chemical safety, and air quality management, as well as to promote cleaner production practices. The program also aimed to strengthen capacities of the countries to meet environmental obligations of the CAFTA-DR agreement by providing training and workshops to government officials, private sector and NGO representatives from environment, agriculture, health, academic and industrial sectors on the effective application of and compliance with environmental legislation.

USAID technical assistance was also directed at improving environmental inspection and criminal enforcement techniques and environmental impact assessment processes, creating a regional system of environmental compliance indicators and a system to register and certify environmental service providers, and adopting and using cleaner production and voluntary agreements. USAID was also helping to strengthen university environmental law curricula through the development of U.S. university partnerships.

*B). Biodiversity conservation*

USAID's bilateral and regional Natural Resources and Biodiversity program sought to strengthen the capacity of the countries to meet environmental conservation obligations under CAFTA-DR and improve compliance with Multilateral Environmental Agreements, including the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), the Montreal Protocol, and the Ramsar convention on wetlands. The U.S. Forest Service together with USAID/Honduras and USAID/Nicaragua were working to strengthen forestry management and stem the tide of illegal logging of Mahogany and other species. USAID bilateral missions, US Forest Service, USFS, US Department of the Interior, DOI, and CCAD at the regional level were also providing capacity building to government officials, customs officials, police, and prosecutors on the enforcement of natural resource management and conservation laws, including CITES. The USAID E-CAM program, through CCAD, has supported the design and publication of harmonized operational handbooks to improve CITES enforcement, with a particular emphasis on wildlife trade permitting system. USAID E-CAM and its partners are also provided regional training to governmental officers on biodiversity vulnerability due to climate change and the use of climate monitoring tools. The U.S. Department of Interior, TRAFFIC, and Humane Society International (HSI) supported additional activities under this program with CAFTA-DR funds managed by State/OES, which were also providing technical assistance and support to CITES authorities, law enforcement officials, rescue centers and other key stakeholders.

Under a mechanism with USAID, NOAA was working to improve fisheries regulation, management, and enforcement in the region in collaboration with the Organization of Fishing and Aquaculture in Central America, OSPESCA, which is part of the Central American Integration System (SICA). NOAA was also working to protect endangered marine sea turtles through improved use of Turtle Excluder Devices and reduced turtle by-catch in CAFTA-DR Countries. In addition, USAID/EGAT was launching a new Global Development Alliance to work with private sector buyers and the World Wildlife Fund to stem illegal and undersized fishing of spiny lobster in Honduras and Nicaragua. The initiative was supposed to utilize market forces to promote shared responsibility for management between private sector players and government and increase economic benefits and incentives for fisheries compliance.

*C). Market-based conservation*

USAID bilateral missions and E-CAM were also promoting biological conservation and improved natural resource management and habitat conservation through the adoption of sustainable tourism practices and payment for environmental services. USAID and its partners were providing technical assistance to Protected Area and Private Nature Reserve managers to access tourism markets and helping CAFTA-DR governments remove barriers that keep funds from reaching protected areas. USAID was also promoting the placement of appropriate economic values on the conservation and management of natural resources and providing training to local communities on natural and cultural resource tourism, marketing to international tourists, and to hotel staff and transportation providers in best environmental practices. In addition, USAID was also providing market intelligence, specialized technical assistance to meet market demands and vocational training to increase incomes through trade opportunities in sustainable agriculture and forestry products while conserving biodiversity.

#### *D). Improved private sector environmental performance*

USAID bilateral missions and E-CAM, together with CCAD, EPA and ELE, were working to improve the private sector's environmental performance and competitiveness by providing flexible incentives and technical assistance for them to adopt cleaner production technologies and best practices. USAID was providing technical assistance to governments and the private sector to help promote compliance with environmental laws and implement policies to provide incentives for voluntary environmental auditing, and private sector adoption of performance and compliance-focused environmental management systems. In addition, USAID was working with the Central American cleaner production centers to promote the adoption of cleaner production best practices, promote the adoption of cleaner production and energy policies and incentives, and increase access to clean production financing. CCAD completed a an energy efficiency policy strategy for the electricity sector and was working to establish the legal framework in each CAFTA-DR country to allow governments to enter into public-private partnerships to facilitate the transfer and adoption of cleaner production technologies and promote a climate of environmental

USAID has promoted the establishment of market-based alliances with international and regional buyers in order to adopt environmental and labor standards in their supply chains, which were extended to key producers and processors of fruit, vegetables and other agricultural commodities. The alliances place priority on those producers that meet these requirements and adopt better productive practices, raise the quality of products, and assure a smaller environmental impact during their production.

USAID asked the Assessment Team to assess the impact of activities under (A), (C), and (D). Although the major focus of this assessment was on CAFTA-DR environmental programs, as part of our assessment of private sector alliances, USAID asked the Assessment Team to also look at alliances' impact on the adoption of appropriate labor standards.

### **2.3 RESULTS FRAMEWORK AND MONITORING AND EVALUATION**

Monitoring and Evaluation has been a challenge for the USAID Regional Environmental Program from the start. This report is a qualitative Assessment of the results and impacts of the program, but this Assessment Team, as well as other evaluators before it, observed that no concrete baseline existed for the activities, outcomes and impacts for which the program hoped to realize as well as a lack of clear definition and consistent use of such terms as "targets", "expected outcomes", "results", "achievements" and "indicators." The Assessment Team has documented many of the real and tangible impacts of USAID support in this report, but believes that establishment of a baseline and clear, consistent definition of terms remains critical for monitoring and evaluating the Program, and then adapting its activities to the results of such monitoring and evaluation.

The nature of the regional program presents some particularly unique challenges to converging on common goals and objectives. The signatory countries are at very different stages of development, change governments often, and have evolving priorities. The lack of a baseline or complete understanding of the initial circumstances has been made evident by other reports and

been known since the Program started in 2006. In effort to meet this challenge, the USG actors and regional stakeholders promoting compliance with CAFTA-DR in the region embarked on a strategic planning and goal-setting process in 2008, *Roadmap to Results*, consisting of extensive drafting of goals and objectives, regionally and on a country basis. The process was deemed unusually cumbersome and somewhat lacking clear direction. The process did result in a Regional Roadmap and a separate Roadmap for each country. Although the roadmaps were never signed off on by each countries' government, the USAID Environmental Program implementers used the goals outlined in these roadmaps for the purposes of work planning from 2008 – 2012.

Baselines and more rigorous monitoring and evaluation will be critical to any future programming as USAID makes an effort to measure and prove results as a component of its USAID Forward initiative and the release of its new Evaluation Policy in January of 2011.

## **3.0 PROGRAM PERFORMANCE**

The cumulative accomplishments reported in CCAD's Quarterly Report for January-March of 2011 and ELE-Chemonics' Quarterly Report for April-June 2011 indicate a very high rate of success in completing programmed activities. Most indicators (26 for CCAD- and 31 for ELE-Chemonics) show that 100% or more of the targets have been reached. Those indicators that have not been completed are nonetheless all progressing and will probably be accomplished as planned by the end of September 2011 for ELE-Chemonics and in August 2012 in CCAD's case. USEPA and NASA quarterly reports were reviewed, but they were not cumulative. It should be noted, as previous assessment reports have observed, that many of the indicators measure outputs (i.e. courses held, numbers of people trained, legal compendiums compiled) rather than results or impacts, which in many cases will not be measurable for some time. Following is our assessment of the impact these activities have had in the six CAFTA-DR countries.

In general, the people we interviewed in the participating countries saw USEPA involvement as very useful due to their technical and specialized knowledge, together with an implementation approach that believes that "instruments must respond to local needs." From our observations, ELE-Chemonics provided excellent support to USEPA, enabling them to move much faster in the implementation phase of the regional regulatory model (post 2005). CCAD, in addition, provided an excellent institutional working platform that facilitated adoption of the legal and technical instruments developed.

### **3.1 IMPROVED ENVIRONMENTAL LAWS, POLICIES, REGULATIONS, AND PROCEDURES**

Strengthening the legal framework as well as procedures to facilitate implementation and enforcement of improved environmental laws, policies, regulations and procedures has been a major priority in the CAFTA-DR program. The major thematic areas have been (i) wastewater management; (ii) disposal of chemical and hazardous substances; (iii) solid waste policies and regulations; and (iv) regional communication.

Other activities of the Program, including inspections (supported through the transparency initiative), audits (supported through the work on Environmental Impact Assessments), national and regional reference laboratories, and voluntary agreements (supported through the cleaner production component), serve to reinforce the implementation of the wastewater and solid waste regulatory frameworks. Cumulatively, these different activities can make an impact on participating countries' environmental performance and compliance; although the effects for the end-user will probably not be evident for at least five years.

#### **i. Wastewater Management**

Wastewater laws and regulations in tandem with references laboratories were important cooperation areas to support the application of regional norms and standards in this area. Both wastewater and solid waste have been a thematic area that CCAD has worked on in developing a regional model regulation that would serve as a guide for countries to use in designing their own legal framework. USEPA has supported this effort since 2002 developing a model regulation before CAFTA-DR existed. In 2005, the CCAD Committee of Environment Ministers approved

the Regional Wastewater Model Regulation. With the support of CCAD, all the CAFTA-DR countries have adopted this Regional Wastewater Model Regulation. It is currently being adapted to serve as a model legal framework for solid waste.

## 1. Legal and Regulatory Environment

CCAD, USEPA, and ELE-Chemonics have worked with all six CAFTA-DR countries on strengthening the legal framework for wastewater management. Support has been provided particularly through:

- Legal and technical assistance on the implementation of the regional wastewater regulation model (“Regulación para Descargas de Aguas Residuales en Centroamérica”);
- Developing mechanisms for the establishment of wastewater performance standards for domestic and specific industrial sectors (slaughter house, pig farming, dairy products, coffee farm and tourism industries);
- Technical training on the implementation of the regional wastewater regulation model;
- Strengthening of laboratories for wastewater analyses;
- Technical training to improve the capacity for inspections of wastewater treatment plants;
- Technical training to improve the capacity for inspections of environmental compliance;
- A wastewater treatment plant manual using the best available technologies;
- Assistance for country specific initiatives, such as development of economic instruments for the sustainability of regulation implementation in the Dominican Republic;
- Drafting of interagency cooperation agreements, known as “Convenios de Cooperación Interinstitucional” that will coordinate and maximize use of personnel and financial resources of the national and local authorities involved in wastewater management and treatment. Agreements have been signed in Costa Rica and El Salvador, and have been proposed in the rest of the CAFTA-DR countries. All of the Convenios share the following key elements: a) Coordinate the implementation of the Model Regulation and the Basic Implementation Elements; b) Identify assets and skills sets of the signatory agencies; c) Establish specific and shared tasks and responsibilities of the signatory agencies; and d) Set out goals, strategies, and measures to implement a robust regulatory enforcement program;
- Developing standard language for wastewater discharge authorizations, and enhancing the countries’ registration and self-monitoring report forms for wastewater dischargers, allowing for more efficient implementation of enforcement programs;
- Developing regulations for sludge management and disposal, a critical element that lacked specificity in all six countries. To date, more comprehensive sludge regulations have been proposed and are in the process of being finalized in Costa Rica and El Salvador. The rest of the countries have created committees to address this issue;
- Training for inspectors of wastewater treatment systems, accompanied by donation of sampling and monitoring equipment in all CAFTA-DR countries. In addition, oversight of the inspection program (El Salvador, Guatemala, Dominican Republic and Costa Rica), and development of train-the-trainer modules for wastewater inspector courses. With EPA

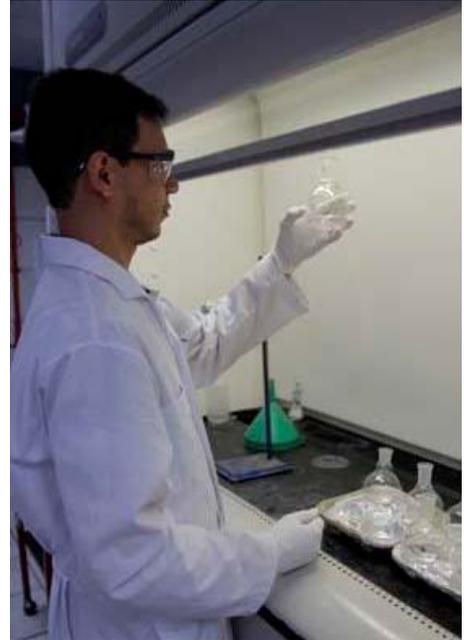
assistance, Costa Rica used these modules to create their own specific training course for wastewater inspectors; and

- Developing an Appropriate and Sustainable Wastewater Treatment Manual for the Region, presented with two companion training courses with region-wide representation.

**Country-Specific Progress on Wastewater Regulations.** Costa Rica has finished updating its wastewater regulations, using the regional wastewater regulation model approved in 2005 by the CCAD Council of Environment Ministers, and it has almost finished a national sludge regulation instrument. Nicaragua has finished drafting its national wastewater regulations, and is awaiting the presidential decree needed to bring the regulation into effect. Honduras is actively revising the final draft of its national wastewater regulation to incorporate provisions on sludge management and disposal, and it is expected to be promulgated by the end of 2011.

The other CAFTA-DR countries have worked on the methodology for adjusting wastewater discharge parameters of their current wastewater regulations and have validated it with the business sectors, but still need to issue the revised regulatory instruments. Guatemala worked with the municipalities surrounding Atitlán Lake and approved the “Wastewater Regulation for the Atitlán Lake Drainage-*Acuerdo Gubernativo 51-2010*” (February 09, 2010) using the proposed wastewater regulation for Guatemala supported by CCAD as a basis, introducing the instrument in 19 municipalities in 4 different indigenous languages (*k’iche’*, *kaqchikel*, *mam*, *t’zutujilandsipakapense*).

**Exhibit 1**, presented on the next page, shows a summary of the status of implementation of the regional wastewater regulation model in the CAFTA-DR countries.



Costa Rican Water Reference Lab.  
Picture by R. Lizama. July 2011.

**Exhibit 1. Implementation of basic elements of the Model Regulation for the Discharge of Wastewater in CAFTA-DR countries.**

<b>Basic Implementation Elements</b>	<b>HO</b>	<b>CR</b>	<b>RD</b>	<b>NI</b>	<b>GU</b>	<b>ES</b>
1. Basic Knowledge of the Regulated Community						
2. Permitting Program						
3. Monitoring Program for Effluent & Receiving Waters						
4. Enforcement and Compliance Mechanisms (Inspections/Audits and Penalty Assessments)						
5. Establishment of Discharge Parameters						
6. Public Participation, Education and Awareness Mechanisms						
7. Disposal or Use of Sewage Sludge						
8. Certification of Wastewater Treatment Plant Operators						
9. Laboratory Accreditation and Certification						
10. Non-Point Sources of Water Pollution						
11. Wetlands Protection and Restoration						

**Source: July 2011. USEPA.**

**HO:** Honduras; **CR:** Costa Rica; **RD:** República Dominicana; **NI:** Nicaragua;  
**GU:** Guatemala; **ES:** El Salvador.

**Green:** The country has a process that is consistent with the Model Wastewater Regulation, and the process is being implemented by the corresponding wastewater authorities.

**Yellow:** The country has a proposed process that is consistent with the Model Regulation, and the process is on its way to being implemented.

**Gray:** This element has not yet been addressed with the countries, since it was decided to initially address other priority elements.

**Red:** The country does not have this particular element or a process that is consistent with the Model Regulation within its regulatory framework.

The experience of sharing information among the CAFTA-DR countries seems to have spurred some countries to independently undertake their own initiatives, such as the “roadmap” for designing economic instruments to fine polluters that the Dominican Republic has embarked upon. Costa Rica and Nicaragua already have norms and regulations governing this area and are in the process of charging industry for the pollution they generate. It is not clear when the remaining countries will start the long and complex process of applying the “polluter pays” principle along with the corresponding legislation and enforcement.

CCAD, USEPA and ELE all worked on implementing programs designed to improve the legal and regulatory environment. Coordination among the three organizations in general received high marks, and the Assessment Team received no complaints about the member countries’ progress in achieving their wastewater goals.

## 2. Environmental Laboratory Capacity

Building laboratory capacity is a key element for the implementation and enforcement of the Regional Wastewater Regulation Model, previously addressed under Legal and Regulatory Environment. During the field work of this Assessment, the team visited several reference laboratories and interviewed lab directors and technicians. Currently, government agencies in four of the six CAFTA-DR countries are able to perform wastewater analyses using reference samples. These reference labs are now cable of supporting compliance with wastewater regulations. The Dominican Republic and Honduras are working on their national laboratory certifications.

All six countries received support from USEPA to strengthen the process for laboratories to raise their standards and compete to become a Reference Laboratory. The main results are:

1. One “Regional Reference Laboratory” (Centro de Investigación en Contaminación Ambiental, Universidad de Costa Rica (CICA-UCR) designated in Costa Rica; and
2. Four “National Reference Laboratories” designated in El Salvador (Administración Nacional de Acueductos y Alcantarillados, ANDA), Guatemala (Laboratorio Nacional de Salud), Nicaragua (Centro para la Investigación de los Recursos Acuáticos de Nicaragua de la Universidad de Nicaragua, CIRA-UNAN), and Costa Rica, Instituto Costarricense de Acueductos y Alcantarillados, AYA).

Receiving such designations is very challenging and the process required technical training, audits to identify lack of compliance with ISO 17025 standards, appropriate technical equipment such as laser thermometers, and use of the *Standard Methods for the Examination of Water and Wastewater 21<sup>st</sup> edition*) that complies with regulatory requirements (such as appropriate chain of custody procedures).

“All measurements and decisions should be based on accurate, repeatable, verifiable, cost effective, timely, and believable measurements, opinions, and recommendations helping to assure this happens first time, every time, and on-time”. - ISO/IEC 17025:2005

These complementary actions also help the laboratories in complying with ISO/IEC 17025:2005 standards which state that

“All measurements and decisions should be based on accurate, repeatable, verifiable, cost effective, timely, and believable measurements, opinions, and recommendations helping to assure this happens first time, every time, and on-time”. Without these assurances, the lab’s data, opinions, and recommendations may be considered unreliable.

The Assessment Team did not have the opportunity to visit the laboratories that had received training and other assistance, but did not win the distinction of being a reference laboratory. It seems probable that the quality of the work of these laboratories also improved as a result of the efforts they undertook in participating in the competition.

There are several recommendations for further work on the region's wastewater labs presented in the final report of the Wastewater LAB project. ELE-Chemonics, summarized as follows:

1. Honduras and Dominican Republic need to continue working to obtain their quality system in compliance with the ISO/IEC 17025:2005 standard;
2. Create a laboratory network led by the CAFTA-DR reference labs;
3. Empower accrediting bodies to continue follow-up work with the CAFTA-DR laboratories coordinated by the National Metrology Institute of Germany;
4. Facilitate inter-comparison round and sharing of best practices among the laboratories at least once annual; and
5. Continue working on inter-institutional agreements in order to increase the extent of each country's analysis coverage.

## **ii. Chemical and hazardous substances**

Proper solid waste management has been a priority established by the countries; however, most of the countries have faced technical difficulties designing and implement the needed norms and regulations.

Mercury (Hg) is a chemical and hazardous substance present in light bulbs as well as many instruments used in hospitals. Work to control the use, storage and recycling of mercury was carried out in Costa Rica's Children's Hospital and one hospital in Honduras. USEPA supported the effort by providing technical assistance through technical guidelines and training, to replace the Hg equipment, CCAD provided support to buy Hg-free equipment, replacing older equipment that contained Hg. Principal results include (1) hospital inventories detailing where Mercury is located and in what quantities, (2) changing procurement procedures ("no Hg") so that less hospital equipment contains Hg in the future, and reduced risk of poisoning because of the development of manuals on safer storage procedures and managing Hg spills. It is expected that these initiatives can be replicated in other hospitals in the region in order to decrease exposure to Hg and cases of mercury poisoning in humans. Other Costa Rican hospitals have reportedly adopted a policy of inventorying and reducing their use of mercury after observing the CR Children's Hospital's initiative.

CCAD is currently supporting Honduras with the reduction of Hg in two hospitals of Tegucigalpa. Discussions among the trained personnel in the Center for the Study and Control of Contaminants (CESCCO) in Honduras focused on the possibility of using *La Bolsa de Residuos Industriales de Centroamérica y El Caribe* (BORSICCA), an online market exchange for solid waste, to export mercury to Costa Rica, where there is a company (Sylvania) that recycles Hg. CCAD supported equipment purchases and the contracting of a specialist to perform the inventories and hospital equipment procurement and Hg management manuals.

## **iii. Solid waste policies and regulations**

With CCAD, the work on solid waste has included updating policy (Nicaragua and El Salvador), working on draft legislation (Costa Rica), updating norms and regulations (Nicaragua), developing inspection protocols and audits for landfills (Costa Rica and El Salvador), and

preparing guides (almost finished) for the construction and operation of landfills (Costa Rica and El Salvador, the only countries with landfills, as opposed to “waste dumps”).

To increase the value of solid waste, CCAD has helped promote the web-based commodity exchange for solid waste, BORSICCA (Industrial Waste Exchange for Central America and the Caribbean). With the Dominican Republic’s joining BORSICCA in June of 2011, all CAFTA-DR countries are now members of this initiative. A central goal of BORSICCA is to change the perception of solid waste as “garbage” to material with value that can be bought and sold on the open market.

A **central goal** of BORSICCA is to change the perception of solid waste as “garbage” to material with value that can be bought and sold on the open market.

CCAD hosts and administers the online platform that underpins BORSICCA. Each country has a local administrator, usually in the national Cleaner Production Center, although an environmentally active business association, RENAEP (Red Nacional de Empresarios para la Protección Ambiental) serves as the administrator for the Dominican Republic. Membership fees, fees for specialized courses, and sponsorships help give the initiative sustainability.

The impacts of these regulatory and practical initiatives are not yet evident. Costa Rica and El Salvador appear to be moving ahead quite rapidly in their management of solid waste, largely thanks to having started the process years ago. The pace may be slower in the other countries, in particular, because they have not yet made the shift from dumps to landfills.

#### **iv. Regional Communication**

Because many legal and technical instruments are being defined at a regional level and need constant communication between ministers and technical government directors, support to strengthen regional communication was, and continues to be important.

All ministries in the region have received video conferencing equipment, which should enable more frequent regional meetings. In July of 2011, the Environment Minister of El Salvador mentioned that he had just used the equipment to hold a several-hour meeting with his counterparts in the other CCAD countries. Travel costs are high in the region, so regional meetings have traditionally been held only once a year. With this new communications capability, the region’s Ministers of the Environment should be able to confer as often as their needs determine (while minimizing their carbon footprint).

An institutional multicultural communication strategy has been developed for Guatemala and El Salvador and is being implemented in both countries. Guatemala has had good results with indigenous peoples disseminating knowledge and adoption of legal instruments (e.g. wastewater regulations).

## **3.2 STRENGTHENED ENVIRONMENTAL LAW ENFORCEMENT**

### **i. Increased knowledge in environmental legislation and jurisprudence**

The main weakness identified by the various *fiscales* or prosecutors interviewed in the region concerned a lack of awareness and technical knowledge about environmental issues, especially among judges, but also among the public in general. This program has helped strengthen the work of prosecutors and judges through training as well as the compilation of legal reference materials.

#### ***Training***

ELE-Chemonics organized training-of-trainers courses on environmental criminal law that were delivered in five of the six countries (excluding Honduras because of the political crisis there). In addition to prosecutors and judges, investigators from the national police and prosecutors' staff also attended the courses. The courses were adapted to each country's legal framework and mechanisms of compliance, so the course material could be more readily applied by the participants and more easily incorporated into the countries' university curriculums. In Costa Rica, the course is now being taught in the judicial school, both as a classroom course as well as a virtual course. In Nicaragua, the course has been integrated into the formal curriculum of one University, the UNICA (*Universidad Católica*) and is in the process of being added to the curriculum of the Caribbean University of Nicaragua, URACCAN (*Universidad de las Regiones Autónomas de la Costa Caribe Nicaragüense*). Similarly, the course has been replicated by the Autonomous University of Santo Domingo and integrated in the curriculum of the Rafael Landívar University in Guatemala. Teaching guides were also developed as a didactic tool for the university and judicial school courses.

In addition, CCAD organized a regional course on the critical topic of assessing the costs of environmental damage. Prosecutors from all of the CAFTA-DR countries attended the course, which was well received. Costa Rica used the knowledge received to consolidate a regulation on the economic assessment of environmental damage, which is ready for the minister of the environment's signature in order for it to be official.

#### ***Jurisprudence***

Through the support of ELE-Chemonics, a regional legal compendium was prepared and made available to all environmental prosecutors in each country, together with a national compilation of environmental jurisprudence (case histories). Access to case histories provides critical guidance to judges when there are gaps or ambiguities in the law. A number of prosecutors mentioned that the printed document provided added value, because many judges in the region still do not have access to the internet access or even a computer in their offices.

## ii. Increased capacity in the investigation, prosecution and sentencing of environmental crimes

The process of increasing capacities for the investigation, prosecution and sentencing has been highly successful, thanks in part to good coordination between ELE-Chemonics and CCAD. This was a widely shared view among the countries we visited.

Support from the implementing entities included the organization of workshops, logistical support, the exchange of experiences, and the development of a manual for investigating environmental crimes (collecting evidence and maintaining the chain of custody), a manual for prosecution and trial, and a compendium of environmental laws as noted above. Also as noted above, the Program provided training in the form of courses in environmental law and in evaluating the economic costs of environmental damage. This training has had the added benefit of establishing relationships and increased collaboration between regulatory agencies and criminal prosecution offices.

“The weakest part of the environmental prosecution work lies in the judges whose lack of environmental sensitivity weakens the development of strong, winning cases.” – Anonymous Environmental *Fiscal*

The manuals and compendiums are considered important support for environmental specialists without legal training to provide information in legal cases. They contribute to the dissemination of knowledge and serve to raise awareness for judges working in rural areas. These tools permit a wider array of non-specialized judges located in small towns to construct and resolve environmental cases, cases which otherwise might have been ignored or left unresolved.

As one environmental *fiscal* told us, “the weakest part of the environmental prosecution work lies in the judges whose lack of environmental sensitivity weakens the development of strong, winning cases.”

## iii. Environmental Compliance and Enforcement (ECE) Indicators

In all but one country (Guatemala), CCAD supported the development of the first indicators of compliance with environmental legislation. The indicators are to be incorporated in the United Nations Environmental Program’s (UNEP) platform of indicators. The Dominican Republic and El Salvador have the UNEP platform installed. The other countries are still working toward that goal. These indicators will provide information on the countries’ compliance with environmental standards, norms and regulations, a stipulation in the CAFTA-DR trade agreement.

### 3.3 IMPROVED ENVIRONMENTAL IMPACT ASSESSMENT PROCESSES

The intent of the CAFTA-DR is to increase economic activity in the signatory countries by stimulating trade between the signatories. An increase in economic activity tends to stimulate the initiation of projects, such as roads and bridges, electrical generation plants, agricultural enterprises and construction, with potentially significant negative environmental consequences. The Environmental Impact Assessment (EIA) process provides a systematic means to identify the potential negative environmental consequences of specific proposed actions and formulate

alternative means of achieving the same purpose with less negative environmental impact as well as effective mitigation or compensatory measures for the negative environmental impacts that are unavoidable. An effective EIA process is therefore at the core of helping the CAFTA-DR countries avoid significant negative environmental impacts.<sup>4</sup> This component of the Program was implemented by the various ministries of environment of the CAFTA-DR countries, CCAD, USEPA, and ELE-Chemonics Program.

During 2010, USEPA's Manager of the Program to Strengthen EIA Review, Ms. Cheryl Wasserman, worked closely with the directors of environmental assessment in the different environment ministries to formulate the 20 recommendations, grouped under three broad categories, for improving the EIA review process in the CAFTA-DR countries that are listed in *Exhibit 2*.

It was not possible for this assessment to evaluate the progress the CAFTA-DR countries have made on implementing these recommendations. Given that less than a year has passed since they were formulated, however, it is unlikely that the recommendations have been fully implemented at this early stage.

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- <sup>4</sup>Costa Rica: "Ley Orgánica del Ambiente" (1995) y "Reglamento General Sobre los Procedimientos de Evaluación de Impacto Ambiental" (2004)
  - El Salvador: "Ley del Medio Ambiente" (1998) y "Reglamento General de la Ley del Medio Ambiente" (1998?)
  - Guatemala: "Ley de Protección y Mejoramiento del Medio Ambiente" (1986) y "Reglamento de Evaluación, Control y Seguimiento Ambiental" (2007) y sus reformas, 2008 y 2010, 173-2010.
  - Honduras: "Ley General del Ambiente" (1993) y "Reglamento del Sistema Nacional de Evaluación de Impacto Ambiental (SINEIA)" (1993)
  - Nicaragua: "Sistema de Evaluación Ambiental" (2006) y "Reglamento de Permiso y Evaluación de Impacto Ambiental" (1994)
  - República Dominicana: "Procedimiento de Evaluación de Impacto Ambiental" (2002) y "Ley General Sobre Medio Ambiente y Recursos Naturales" (2000)

**Exhibit 2. Recommendations for improving the EIA Review Process****Institutional strengthening and reform**

- Integrate environmental responsibilities into sector ministries through SEA while maintaining linkage with, expertise of, and independent review by EIA review function;
- Support EIA process and institutions reforms which ensure government-wide commitment of staffing, funding and information resources;
- Compel early public/ intergovernmental scoping of issues before EIA Terms of Reference (TORs) is prepared or finalized for projects with most significant potential impacts and ensure public consultation during EIA preparation is adequate;
- Provide regular review of problem areas for all groups together as annual learning opportunity; and
- Introduce new dispute/conflict avoidance and resolution mechanisms.

**Improve the value and adequacy of EIA documents for decision making and auditable commitments**

- Reinforce requirements for alternatives to be explored in the EIA;
- Avoid project segmentation;
- Reinforce Cumulative impacts assessment for sensitive resources and identify entities responsible for their management;
- Introduce into TORs requirements for modeling and other predictive tools and develop this capacity in both the EIA review and consultants;
- Improve timely access, and integration of environmental and related economic and social information for government reviewers and project proponents to better avoid and screen and scope issues;
- Where standards, policies and plans are lacking, require well documented substitutes in the EIA;
- Enhance performance of new construction and investment by encouraging best practices;
- Reduce EIA document deficiencies; integrate corrections into the EIA as appropriate; and
- Make complete and integrated EIA documents available.

**Improve Management of EIA Process**

- Build and use automated EIA administrative tracking systems to achieve identified specifications;
- Consider additional ways to address EIA Review backlogs, without compromising environmental protection;
- Reduce EIA document deficiencies creating back and forth and delays;
- Avoid wasting EIA Review Staff time reviewing speculative projects and completing the missing information for the project proponent;
- Improve enforcement of EIA requirements, audit follow up and enforceability of monitoring and mitigation; and
- Reassess timeframes and workloads that appear to be unrealistic.

### **i. Increased Capacity in EIA**

The component “*Increased Capacity in EIA*” includes a narrower range of activities than its title implies, since the term “*increased capacity*” refers not to increased capacity in all aspects of preparing EIAs but only to training in EIA processes for the staff of the CAFTA-DR countries’ ministries of environment, business sectors, universities, and environmental consultants whose work has some relation to the preparation, implementation or monitoring and evaluation of environmental assessments.

Thus the component’s first expected outcome is “*EIA authority and private sector professionals have increased knowledge and capacity to conduct EIAs and EIA reviews*” and its second expected outcome is “*EIA training provided by universities and recognized by EIA authorities for certification*”. The indicators that USAID established for these expected outcomes are:

1. “*EIA training courses delivered in each CAFTA-DR country*”;
2. “*EIA training and guidance materials adopted and integrated by not less than five universities or training institutes in CAFTA-DR countries*”; and
3. “*Agreements established between universities and EIA authorities for EIA authorities to endorse EIA course offered by university.*”

### **EIA Trainings**

To achieve the first expected outcome, the Program has provided the following training:

1. Self-tutorial EIA course, in CD format, delivered to EIA authorities in the CAFTA-DR countries (except Honduras);
2. 20 EIA training courses in CAFTA-DR countries, including six courses entitled “Principles of EIA Review” (El Salvador, Guatemala, Dominican Republic, Nicaragua, Costa Rica and Honduras);
3. Eight courses on “EIA Under Criteria for Certification” (three in the Dominican Republic, one in Guatemala, one in Nicaragua, two in Costa Rica and one in El Salvador);
4. Two courses entitled “EIA Trainer of Trainers” (Dominican Republic); and
5. Five courses of EIA awareness for industry leaders (two in Costa Rica, one in El Salvador, two in Guatemala).<sup>5</sup>

Our review of the course materials and interviews with trainers and trainees indicated that the EIA courses provided their participants with a thorough understanding of the concepts and procedures of planning and preparing EIAs, delivered this material through effective training methodologies, and used material that was adapted to the regional and country-specific situations in Central America and the Dominican Republic. The course participants we interviewed considered the content to be highly relevant and useful.

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<sup>5</sup> The CCAD provided logistical support for the first two courses and the ELE provided logistical support for the other courses.

Furthermore, our interviews indicated that the EIA courses assisted the CAFTA-DR countries advance towards the achievement of several important objectives over and above training people in EIA procedures and that will increase their overall sustainability. First, the courses were designed to train people as trainers in EIA procedures; thus as a result of the courses, the CAFTA-DR countries now have a cadre of trainers in EIA concepts and procedures who can provide training to the many other people in the CAFTA-DR countries who should have this knowledge. Second, the EIA courses were based on case studies of proposed projects in the CAFTA-DR countries, involving a gold mine, sand and gravel mine, a hydroelectric dam, a dairy, a tourist development, a road, a housing development, a landfill, a marina and port, a cement plant, and a coal fired power plant. These case studies involve the sectors in which large projects that affect the environment are likely to be undertaken in the CAFTA-DR countries. Third, the courses trained the participants in effective facilitation of public participation in the evaluation of environmental impacts, a skill that can be used in situations other than the preparation of EIAs and which is important to foster in countries where public participation in decision-making requires further development.

Our interviews with participants in courses consistently confirmed the suitability of their content and suitability of the methodology used for their delivery. For example, Julio Eguigure, Director for Evaluation and Environmental Control in Honduras's Secretariat for Environment and Natural Resources (SERNA) said, "We believe that the training has been very important for the country; we have had a chance to learn from the experiences of Costa Rica and the Dominican Republic..." Dr. Luis Ferraté, then Guatemalan Minister of the Environment, told us: "We have received tremendous assistance from USAID in the preparation of EIAs and environmental audits." To achieve the second expected outcome, according to the EPA's draft training report from January 2010,

"...candidate institutions for providing support for future course deliveries have been identified and were invited to participate in the second round of delivery of the courses...five universities have adopted EIA training and guidance materials and agreements between universities and EIA authorities to endorse EIA courses offered by universities are close to being established."

In our interviews we received no further information about these courses or about the extent to which EIA training is being incorporated into university programs. Our interviews with the staff of several universities in the Dominican Republic, Nicaragua, Costa Rica and Guatemala indicated that the Program until recently has concentrated on incorporating cleaner production technology rather than EIA training into university curricula. It is not clear, therefore, that the Program has served to embed EIA training within the institutional structures and budgets of the ministries of environment or universities in the CAFTA countries, and when, how and with what financing future EIA training will be implemented in these countries. During August 2011, however, five technical institutes and universities (UNITEC in Honduras, and in Guatemala, the *Colegio Profesional de Arquitectos*, *Colegio Profesional de Ingenieros*, *Colegio Profesional de Zootecnistas* and *Colegio Profesional de Agrónomos*) signed memorandum of understandings with the ELE Program confirming their intention to incorporate into their curriculums training in EIA processes for consultants. The technical content of the training courses were shared and validated with the MARN in Guatemala and with SERNA in Honduras.

## ii. Improve EIA Legal Framework

We understand “*improve the EIA legal framework*” to include not only national laws but also regulations prepared and promulgated by national ministries and local ordinances related to EIAs that have been prepared and approved by local governments.

In reference to the 20 recommendations listed in **Exhibit 2** above, Ms. Cheryl Wasserman, Associate Director for Policy Analysis and Manager of EPA’s CAFTA-DR program to Strengthen EIA Review has written,

“...Most of the recommended reforms do not appear to require changes to the underlying laws which are generally broad in nature, including those addressing public participation. Specific timeframes and decision making procedures are usually embodied in implementing regulations which are more easily modified. However, each country would have to make this determination themselves.”  
(Wasserman, C. 2010).

The two expected outcomes of this component of the Program are “*Support EIA legal framework modification required to strengthen EIA regulations*” and “*Model elements in EIA sanctions and administrative procedures developed to incorporate in modification of legal framework*”. For these two expected outcomes the indicator is: “*Model regulation in EIA sanctions and administrative procedures developed*”. The ELE project developed a document containing model regulations for criminal and administrative sanctions for CCAD and USEPA to use their work on improving EIA regulations. According to the spread sheet provided by CCAD, as of mid-2011 the Program had been involved in the preparation and approval of the following regulations and procedures at the regional and country levels:

- **Regional:** *Regional Model for Obligatory or Voluntary Environmental Audits; Regional Model for Registering and Certifying Environmental Consultants.*
- **Costa Rica:** *Proposal for Integrated National System for the Certification and Registry of Environmental Managers proposal; Regulation for the Registry of Environmental Managers; System of Obligatory and Voluntary Environmental Audits; Regulation for Environmental Audits; Manual of Procedures for Environmental Reports.*
- **El Salvador:** *Technical Manual for EIAs; Internal Instructions for Environmental Evaluation Procedures; Procedures for Reports Related to the Environmental Chapter of CAFTA-DR; Reforms to the General Regulations of the Law of the Environment Related to Environmental Audits; Registry and Certification of Environmental Consultants.*
- **Guatemala:** *Design for a System of Follow-Up on Citizens Reporting on Environmental Damage; Design for a Mechanism of Assignment of Damage and Sanctions; Model for Certifying Environmental Consultants; Regulation and Manual for Defining the Procedures for Environmental Audits; Manual of Competencies, Attributions; Functions for the Municipal Environmental Units; Manual for Procedures to File Environmental Reports.*
- **Honduras:** *Regulation for Environmental Consultants*

- **Nicaragua:** *Ministerial Resolution of Instruments and Mechanisms for the Conformation of Inter-Institutional and Inter-Disciplinary Committees for the Function of Environmental Evaluation; National Register of Environmental Evaluation (RENEA); On-Line Module for the Reception of Communications Related to the Application of Environmental Legislation in the Context of Chapter 17 of DR-CAFTA.*

With these 14 documents, the Program undoubtedly has contributed to improving the EIA legal framework in the CAFTA-DR countries. This assessment, however, was unable to analyze fully the extent to which the recommendations in these documents have been adopted in the CAFTA-DR countries or the degree to which improvements in the legal framework that are required to implement the 20 recommendations lists in Exhibit 2 have already been made. Given that the recommendations were formulated only in late 2010, however, it seems likely that few, if any, of them have been fully implemented. It would require a more in-depth evaluation to determine the status of implementation of these recommendations.

Our interviews did indicate, however, several needed improvements to the legal framework for EIAs. The laws and regulations governing public participation in the EIA process need improvement. For example, Anthony Palma, a consultant working on the National Register of Environmental Evaluations (RENEA) and the National Environmental Information System in Nicaragua, noted that Nicaraguan law does not permit the public access to information in EIAs and that “it would require a change in the law to permit such public access...” In El Salvador, Minister Herman Rosa Chávez noted that “...EIAs have been considered highly confidential documents...because the law has been interpreted too narrowly...Investors become nervous about public participation, but they are beginning to perceive its value in preventing problems... We need a public tracking system to fight off accusations of delays and establish internal controls that respond to public demand.” Some countries, such as the Dominican Republic and Costa Rica, are more advanced than others in incorporating public participation into the EIA process. In general, however, public participation needs to be incorporated into the EIA process more effectively and efficiently, which in some cases will require modifications to the laws and regulations governing the EIA process.

### **Decentralization of the EIA Process**

Similarly, in some of the CAFTA-DR countries the regulations governing the decentralization or de-concentration of control over the process either to local governments or to local representatives of the national government need improvement. According to Julio Eguigure, the Director of Environmental Control and Evaluation in the Secretariat for the Environment and Natural Resources of Honduras, “we are still validating the regulations for implementing Law 181 of 2007 which obligated the municipalities to use the EIA process of the national ministry of environment...and the instruments for doing so have to be adapted.”

In Guatemala, Francisco Zurita, the Coordinator of the Unit for Decentralization of the Ministry of Environment and Natural Resources noted that, “the Congress has to modify the municipal code in order to obligate the municipalities to create Environmental Management Units...” Ministry of environment officials in all the other countries except Costa Rica said that the tracking system for EIAs and NEPAassist needed to be taken to the local offices of the ministry and to local governments, although in Nicaragua considerable authority has already been given

to the regional offices of the ministry of environment. To make this delegation or transfer of authority over the preparation, monitoring and enforcement of some part of the EIA process to the local level generally requires modifications, or at least clarifications, to the legal framework that governs it.

### **Categorization and Prioritization of EIAs**

In some of the countries, the EIA process is clogged with paperwork because the laws and regulations require an EIA for every proposed activity in the public and private sectors, no matter how small it may be. A standard method for focusing attention on proposed activities that are more likely to cause significant negative environmental impacts is to divide them into categories by type and size of project. Then, limited funds, staff and time available to the ministries of environment for the EIA process can be devoted to the larger projects of the type that could cause significant negative impacts on the environment.

At least some of the CAFTA-DR countries, however, still do not separate proposed activities into categories. In Guatemala, for example, Dr. Eugenia Castro, the Director of the General Directorate for Environmental Management and Natural Resources, said, "...all projects are required to have an EIA study..." but noted that a common solution for addressing numerous, similar types of projects, the programmatic environmental assessment, is "not part of our legal structure for EIAs..." According to her, another approach to reducing the workload created by the requirement for an EIA for every proposed activity, the strategic environmental assessment, "does not function in Guatemala." She admitted, however, that her department is inundated with more EIAs than it can adequately process, much less subsequently monitor and control, although it already has 50 staff members. Given that the fiscal crisis in the government will prevent the department from adding more staff to process so many EIAs, a solution is to reduce the work load by not requiring EIAs for every proposed activity, but doing so would evidently require a change in the law or the regulations governing the EIA process.

### **Retrospective Compliance with EIA Process**

Finally, in several CAFTA-DR countries, the legal framework governing the EIA process requires additional improvement to bring companies into compliance. An EIA predicts the negative environmental consequences of a proposed action and defines effective means to avoid, mitigate or compensate for those consequences. Yet most businesses in the CAFTA-DR countries were started *before* the laws and regulations governing the EIA process were promulgated. The EIA process, therefore, does not provide a completely suitable process for evaluating the environmental effects of their *ongoing* operations. After all, the environmental consequences do not have to be *predicted* when they are already there to be *observed*.

Henry Monsanto, General Manager of the agrochemical company FERQUIDO in the Dominican Republic, suggests that it would be reasonable for the ministry to accept the company's environmental management system in lieu of the EIAs, saying, "We lack the funds to pay for so many assessments and... our Environmental Management System already provides us with a dynamic, flexible process of constant improvement in the environmental, safety and health aspects of our operations." In one country we visited, an Environment Ministry official told us, "I am going to give all companies three months to obtain an environmental license or close them

down...” Such drastic actions could create an unproductive backlash against the EIA system.

In sum, while the Program has given valuable assistance to the CAFTA-DR countries in improving their legal framework for the EIA process, some improvements remain to be made in that framework, and then implemented effectively.

### **iii. Technical EIA guidelines and training in mining, energy and tourism sectors**

The expected outcomes of this component are “*support EPA with the drafting of technical EIA review guidelines in mining, energy and tourism*” and “*government officials trained in the use of technical EIA review guidelines in mining, energy and tourism*”. The indicators are “*three technical guidelines (mining, energy and tourism) developed*”; “*three technical guidelines (mining, energy and tourism) disseminated in all CAFTA-DR countries*”; and “*at least one workshop for each guidelines held in CAFTA-DR countries*”.

According to Wasserman (2010), the objectives of the EIA guidelines were to:

- 1.) Improve environmental performance in the sector;
- 2.) Improve EIA document quality and quality of EIA decision making;
- 3.) Improve efficiency and effectiveness of the EIA process;
- 4.) Tailor guidelines to needs of CAFTA-DR countries;
- 5.) Provide technical guidelines for the identification of environmental, social and economic impacts;
- 6.) Identify potential for avoidance and mitigation for adverse environmental, social and economic impacts from the sector in relation to established requirements of law and industry best practice; and
- 7.) Encourage public participation throughout the process, a specific priority and request of CAFTA-DR country officials.

Wasserman (2010) describes the process for developing the technical guidelines as using a collaborative approach involving: (1) an expert team including experts from the ministries of environment and the private sectors, including universities, and from relevant public sector U.S. agencies (USEPA, Department of the Interior); (2) regional expert meetings to review and guide all work products; (3) identification of resource materials, such as standards, practices, laws and guidelines related to assessing the environmental impacts of the sectors; (4) development of baseline information on current practice, anticipated growth, existing standards and guidance, norms, permits and mitigation requirements related to commercial scale operations in the sectors; (5) development of information on alternatives for pollution control and environmental protection for projects in the sectors; (6) development of options to achieve the benefits of requiring siting, design, construction, operation and closure/reclamation and site reuse approaches which eliminate, reduce, mitigate and/or compensate for the potential adverse environmental impacts from the sectors; and (7) adaptation of these guidelines based on the results of country workshops.

The guidelines are divided into the following ten sections: (1) Introduction; (2) EIA Procedures and Public Participation; (3) Project and Alternatives Description; (4) Environmental Setting; (5) Anticipated Impacts; (6) Assessing Impacts; (7) Mitigation and Monitoring Measures; (8) Environmental Management Plans; (9) References and Glossary of Terms; and (10) Example Terms of Reference.

**Strengths of the Technical Guides.** Three aspects of the technical guides make them particularly useful. First, they were prepared for economic sectors, mining, energy and tourism, whose activities are often large-scale and therefore have the potential to cause significant negative environmental impacts. Second, the process that was used to prepare the guidelines is an important factor in making them useful to the CAFTA-DR countries. Rather than simply producing the guides, the process was designed to build relationships between institutions and people that could be used to obtain financial resources and access to expertise and break down the isolation between government and academia. The guidelines are in their final stages of editing and should be printed by the end of September 2011. Third, the technical guides provide information and procedures that can be applied to other sectors as well. The next step, therefore, is not so much to write additional technical guides for other sectors but to make sure that these guides are widely and effectively used. In particular, their contents should be incorporated into training courses for consultants and in universities.

It was beyond the technical expertise of the Assessment Team to comment in detail on the technical quality of the three technical guidelines. They were prepared through an excellent process that, so far as could be determined, involved the right people in each country and the principal experts in the sector in the U.S. government. The English language versions of the guidelines use reasonably simple language, are clearly organized, contain useful tables, diagrams and charts and references to specific topics. The guidelines have not yet been published in their final form and the training events in their use have not yet been held, so it is too early to judge their effectiveness by an increase in quality of the preparation of EIAs.

#### **iv. Administrative EIA Tracking Systems**

This component of the Program has one expected outcome, “*At least four CAFTA-DR countries with improved or new Administrative EIA Tracking Systems in place and operative, and preferably available to the public via the internet*” and one indicator, “*A total of at least four CAFTA-DR countries with improved or new Administrative EIA Tracking Systems in place and operative by the end of the ELE Program.*”

Since mid-2010, the CAFTA-DR Environmental Program has assisted the ministries of environment of the Dominican Republic, Guatemala, Costa Rica and Honduras to revamp their administrative tracking systems for environmental permits by using a computer-based rather than a paper based system. Nicaragua did not adopt the system because it was satisfied with its existing system. The administrative tracking system in El Salvador had been improved previously. Although according to Mr. Herman Rosas, Minister of Environment in El Salvador, the Ministry continues to try to improve the system.

Our interviews suggested that the tracking systems has been highly successful in addressing one of the principal problems of the ministries of environment: inability to keep track of their

paperwork and consequent long delays in responding to the presentation of EIAs and applications for environmental permits which has undercut the credibility of the ministries in the opinion of the public and specific economic sectors. The administrative tracking system has increased transparency and efficiency as well as reduced costs.

- Mr. Julio Eguigure, Director of Environmental Evaluation and Control in Honduras' SERNA, said that even though his office has only recently begun to use the administrative tracking system, the prior process of analysis and preparation has already helped him to track EIAs more efficiently. He said, "we now have no backlog, we have clear indicators for compliance, and we have reduced our use of paper by 60 percent... with the tracking system we are processing more permits faster and with higher technical quality."
- In the Dominican Republic, Ms. Lina Beriguette, Director of Environmental Evaluation noted, "we are using the administrative tracking system...we have a data base that contains ten years of data without any organization...so far we have put in the data from 2010 onwards and we continue to add data from the previous years, which includes more than 5,000 requests for environmental permits..."

### **Remaining Issues related to the Administrative Tracking System**

Based on our interviews, we identified three issues that remain to be resolved in relation to the administrative tracking system:

First of all, the administrative tracking systems need to be made fully functional in the countries where they are now installed. The staff that operates the systems must become fully capable of operating the system. The data on existing environmental permits and EIAs must be entered expeditiously. Other ministries, local governments, environmental consultants, producers, associations and the public in general need to be made aware of how to use the new administrative system. The usefulness of the administrative tracking system will necessarily depend on how effectively and extensively it is utilized.

Second, functional administrative tracking systems urgently need to be installed and made operational in the ministries of environment of Guatemala and El Salvador. In Guatemala, Ms. Eugenia Castro, the Director of the General Directorate for Environmental Management and Natural Resources in Guatemala, where the administrative tracking system had not been installed at the time of the Assessment Team's visit in June, said that, "our principal weakness is in follow-up and control of EIAs...We have a lot of work backed up from previous years and lack the staff to do follow up or control of the EIAs..." She said that her office has such an enormous backlog of environmental documentation that in spite of having 50 staff members in the office that handles EIAs, they were unable to monitor or evaluate compliance with the mitigation measures specified in the EIAs. The administrative tracking system for EIAs has since been installed in Guatemala and has been functioning since July 20, 2011 in 22 regional delegations, and we expect that EIA processing will become more efficient as a result.

In El Salvador, Minister Herman Rosa said that "...our Achilles heel is our licensing program which generates political complaints because it is not agile enough..." Our conclusion is that to resolve this problem, the Ministry requires assistance in establishing a functional administrative tracking system, perhaps drawing on the tracking systems that have already been installed in other CAFTA-DR countries.

Finally, the administrative tracking system has considerable potential and could be expanded to include additional data and information. Mr. Julio Eguigure, the Director of Environmental Evaluation and Control in SERNA (Honduras), said, “We need to extend the new system to municipalities...link it to cleaner production methods...and to economic valorization of ecological damages...” The administrative tracking system needs also to come to incorporate audits that are based on measurable indicators so that it can be used to evaluate the degree of compliance with the avoidance, mitigation or compensatory measures that are part of the EIAs or Environmental Management Plans. Eventually, the administrative system might also be used to link the EIAs to disaster preparedness and climate change adaptation and to keep track of the effectiveness of mitigation measures. We believe, however, that the extension of the administrative tracking system to include such additional data and information should be deferred until its core function of tracking EIAs has become well-established and is functioning well in the ministries of environment.

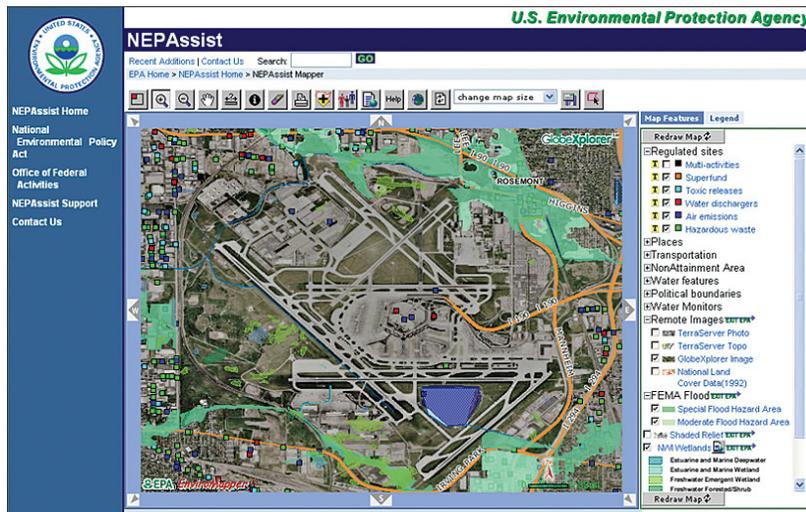
**v. EIA GIS NEPAssist**

The Expected Outcome of this component of the Program is “Deployment of NEPAssist Tool in at least four CAFTA-DR countries” and the indicator is “Web-based GIS EIA review tools (NEPAssist) deployed and operative in at least four CAFTA-DR countries.”

As of this writing, the NEPAssist tool has been deployed in El Salvador, the Dominican Republic, Nicaragua, and Costa Rica. According to Ms. Cheryl Wasserman, Associate Director for Policy Analysis and Manager of USEPA’s CAFTA-DR Program to Strengthen EIA Review, the NEPAssist program will be installed in Honduras and Guatemala in September 2011.

The USEPA describes the NEPAssist as “a tool, based on GIS [Geographic Information Systems], that the USEPA developed over an eight year period in order to support instant access, integration and analysis of information in support of EIA review and preparation. It uses standard GIS software and server capacity and it needs no desktop application and no desktop data storage. It is non-proprietary, so it requires no licensing, and uses off-the- shelf software and hardware. NEPAssist is so user friendly that its use requires no training except for review of

a simple manual. It provides access to core environmental and social datasets and uses them in geo-spatial applications via the web so there is no problem with data ownership/control/management. Integrates and analyzes information: visually and analytically thereby helping to streamline and simplify review and development of EIAs.” (EPA, 2010)



Source: www.epa.gov

The team did note the facility with which Ms. Mariana Perez, the Environmental Information specialist in the Ministry of Environment and Natural Resources of the Dominican Republic, was able to use NEPAssist to quickly locate the sites of proposed projects within their environmental context, such as distance to water bodies, protected areas, reefs and nesting sites of endangered birds. Ms. Perez remarked that “NEPAssist provides information that is accessible and responds to a lot of requests for information, especially about whether a proposed project is within a protected area or how close it is to water bodies....NEPAssist has provided a system of rapid response especially for protected areas and water bodies.”

From our interviews, we identified three issues related to the NEPAssist Program: The first involves how the use of NEPAssist coincides with environmental and planning regulations in Guatemala. Although NEPAssist has not yet been installed there, Ms. Eugenia Castro, Director of Environmental Management and Natural Resources expressed her doubts about, observing that, “the NEPAssist methodology and program is not useful to the ministry because the [Guatemalan Government’s] Planning Secretariat doesn’t work in that way.” Lack of time prevented the assessment team from investigating this issue further. It is possible, however, that there are certain regulatory or procedural barriers in Guatemala, and perhaps other CAFTA-DR countries, that will make it difficult to make full use of the NEPAssist program.

The second involves the sustainability of NEPAssist without further training and assistance from the EPA. In spite of the USEPA’s statement that NEPAssist is so simple to use, in the Dominican Republic, Ms. Mariana Pérez expressed some doubts about the ability of her staff to make programming changes in NEPAssist Program if needed in the future. Rosa Otero, Director of Commerce and Environment said, “With NEPAssist, the EPA gave us the platform but not a process to keep it going. It wasn’t a genuine transfer of technology.” In El Salvador, Herman Romero, the Director of Environmental Management, said that “NEPAssist has improved our system a great deal but we remain short on technical capabilities...” and Minister Rosa said, “...in order to take it to the next step we need support from U.S. government agencies...” In sum, there appears to be concern in several ministries that additional technical assistance is needed to keep NEPAssist fully operative and adapt it to solve new problems that may arise.

In a GIS-based program, an issue about data quality almost inevitably arises. The quality of the analysis produced with a GIS cannot be better than the data the GIS has available. According to Ms. Mariana Perez in the Dominican Republic, for example, “there were 86 protected areas two years ago and now there are 103...” Thus unless the GIS data is continuously updated, it is possible that it will not have the location of new protected areas and thus conceivably provide erroneous information for the preparation of EIAs. We were unable to confirm that the data being put into NEPAssist is current and that there are systems in place to keep the data up-to-date.

In sum, the NEPAssist Program appears to have great utility for preparing EIAs of higher technical quality but its actual utility remains to be evaluated once the program is fully functioning in one or more of the CAFTA-DR countries.

## **General Issues concerning the EIA Process**

Aside from the specific issues mentioned for each of the five components of the program to improve the EIA process, a number of more general issues emerged from our interviews, including under financing of the EIA process, quality of EIAs, and lack of continued technical assistance to the EIA process beyond 2012.

Under-financing for the EIA process appears to be a problem in all the CAFTA-DR countries. In Costa Rica, for example, Mr. Uriel Juarez, Secretary General of the National Environmental Technical Secretary (SETENA) said, “We do not have enough professionals to carry out more audits...we decide how many audits to make on the basis of the funds that are available.” He pointed out that 21 auditors had been trained but only nine were working as auditors carrying out audits of compliance with the terms of EIAs. Likewise, in Guatemala, Dr. Eugenia Castro, Director of Environmental Management and Natural Resources in the Ministry of Environment, told us, “My department has 16 people each of whom has to handle about 40 EIAs...we can afford to assign only 3 to 4 people to monitoring and control...”.

Teófilo de la Torre, Minister of Environment, Telecommunications and Energy of Costa Rica, noted that “the economic crisis has severely affected the Costa Rican government budget in general and my ministry in particular...We receive 50% of our budget from donations and consequently in regard to environmental control we are very weak.” In Honduras, a SERNA official described his institution as a “second-tier ministry without an adequate budget and with little status, although it has many responsibilities. It cannot absorb donor aid for lack of personnel.” These statements, among others, indicate that under-financing for the EIA process is a generalized restriction on its effectiveness throughout the CAFTA-DR countries.

The quality of the EIAs is another general concern in the CAFTA-DR countries. Raising the quality of the EIAs is, of course, the objective of the component of the Program under discussion; the training, modifications to the legal framework technical guidelines, administrative tracking system and NEPAassist are all aimed at that purpose. The assessment team did not actually review any of the EIAs that have been prepared recently in the CAFTA-DR countries much less compare more recent EIAs with older ones to see if their quality has improved. Several interviews, however, indicated that those involved in reviewing them believe that their quality continues to need improvement. . Hermann Romero, Director of Environmental Management in MARN in El Salvador, for example, said, “...the EIAs are not good...” The question remains, therefore, as to how much and how soon the Program will succeed in improving the quality of the EIAs.

It is possible, however, that if sufficient funds are not assigned to the EIA process, their quality will not increase in spite of the training and technical assistance the Program has provided. Even the registration program for environmental consultants may not be completely effective. The region does not lack capable environmental professionals who could already prepare high-quality EIAs, but payments for EIAs may be too low to attract these professionals to the work. Unless EIAs are perceived as being worthwhile in and of themselves, rather than as largely pointless paperwork required only to satisfy government regulations, it is likely that those who make funding decisions will try to pay as little as possible for their preparation and their quality will continue to be low.

Finally, there has been no provision for continuing technical assistance in the EIA process after the end of the Program in September 2012. The technical assistance provided by the Program to the ministries of environment for the EIA process has proven to be very useful; the interviews uniformly noted the excellence of the technical assistance provided by the EPA. Several interviews indicated that the ministries will need additional technical assistance related to the EIA process after September 2012 when the Program ends.

While very productive and close personal connections appear to have been developed between USEPA officials and staff and their counterparts in the region, it is not clear whether permanent institutional links will develop. Additional technical assistance from the EPA will necessarily depend on additional funding. There is a clear risk that the region's underfunded ministries of the environment will be left without the technical assistance needed to fully establish the improved EIA processes.

### 3.4 IMPROVED ACCESSIBILITY AND QUALITY OF ENVIRONMENTAL INFORMATION

#### i. Air quality management

The goal of the air quality program is for the CAFTA-DR countries to improve air quality through an adequate management system that uses data tools for monitoring and an emission inventory, designs control strategies, sets air quality goals, strengthens compliance and enforcement, and stimulates public participation, among others. In order to guide the countries towards this goal, USEPA conducted a regional visit early on in the Program and assessed each country's air quality monitoring capabilities. As a result, PM10 samplers and training were provided to the CAFTA-DR countries that were not already conducting any air quality monitoring. In addition, a regional contact network was established to ensure proper personnel in the Ministries of Environment were engaged on the issue and in contact with one another. Once a technical base line for air quality monitoring was established based on readings from the PM10 samplers, the countries were in a better position to receive more targeted training.

CCAD and USEPA worked together to provide specialized training on "Management of Air Quality, "Quality Assurance", and "Communicating air quality information to the public" (<http://www.epa.gov/air/aqmportal/>). In addition, CCAD provided "in-house" training and conducted on-site training for technical personnel on monitoring Quality Assurance and Quality Control with the aid of USEPA. The Program provided specialized equipment to Costa Rica and Guatemala for air quality

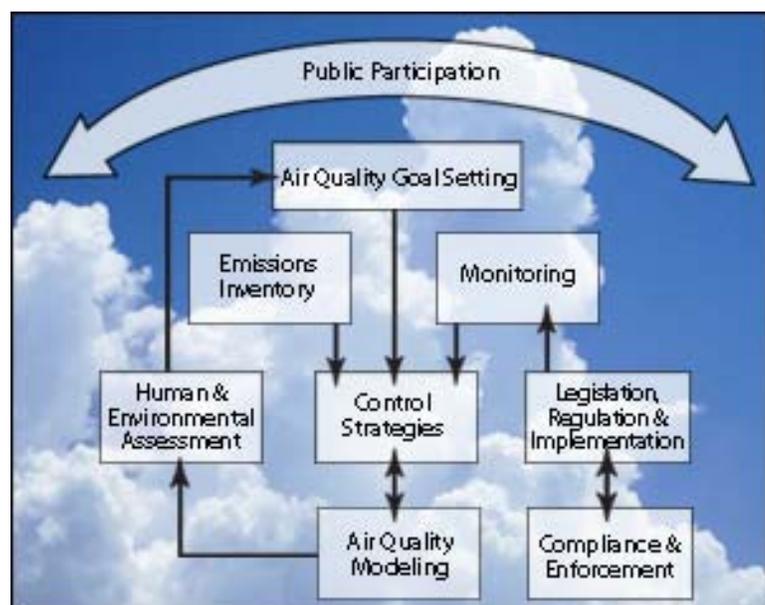


Image taken from: [www.epa.gov/air/aqmportal/](http://www.epa.gov/air/aqmportal/)

monitoring. Costa Rica finished its first inventory of criteria contaminants for the metropolitan area of San Jose in 2007 (UNA-CCAD 2007). El Salvador has three real time monitoring stations, and has the level of technology and measurement required to develop an air quality index. Costa Rica is in the process of procuring similar equipment. It is expected that by 2012 these two countries will be capable of developing a national air quality index. Ultimately, a *regional* air quality index could be feasible.

CCAD and the National University of Costa Rica have worked together on most of the technical needs in the region. Once a country has the results of an air quality inventory, government authorities are in a position to assess the impacts on total emissions from criteria contaminants (particles smaller than 10 microns (PM<sub>10</sub>), particles smaller than 2.5 microns (PM<sub>2.5</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrous oxides (NO<sub>x</sub>), total organic gases (TOG), reactive organic gases and ammonia). This allows the countries to develop strategies (short and long term) to better meet the air quality goals.

To address pollution from all of the emission sources (point sources, mobile sources, area sources and natural sources) policy decisions can be made, such as changing types of fuel used, decreasing the number of vehicles on the road per day, and the types and ages of vehicles, among other variables. As a result of this inventory, Costa Rica has taken the following actions for the mobile sources:

- 1) Changed diesel fuel S400 to S100 to decrease Sulfur emissions;
- 2) Has started analyzing the possible substitution of 100% or 50% of vehicles (taxis) and buses over 15 years of age for newer versions (<10 years old);
- 3) Installed vehicle use restrictions (no-use one day a week); and
- 4) Investigating restricting the import of vehicles older more than five and ten years old.

The Government of Costa Rica hopes that these actions will reduce particulate matter in the air and improve air quality. There is an expectation that these efforts will have a significant impact on decreasing the incidence of respiratory diseases in concentrated urban areas of the region. Subsequent inventories will be made in Guatemala, El Salvador, Nicaragua and the Dominican Republic.

## **ii. Environmental complaints, public participation and access to information**

### **1. Environmental Complaints and Public Participation**

With the support of CCAD, El Salvador, Nicaragua, and Guatemala worked on developing tracking systems for citizen complaints, and Costa Rica is working on new procedures for a complaints system. The Dominican Republic is preparing Terms of Reference for a citizen complaints system. In El Salvador, the complaint tracking instrument has been in place since 2008, and they are working now through a “919” telephone hotline to facilitate and increase public participation. Ministry officials report receiving many more complaints since the hotline was established, an indicator of more public participation and perhaps of more confidence in the system. Whether the resolution of complaints results in increased compliance with regulations and improved environmental performance by private or public institutions cannot be evaluated

based on currently available information. However, the EIA tracking system has been very useful as an administrative management tool. Directors can evaluate the time spent on complaints and control efficiency. Thus, they conclude that the amount of time invested in dealing with public complaints is reduced and a government office is able to be much more responsive to the public.

## **2. Transparency**

### ***Environmental Impact Assessment Tracking System***

The Environmental Impact Assessment tracking system was supported by USEPA and ELE-Chemonics. Apart from the goal of facilitating an administrative process that has traditionally been highly time-consuming for Ministry staff, the EIA tracking system also has the goal of providing a mechanism for users (administrative and general public) to verify the advancement of all permit requests – in other words, it serves to enhance transparency. Today, all six countries have a tracking system installed and working (El Salvador and Nicaragua already had systems of their own).

The Dominican Republic has been a leader in providing public access to the EIA tracking system on the web to provide full transparency. While an honorable step towards providing public access on behalf of the Dominican Republic, this action is certainly exemption, and by no means, a required or expected action by the other countries.

## **3. Access to Information**

### ***Indigenous Peoples in Guatemala***

Working with indigenous peoples resulted in two working agendas (in two indigenous languages) which have been shared within the communities and created knowledge opportunities in the process. The working methodology has been replicated and shared with others. The other line of work consisted of training events with 19 municipalities to explain the purpose and contents and reasons for the Wastewater Regulations (*Reglamento de Vertidos*).

### ***Pollutant Release and Transfer Registers (PRTR)***

The PRTR is a mechanism that should contribute to the development of a society better-informed about pollutants and hazardous materials in their communities, under the principles of transparency and right to information. PRTR is adopting the United Nations Institute for Training and Research (UNITAR) framework for establishing a regional platform for a PRTR in all six countries.

The database will be populated by data from established information centers and the companies releasing and transferring potentially harmful chemicals including information on the nature and quantity of such releases and transfers from point sources of pollution. With PRTR, the general public will be able to access information about the location of facilities, as well as determine whether pollutants are being emitted into the air, water or soil, or if they have any transfers of PRTR substances in hazardous waste or their water discharges in their neighborhood.

CCAD has supported PRTR awareness-raising workshops; generated a diagnosis of infrastructure for the implementation of the PRTR; and organized a technical visit from PRTR-SEMARNAT-Mexico to learn about their experience. Additionally, CCAD is supporting the Dominican Republic and El Salvador with the steps needed to implement national PRTR following the UNITAR Guide: establishment of the National Commission, definition of National goals and Objectives, definition of the list of chemicals, sectors, data handling and management, PRTR outcomes publicly accessible and implementation of a pilot project.

All CAFTA-DR countries are in a developmental stage of their PRTRs. Impacts therefore cannot yet be determined.

### iii. SERVIR/NASA

SERVIR is an internet based platform that integrates satellite and other geospatial data for improved scientific knowledge and decision-making by managers, researchers, students and the general public. In partnership with NASA and USAID, the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), SERVIR program provides historical analyses and data, crucial, time-sensitive satellite-based information, interactive web-based products and tools, information on current environmental and weather conditions. Additionally, SERVIR helps institutions monitor and forecast environmental changes and improve response to natural disasters in Central America and the DR. It provides a tool for more informed decision-making regarding climate change, health, agriculture environment, water and weather (NASA: [http://www.nasa.gov/mission\\_pages/servir/index.html](http://www.nasa.gov/mission_pages/servir/index.html)).

SERVIR was established in 2005 and after six years of work has “responded to some 48 extreme events across Mesoamerica, the Caribbean, and South. America including: floods, tropical storms, hurricanes, earthquakes, fires, and volcanic eruptions resulting in millions of dollars in savings. Recognition from national Governments, and United Nations, including Designing of SERVIR-Mesoamerica as a UN-SPIDER Regional Support Office” (NASA USAID CAFTA-DR January 31, 2011, PPT presentation in El Salvador). The Director of CATHALAC, Emilio Sempris, also notes that SERVIR has provided services to the region’s governments “in the form of training of government personnel and of information products and services for disaster management and environmental monitoring. We thus consider having developed capacity within the respective governments as a success, and having delivered governments with support for disasters (through provision of maps and other information products and services) in a timely fashion.”

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With the support of the USAID CAFTA-DR, SERVIR developed a project known as “Expansion of SERVIR in the CAFTA-DR countries for improved environment monitoring and informed decision making.” Through this channel, SERVIR developed a series of pilot projects that focused on geospatial technology oriented at evaluation of impacts, disaster management, and response. As a result, seven pilot projects among others

were designed in the CAFTA-DR region: (1) a landslide and red tide report for El Salvador, (2) forest cover for Costa Rica, (3-4) dynamic landslide hazard mapping for Nicaragua and Honduras, (5) satellite monitoring for prioritized lakes in Guatemala, (6) forest fire forecasting and risk system in the Dominican Republic, and (7) emergency operations assessment reporting and planning. Accompanying these there has been maps generated post-disasters, contributed with extreme events forecasting (storms, floods, fires and landslides). Most of their recommendations focus on impact evaluation. Additionally, in parallel to these specific pilot projects, there were training events during 2008 and 2009 particularly on the use of SERVIR facilities as well as on disaster management and response. In 2010, a symposium was organized in Panamá where all countries were represented to share the results of their pilot projects and practical use of SERVIR.

CAFTA-DR countries are now using SERVIR to access a large archive of satellite imagery to support decision-making in the areas of climate change adaptation, environmental management, and early warning for extreme events, among others. SERVIR program has conducted studies on the potential impacts of climate change in the CAFTA-DR countries on biodiversity, forest carbon, and water quality and quantity.

During this assessment the team visited several organizations that use SERVIR data, among them national meteorological services, universities supporting governments in identifying “hot spots” where forest fires are likely to occur (e.g. *Proyecto de Protección Ambiental, Universidad Pedro Henríquez Ureña*, Dominican Republic), and CEPREDENAC, the Coordinating Center for the Prevention of National Disasters in Central America, which comes under the umbrella of SICA. Ministries have been supported by SERVIR information regarding disaster magnitude and information management to channel work during and after extreme natural events (e.g. El Salvador).

Exhibit 3 provides a detailed inventory of the equipment donated to CATHALAC by USAID, from 2004 through 2010, including the source of funds for the equipment, whether they were acquired indirectly through the original USAID Participating Agency Service Agreements (PASA), directly through CATHALAC’s 2006-2008 Cooperative Agreement with USAID in the context of the Global Development Alliance (GDA), or indirectly with CAFTA-DR funding (and also via the extended PASA) and the purchase dates for the equipment.

In the opinion of Dr. Emilio Sempris, the Director of CATHALAC, “...the equipment has certainly contributed to development of regional capacities and has augmented CATHALAC’s infrastructure.” He noted that “...beyond the approximately \$153,647 in equipment/technical infrastructure funded under the CAFTA-DR funds, CATHALAC has leveraged an additional \$1,061,496..from private sector entities such as...Cable & Wireless and software producer ESRI...and an additional \$1,087,351 from various sources for staffing, including from the CATHALAC itself, the Panamanian Government, the European Union, the Inter-American Development Bank (IDB), and the United Nations Environment Programme (UNEP).”

**Exhibit 3. Inventory of Equipment donated to CATHALAC**

<b>Input</b>	<b>Funder</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>TOTAL</b>
Personnel	USAID CAFTA-DR	\$0	\$0	\$100,250	\$206,890	\$245,692	\$117,000	\$669,832
Equipment	USAID CAFTA-DR	\$0	\$84,086	\$40,561	\$15,750	\$13,250	\$0	\$153,647
<b>Sub-total</b>		<b>\$0</b>	<b>\$84,086</b>	<b>\$140,811</b>	<b>\$222,640</b>	<b>\$258,942</b>	<b>\$117,000</b>	<b>\$823,479</b>
% of Total		<b>0.0%</b>	<b>34.1%</b>	<b>39.3%</b>	<b>41.5%</b>	<b>38.2%</b>	<b>24.6%</b>	
Personnel	CATHALAC	\$92,000	\$96,000	\$118,800	\$259,680	\$362,748	\$158,123	\$1,087,351
Equipment	CATHALAC	\$585,800	\$66,160	\$98,800	\$54,800	\$56,300	\$199,635	\$1,061,496
<b>Sub-total</b>		<b>\$677,800</b>	<b>\$162,160</b>	<b>\$217,600</b>	<b>\$314,480</b>	<b>\$419,048</b>	<b>\$357,758</b>	<b>\$2,148,846</b>
% of Total		<b>100.0%</b>	<b>65.9%</b>	<b>60.7%</b>	<b>58.5%</b>	<b>61.8%</b>	<b>75.4%</b>	
<b>TOTAL</b>		<b>\$677,800</b>	<b>\$246,246</b>	<b>\$358,411</b>	<b>\$537,120</b>	<b>\$677,990</b>	<b>\$474,758</b>	<b>\$2,972,325</b>

### **3.5 IMPROVED PRIVATE SECTOR ENVIRONMENTAL PERFORMANCE**

This component of the Program assists private businesses adopt environmental management systems (EMS) and cleaner production practices and technologies (CP) which, in addition to improving their environmental performance by reducing their use of raw materials, energy consumption, generation of solid wastes and release of contaminants, also increases their profits, by lowering their operating costs, accessing niche markets, increasing their competitive advantage in well established markets regional and international, and bringing them into legal compliance with environmental regulations. According to the Combined Matrix of July 2011, this component of the Program had the following sub-programs: (i) increased use of cleaner production technologies; (ii) increased training in cleaner production and environmental management systems; and (iii) private alliances between buyers and producers/processors for the adoption of environmental and labor standards. The CCAD Work Plan for 2011-2012, however, has added another sub-program entitled “Voluntary Agreements for Cleaner Production.” The following sections discuss each of these four sub-programs.

#### **i. Increase use of cleaner production technologies**

“*Increase use of cleaner production technologies*” is the first expected outcome of the Program component. According to the 2011-12 Combined Work Plan, the 2009-2010 Work Plan and the 2011-2012 Work Plan the indicators for this component are the following:

The first outcome is:

*Companies in the priority sectors defined by DR-CAFTA increase cleaner production and clean energy practices and technologies adoption obtaining productiveness and environmental impact improvement.*

The corresponding indicators are:

- (1) *30 new companies in CAFTA-DR countries adopting cleaner production and clean energy technologies by the end of the extension period; and*
- (2) *Overall energy, water and solid waste use reduced by 10 %*

In its latest Work Plan (FY2011-12), ELE reports that **177 Companies** were provided with technical assistance on cleaner production, Environmental Management Systems and better management practices: 147 during phase I (2008-2009) and 30 in Phase II, following up from the initial portfolio).

For indicator 2, ELE reports that the data on reductions is still in process, but that the preliminary data indicate a greater than 10% reduction in energy, and water consumption and that more than 90% of the participating companies have implemented at least one of the recommended improvements.

The second outcome is:

*Conformity Assessment Procedures (CAS) are adopted for energy efficient equipment that contributes to change technology and consumption trends.*

The corresponding indicator for this expected outcome is:

*CAS adopted for energy efficient equipment that contributes to change technology and consumption trends in compact fluorescent lamp, air conditioners, motors and refrigeration.*

The 2011-12 Work Plan says that, “the CAS has been implemented in El Salvador and Nicaragua. According to CCAD, implementation of the CAS procedures is still in progress and final implementation data will not be available until the end of the program.” Our interviews indicated that at least seven factors increase the rate and extent of adoption of cleaner production practices and technologies. A summary of these seven factors are listed in **Exhibit 4**, and followed by a discussion of each factor.

#### **Exhibit 4. Summary of Factors that increase the Rate and Extent of Adoption of Clean Production Technologies**

1. If the possibility of a significant reduction in energy costs from cleaner production technologies exists
2. If the availability of sufficient financing for its associated costs such as technical assistance, equipment, training, construction and installation
3. If clean production technology is introduced through sector-wide associations and with the close cooperation of government agencies
4. If highly experienced and qualified technical advisors are readily available to private businesses
5. If Government policies and incentives encourage companies to adopt cleaner production technologies (i.e. create a market for green production, tax breaks, public recognition and awards)
6. If Government can use its power to sanction to induce companies to adopt cleaner production technologies by more strictly enforcing environmental regulations and standards and instituting policies that require cleaner production
7. If the opportunity for a business to differentiate its products, charge more, and gain access to additional markets exists

**(1) If the possibility of a significant reduction in energy costs from cleaner production technologies exists, then the rate of their adoption is likely to increase.**

A number of interviewees mentioned the significance for their companies of energy savings. The owners of the *Hotel Árbol de Fuego* in El Salvador and the *Hotel del Árbol* in Honduras, for example, noted that by reducing energy costs their hotel operations were able to not only survive, but expand. In Guatemala, the managers of the food processing companies *Neoalimentaria* and *Alimentos Montesol* emphasized how important the reduction in energy use and costs had been to their profit margins. In Panajachel, on the shore of Lake Atitlan in Guatemala, the managers of the hotels *Dos Mundos*, *Posada de Rodrigo*, *Hotel Jardines del Lago*, and *Porta del Lago* all emphasized how important the energy savings from clean production program was to their operations (their electric bills had been reduced by 25% to 35%).

In Costa Rica, representatives of FRUMAR, a fish packing plant, and la Corporación Ganadera (CORFOGA) in Costa Rica, an association of cattle producers, processors and retailers, emphasized the importance of energy savings to their businesses. Eloy León Dobles, the president of the fish packing and export company EXPOMAR, S.A. said, “Energy prices are the main determinate of the profits to be made in fishing and processing the fish in Nicaragua. Energy prices have gone up by 20% in the last 18 months and will rise another 24% by the end of 2011.” Consequently, like the other companies, his main interest in adopting cleaner production was to reduce his energy costs.

On the basis of the recommendations provided by Program consultants, a number of companies are reducing their energy costs: the sugar refinery *Azucarera del Norte*, S. A., in Honduras, is insulating its pipes; *Matadero Central*, in Nicaragua, has invested several hundred thousand dollars to buy more energy-efficient boilers; the *Cerveceria Nacional Dominicana*, a brewery in the Dominican Republic, is installing a more efficient boiler. In El Salvador, the Superior Institute found a substantial reduction in energy costs to be the greatest benefit from its cleaner production program. We did hear about other benefits from cleaner production technology,

especially reduction in the consumption of water and the cost of waste treatment. No other benefit, however, was mentioned nearly as often as the reduction in energy costs. We conclude, therefore, that a reduction in energy costs is frequently the single greatest attraction for many companies in the CAFTA-DR countries of adopting cleaner production technology.

**(2) Another factor that increases the rate of adoption of cleaner production technology is the ready availability of sufficient financing for its associated costs such as technical assistance, equipment, training, construction and installation.**

Sometimes the adoption of cleaner production technology is relatively inexpensive. For example, it did not cost the *Árbol de Fuego* hotel in El Salvador much to replace higher energy using light bulbs with energy saving light bulbs or to reduce consumption of hot water by installing more efficient shower heads. Moreover, the financial savings from lower operating costs may be high in comparison with the cost of the required investment. The Superior Institute in El Salvador, for example, invested \$25,000 in its cleaner production program but is saving \$4,000 each month as a result (meaning a payback period of less than 7 months).

Some of the investments required for cleaner production, however, may be too large to be financed from a company's profits. For example:

- Antonio Azurdiá, owner of the tire recycling plant EZ Home, in Guatemala, described to us how commercial banks have refused him credit to buy the equipment required to process used tires; consequently, his company's capacity to process used tires remains much lower than their potential supply.
- Juan Pablo Büchert, a Costa Rican expert in the financial aspects of cleaner production technology, noted that adequate financing restricts the ability of fishermen to adopt technologies that kill fewer marine turtles and suggested a scheme of distributing the costs through the entire production chain rather than asking the fishermen to assume all of the costs.
- Alexander Sánchez, owner of the *Granja Porcina* in Costa Rica, said that his farm must gradually finance technological improvements from its profits, since it is not feasible to borrow funds at annual interest rates of over 20%, which is what Costa Rican banks are currently charging.
- The representatives of the *Azucarera del Norte*, S. A. in Honduras also mentioned that the rate of adoption of cleaner production was limited by financing, since the company has to finance such improvements from its own cash flow.

ELE-Chemonics has worked to develop financing vehicles for Cleaner Production, conducting several workshops for the business sector and government, and working with several banks and financial institutions (the Bank of Central American (BAC), the Central American Bank for Integration (BCIE), and HSBC in El Salvador and Echo Capital in Costa Rica) to explore practical financing mechanisms. It is too early to see the results of these efforts, but we were encouraged by reports that some banks in the region are seeing a business opportunity in cleaner production and EMS, and are providing financing on that basis. At the same time, banks are starting to insist on solid EIAs as a prerequisite for loans to projects, as a way to reduce the bank's exposure to environmental risk.

**(3) A third factor that influences the rate of adoption of cleaner production practices and technology is the institutional structure through which the new technology is promoted.**

Our interviews indicated that the use of cleaner production increases more rapidly when it is introduced through sector-wide associations and with the close cooperation of government agencies. The cleaner production program of CORFOGA, promoting through CCAD, in Costa Rica, exemplifies how cooperation between a sector association and a government ministry can expand the use of cleaner production practices and technology. CORFOGA represents all parts of the market chain for livestock, from ranches to slaughter houses to supermarkets and exporters, and CORFOGA and the Ministry of Energy, Telecommunications and Environment (MINAET) cooperate to promote cleaner production through a voluntary agreement. In El Salvador, Cecilia Vega, the president of the Association of Ecological Hotels, said that, “we have achieved the best results when the association of hotels is involved rather than individual hotels...all the members of the association have become aware of the benefits that *Árbol de Fuego* hotel has achieved through its cleaner production program...”

Programs that provide technical assistance to individual companies rather than through sector associations are intended to serve as “pilot projects”, providing examples that other companies can emulate. For example, the example provided by the hotel *Árbol de Fuego* in reducing its energy costs has been the principal motivation for the members of the association of small hotels in El Salvador to replicate its adoption of cleaner production practices and technologies and, based on the model provided by one of its packing plants, Chiquita Brands in Costa Rica has replicated cleaner production practices and technologies in ten additional packing plants. matic replication of “pilot” models. Other companies will not necessarily copy the models of cleaner production provided by *Azucarera del Norte*, S. A, in Honduras, FRUMAR, in Costa Rica, or *Cerveceria Nacional*, in the Dominican Republic.

An example of a successful promotional event for the adoption of cleaner production practices was the first CAFTA-DR Trade Meeting on Cleaner Production in San Salvador in March of 2011 organized by CCAD and USAID, which convened business representatives from throughout the region to promote commercial deals, technology transfers, and information sharing on cleaner production, energy efficiency, and cleaner energy. CCAD, which helped organize the event, reported in its Quarterly Report (Second Trimester of 2011) that 89 businesses (with over a hundred exposition stands) participated in the fair, with hundreds more attending the fair and talks by cleaner production experts. CCAD reports that some 500 business meetings took place at the event and deals worth over US \$6 million were negotiated. The event should be replicated by regional government and sector-wide associations at periodic intervals to encourage knowledge sharing, business partnerships, and exposure to up and coming technologies.

**(4) A fourth factor that stimulates a faster rate of adoption of cleaner production technology is the ready availability of highly experienced and qualified technical advisors to private businesses.**

CCAD and ELE have provided Cleaner Production technical advisors through the Cleaner Production Centers. We were consistently told that the ELE and CCAD technical advisors were highly experienced and technically competent and had provided extremely useful technical advice to the companies or institutions that we consulted. It became clear that expert technical advisors in cleaner production technology can transform a company's operations. We think that additional funding could have been invested to implement a strategy for disseminating the pilot experiences in a systematic way and thereby creating a multiplier effect. Nonetheless, according to the staff of both ELE and CCAD, the pilot projects with individual companies have served as examples to other businesses, and there are a number of cases in which one company shared its experiences in cleaner production practices and technologies with other companies.

We observed several examples of how highly qualified technical advisors provided by the Program were able to diagnose company operations efficiently, identifying accurately the parts of their production processes that it would be most cost-effective to modify. An expert in the energy aspects of sugar refineries, for example, advised *Azucarera del Norte, S. A.*, in Honduras to insulate the pipes that carry hot water from its boiler to its sugar processor, and thereby save energy. Equally, technical advisors made recommendations that will save FRUMAR, a fish processing plant in Costa Rica, and *Cerveceria Nacional*, a brewery in the Dominican Republic, a great deal of energy. This type of technical advice, however, will not be available on an ongoing basis, since it was provided by means of a fixed-term project financed by USAID. As noted previously, it is not yet clear whether ELE's efforts to develop financing mechanisms for cleaner production, or emerging market forces, will be sufficient to provide the basis for extending cleaner production to many other companies once the Program itself comes to an end.

A different model for providing technical assistance in cleaner production technology is provided by the Cleaner Production Centers in El Salvador, Guatemala, Nicaragua, and Honduras and at the University of Costa Rica. In contrast to providing technical advice through a short-term contract with a consulting firm, this model involves using the technical resources of the permanent National Cleaner Production Centers (although it should be noted that to varying degrees, the Centers also rely on external funding). Since these cleaner production centers interact on an ongoing basis with other national institutions and organizations, such as government ministries, local governments, and industry associations, and form networks with clean production centers, government institutions, and universities in other countries, they can become permanent sources of technical advice in cleaner production technologies that continually accumulate experience and deepen and widen their inter-institutional ties. For example, it would be difficult for a consulting firm to establish an ongoing institutional relationship and programs with the U.S. Environmental Protection Agency. It would be easier for a cleaner production center or a university in one of the CAFTA-DR countries to establish to do so. Nonetheless, it should be noted that the operations of the Cleaner Production Centers so far have been largely financed by international donors such as the United Nations, the Spanish development agency and the World Bank.

**(5) Government policies can give positive encouragement to companies to adopt cleaner production technologies.**

An important government policy is to seek and strengthen collaboration with the private sector, rather than to take an adversarial position. Ricardo Aguilar, the Director of the CCAD-USAID Cooperative Agreement, noted that when the Program started “there was almost no communication between the public and private sector.” CCAD has made a conscious effort to improve the relationship between the private and public sectors by developing national cleaner production strategies, strengthening CP national committees, building organizational capacity, and promoting regional and national cleaner production awards. The ELE component of the program, with no direct government affiliation, has also served as an important bridge between the private and public sectors in promoting cleaner production,

Cesar Flores, Director for Environmental Management of SERNA in Honduras, described how SERNA and the Center for Clean Production realized that closer cooperation was required between the government and the private sector, and in 2007, developed a strategy for promoting cleaner production policy and incentives together in the form of national prizes for cleaner production. “The process has brought the public and private sector to work together, which is unprecedented, and which provides a good platform on which to build...Confidence in government institutions has increased” as a result. In Nicaragua, César Barahona, Director of the Cleaner Production Center, says “we believe in the model of territorial [local level] cleaner production based on the municipal governments and we are working with MARENA [the Ministry of Environment and Natural Resources] on implementing pilot projects on that model.” The Dominican Minister of Environment, Jaime David Fernández, remarked at the launching of BORSICCA in the Dominican Republic under the aegis of the National Network of Business for Environmental Protection (RENAEPA) that “We should involve local government and micro-businesses much more in the management of solid wastes.”

Another effective government policy to encourage the adoption of cleaner production technology is for the government to create a market for “green” productions by favoring them in their own procurements. Alberto Lorenzo, a professor at the Autonomous University of Santo Domingo, pointed out that “the Ministry of Planning and Development should adopt the policies that require and encourage clean production processes by providing a government market for products from cleaner production processes.” Maricela Muñoz, Regional Environmental Specialist with the Regional Environmental Hub at the U.S. Embassy in San José, noted that the Costa Rican government has included in its procurement manuals a requirement that ‘green’

products be given additional points in competitive procurements, as a way of contributing to the national goal of becoming “carbon neutral” by 2020. Silvia Elena Chaves, co-owner of the company FLOREX in Costa Rica, which produces cleaning products, told us how important this change in policy was to FLOREX’s commercial success: “the government obligated all institutions to purchase green products...which gave us a competitive advantage in bidding on contracts to supply



Flores Floor. Photo by R. Lizama, 2011

government institutions. The sales to government institutions are one reason why FLOREX has been able to expand its national and regional markets". All the governments of all the CAFTA-DR countries buy products, so they all have the potential to adopt purchasing policies that would benefit companies that use cleaner production technologies.

Another positive encouragement that governments can give to the adoption of cleaner production practices and technologies is to lend its strong support to awards to companies that have adopted them. Nicaragua has been the leader in recognizing companies that have adopted cleaner production practices and technologies, distributing five national awards for cleaner production since 2006. Hilda Espinoza, Director General of Environmental Quality in the Ministry of Environment of Nicaragua, told us that, "The prizes have attracted considerable interest and over 250 companies have participated in the competition....because winning the award helps to differentiate a product from the competition." She does note, however, that "there are at least five other awards that are similar to the clean production award, which may cause confusion for consumers."

One example of the positive stimulus provided by the Cleaner Production Awards is Wal-Mart Central America's meats division, *Industrias Cárnicas Integradas* (ICI). This company receives beef, pork and chicken meat and processes it as fresh cuts, ground beef and marinated products. In 2008, the Program prepared an analysis of ICI's processes and ICI management decided to focus first on their internal and commercial labels in order to reduce material generation and ink use, and of course, cost. This change of labels required an investment of US\$14,000 in labeling equipment. With the savings generated, the investment paid for itself within 10 months and contributed to a reduction of 74.4% in materials used which is a significant reduction of solid waste generation. ICI also reported a decrease of 67% in costs, savings that enabled them to lower prices for the consumer.

ICI has been working with Cleaner Production over the last four years and has taken part in several award competitions. They won the National Cleaner Production Award based on their improvements in labeling, and received a special mention in the Regional Award. The company is now preparing itself to adapt an Integrated Management System according to OSHAS 18001 standards for Labor Risks Prevention. They are already in the process of acquiring the ISO 22000 Standard related to Food Safety in the food chain.

Rosa Otero, the Director of Commerce and Environment in the Ministry of Environment of the Dominican Republic noted that, "the contest and awards to companies for cleaner production have been an incentive for many companies to bring themselves into compliance with the law." Under current guidelines, she noted, a company cannot receive an award if it is not in compliance. Previously, the awards process in the Dominican Republic had been sending a very mixed signal, because awards were sometimes given to a company "that wasn't even fulfilling the basic requirements of environmental regulations." The compliance criterion is important, and has other implications for selling in the international market. In Costa Rica, Carlos Enrique Aroya, the President and co-owner with his wife of FLOREX, which won the national and regional award for cleaner production, said that "having won the prize has permitted us to be more dynamic and continue with the process by moving into the markets for more massive consumption and by selling to agro- industry that exports to Europe and therefore gives importance to buying green products."

**(6) Government can use its power to sanction to induce companies to adopt cleaner production technologies by more strictly enforcing environmental regulations and standards and instituting policies that require cleaner production.**

In Honduras, for example, Julio Eguigure, Director of Environmental Control and Evaluation in SERNA, said that their new administrative tracking system “would enable us to identify more easily those companies that have not obtained an environmental license.” He now has the ability to “tell the companies to comply with the requirement within three months or close them down.” When the administrators of a company feel that the risk from non-compliance with environmental regulations becomes too high, then they may decide to invest in cleaner production technologies as a means of compliance that also reduces production costs.

In the Dominican Republic, José Contreras, Director of the Center for Environmental Management in the Dominican Technological Institute noted that, “companies in the Dominican Republic are leery of any government-sponsored cleaner production initiative, fearing that the government will use it to inspect their production practices and impose sanctions.” Also in the Dominican Republic, Henry Monsanto, General Manager of the agrochemical company FERQUIDO, suggested that this potential conflict between the ministry of environment’s role in encouraging the use of cleaner production technology and its role as a regulator could be partially resolved if “the government were to permit an effectively implemented environmental management system to substitute for the preparation of environmental impact assessments as a means to obtain an environmental license.”

The introduction of cleaner production technologies and environmental management systems has frequently improved the overall operations of companies by stimulating them to improve their system for keeping accurate records. Daniel Ayes, Technical Director Honduran Cleaner Production Center in San Pedro Sula, Honduras noted that, “competing for the prize for clean production has served as catalyst for companies to keep their paperwork in order and keep track of data.” Silvia Chavez, co-owner of FLOREX, said that preparing the paperwork to apply for the cleaner production award, “taught us how to prepare for an environmental audit and was very useful.”

Henry Monsanto, the General Manager of FERQUIDO, noted that, “by becoming meticulous in our record keeping, we have greatly reduced the volume of chemicals that we must discard because they have passed their expiration date. Moreover, we can now prove our compliance with international environmental and labor standards to our customers, which they like since some of their customers need to know that the products they are buying meet international standards.” In general, the introduction into a company of cleaner production technology must start with a baseline study which in itself requires accurate recording of data; it then leads to the installation of environmental management systems that are also based on accurate record keeping. Then the company’s entire operations benefit from more accurate recording, analysis and use of data. In this way, the introduction of cleaner production practices and technology often increases the profitability and competitiveness of companies.

In Nicaragua, which is implementing a decentralized model for environmental protection and enforcement, César Barahona, Director of the Center for Cleaner Production, said that it is

effective to use “the model of cleaner production within a territorial [regional] focus rather than just working with a focus on different economic sectors.” He commented that “successful pilot projects were a useful mechanism for introducing the concept of cleaner production in Nicaragua and may be a way to introduce the concept of territorial cleaner production too... especially in relation to the problem of solid waste, which is the principal concern of municipal governments...”

**(7) Another powerful incentive for a business to adopt cleaner production technologies should be the opportunity for it to differentiate its products, charge more, and gain access to additional markets.**

When a government favors the procurement of ‘green’ products, as some sectors of the Costa Rica government have done, it can create a market that can be important to particular companies, as was the case for FLOREX, as discussed above. The creation of a market chain that demands ‘green’ products also creates market demand that can stimulate companies to adopt cleaner production technologies. Again, FLOREX provides an example: according to its vice-president, Silvia Elena Chavez, the company is now both demanding ‘green’ products from its suppliers as well as supplying ‘green’ products to its customers, including Wal-Mart and hotels that have certification as “eco-hotels”. Similarly, in the Dominican Republic, the fertilizer company FERQUIDO supplies large agro-industry that demands, if not necessarily “green” products, at least careful accounting of the origin and handling practices of the fertilizers that they buy, so that they can in turn demonstrate to their customers that their products have not harmed the environment.

However, several people pointed out that sometimes cleaner production raises the cost of producing products and that cost cannot always be passed on to consumers in poor countries, where there is less disposable income and often little demand for “green” products. For example, Rosa Otero, Director of Commerce and Environment in the Ministry of Environment of the Dominican Republic noted that cleaner production is a difficult concept to introduce into the general population as well as into private companies in the Dominican Republic. “When investments are significant and will generate a more expensive product (even though they are saving water and electricity as well as being less of a polluter), the Dominican consumer does not have the income to choose the higher-priced but more environmentally friendly product.” Nonetheless, in our opinion, increased profits and market share are often a powerful incentive for companies to adopt cleaner production technologies and even when they may raise the cost of the products: the hidden environmental costs of “unclean” production should not be ignored as a way of compensating for poverty.

**ii. Increased training in cleaner production and EMS**

This component of the Program is “*Increased training in cleaner production and EMS*”.

It has three expected outcomes:

- (1) *Environmental science curricula and programs in the area of clean production, EMS improved in at least five universities in CAFTA-DR countries;*
- (2) *At least one course using this curricula offered to undergraduate students; and*
- (3) *Practical trainings in cleaner production, EMS offered for university students.*

The corresponding indicators for these outcomes are:

- (1) *At least 150 undergraduate students have taken this course;*
- (2) *At least 100 undergraduate students have completed a practical training in cleaner production.*

ELE's most recent Quarterly Report, covering the period April-June 2011, reports a region wide total of 402 students and 139 docents having taken the course, with another 84 students having completed practical training (a *practicum*) in cleaner production.

Our interviews indicate that the Program has implemented a number of activities that have introduced cleaner production and EMS into the curriculum in universities in the CAFTA-DR countries and has provided other training opportunities in cleaner production technologies.

In the Dominican Republic, CCAD assisted the Dominican Technological Institute, INTEC, to develop a diploma course in cleaner production practices and technologies. The cleaner production centers of Nicaragua and Guatemala served as trainers for local teachers and a group of professional from government agencies, universities and private sector. We interviewed Fernando Lopez, Juan Sanchez, and Elias Gomez, all of whom had attended the course given in the Dominican Republic. They all agreed that the diploma course was excellent technically, and that it served the objective of generating a multiplier effect through their work in their home institutions. They felt that the course gave them considerable practical experience, and they now consider themselves to be cleaner production professionals.

The numerous training events that the ELE and CCAD Programs have organized gave an impulse to the adoption of cleaner production, which suggests that the governments of the CAFTA-DR countries could continue to encourage the adoption of cleaner production technologies by providing further training. Our interviews indicated how cooperation between the ministries of environment and the cleaner production centers can increase the effectiveness of such training events. We received uniformly positive comments about the quality and usefulness of the training courses in cleaner production.

Elvin De Peña, Environmental Management Coordinator in the Dominican National Brewery and a graduate of the first Cleaner Production diploma course in the Dominican Republic, said that "the concept of cleaner production should be established among managers and decision-makers in the production sectors as well as the workers...I found the course a satisfying professional experience and an excellent course." As a result of attending the course, he made three proposals for implementing cleaner production (a more efficient boiler; recycling of glass bottles; treatment of solid waste) in the brewery, and all three were accepted by the management and are being implemented.

Henry Monsanto attended a course in environmental management systems and found it so useful that he formed a "team of implementers" and introduced an environmental management system into his company FERQUIDO. Rosa Otero, Director of Commerce and Environment in the Ministry of Environment of Dominican Republic pointed out that the training courses have encouraged "a number of companies to adopt cleaner production methodologies." Tracking

implementation, however, was not part of the design of the diploma program, so the Ministry did not really know how widely and thoroughly cleaner production practices had been introduced as a result.

### **iii. Voluntary Agreements for Cleaner Production**

In this component of the Program, CCAD has taken the lead role in promoting public-private voluntary agreements for the adoption of cleaner production practices and technologies, providing technical assistance to companies with in-plant-assessments by consultants from the Cleaner Production Centers and from international experts; training to and through Cleaner Productions Centers and universities; organizing and implementing the process of awarding national and regional awards for cleaner production; and distributing technical guidelines for environmentally sound production practices in several business sectors.

ELE has taken the lead role in preparing diagnostic reports on CP and EMS for companies, offering technical assistance for the CP and EMS measures implementation, providing technical assistance and training to and through educational institutions, negotiating alliances for cleaner production in the mining, tourism and agricultural sectors among others, developing feasibility studies (as in methane) to promote the new technology adoption (innovation) and preparing technical guidelines for environmentally sound production practices in multiple economic sectors. ELE also developed a course on Environmental Management Systems and Cleaner Production at the Bachelor degree level at eleven universities in the six countries, providing training to faculty and students as well as fostering practicums and thesis programs. ELE has also undertaken an important effort to develop and promote financing mechanisms with several banks operating in the region (e.g., BAC, HSBC, and Echo), although the Assessment Team was unable to assess and potential in the critical area of financing for Cleaner Production investments.

CCAD notes several important criteria for the successful adoption of cleaner production practices and technologies. A primary criterion is political will at a high level and the support of a variety of national organizations in the effort. CCAD has helped promote the establishment of national cleaner production policies. National policies can encourage the adoption of best environmental practices, revise the regulatory framework to make it more supportive, and help stimulate research and dissemination of information about CP technologies and best practices.

In parallel with the development of national policies, the Program has encouraged the creation of national inter-sectorial committees for cleaner production to coordinate programs and strategies in support of national cleaner production policies. These committees are made up of leading business associations, universities, National Cleaner Production Centers, and the relevant government agencies. CCAD has worked in all the CAFTA-DR countries to form and strengthen these committees. A Regional Inter-Sectorial Technical Committee for Cleaner Production was set up to coordinate country priorities regarding the adoption of cleaner production practices and technologies.

Among the important initiatives taken by the Regional Inter-Sectorial Committee was the establishment of regional awards (five competitions have been held to date) to businesses for implementing cleaner production practices. The regional awards, along with their national

equivalents, have proven to be an important incentive for the adoption of cleaner production practices and technologies. The creation of the regional awards was supported by USAID and other foreign assistance agencies.

CCAD also supported the strengthening of Nicaragua's national prize for cleaner production through the country's existing Center for Cleaner Production, which served as the model for the other Cleaner Production Centers. In addition, CCAD supported the establishment of national awards for cleaner production in El Salvador, Guatemala, and Costa Rica, while ELE-Chemonics has been working with the Ministry of the Environment in Guatemala to create a National Green Seal in recognition of environmental excellence and as a further stimulus for cleaner production. Based on our interviews with people who have been associated with the national and regional prizes for cleaner production, we believe that the Cleaner Production awards are an effective incentive and help generate political support and public awareness of the program. Have helped increase awareness of cleaner production among businesses and the general public in the CAFTA-DR countries as well as in increasing the political support for the implementation of government policies in favor of cleaner production practices and technologies.

Voluntary Agreements for Cleaner Production are an important environmental management tool. Based on agreements between the public and private sectors, their goal is to "reduce pollution at the source." Participating companies work out, in conjunction with their public sector partners, a series of measures designed to reduce their use of natural resources and generation of waste, and therefore their costs. CCAD comments that important factors were also a training mission on cleaner production to Chile that CCAD organized, as well as workshops in cleaner production and voluntary agreements for cleaner production in the regionally-identified priority business sectors of poultry, dairy, slaughterhouse, and tourism.

A Regional Guide for Cleaner Production provided a model for national agreements. Countries like Costa Rica and El Salvador have adopted the model to fit national conditions and have developed similar processes. Working through national business associations, they have been able to reach agreement on common goals for reducing their environmental impact while raising their productivity. This model, CCAD notes, has helped the application of Cleaner Production to whole segments of the local economy. According to CCAD figures, for example, 20 per cent of El Salvador's milk and more than 70 per cent of Costa Rica's meat is produced under Voluntary Cleaner Production Agreements.

CORFOGA, the association of Costa Rican cattle ranches, is a public institution with non-governmental character financed by a quota of US\$2 per slaughtered animal. In the first phase of the program, they focused on the adoption of Voluntary Agreements on Cleaner Production for slaughterhouses which are being implemented in coordination with the Ministry of Environment through CCAD program. Another voluntary Agreement on Cleaner Production signed with the *Cámara de Ganaderos Unidos del Sur*, cattle producers association, in August 2009 and with CIISA (*Centro de Inversiones Internacional, S. A.*) on March 2010. Altogether they represent four plants (Montecillos, El Valle, GICO (*Ganaderos Industriales de Costa Rica*), and CIISA) which make up 80% of the activity of cattle ranching in Costa Rica. The Voluntary Agreement is a two year commitment to achieve the goals. Following the program, these three plants have been able to reduce water usage, cut energy and fuel consumption, decrease non-recyclable

waste generation by increasing recycling. At the same time, they have improved management of bad odors and in occupational health.

Compliance with the voluntary agreement has meant investments that have paid off and have allowed significant savings of money. This, in turn, has increased the trust and established good working relations with officials and staff in the Environmental Quality Management Directorate (DIGECA), part of the Ministry of Environment, Energy and Telecommunications (MINAET).

CORFOGA has delivered training sessions for 103 persons from different companies and more or less covers, all of the agents in the beef chain; primary producers, however, is the sector where CORFOGA deals with more projects such as cattle credit. CORFOGA developed a strategic Alliance with the Ministry of Agriculture and Cattle (MAC) and with the *Banco Nacional de Costa Rica*. This agreement allows the producer to pay less interest because CORFOGA and the MAC are supporting the rate interest with four percentage points which is “Passive Basic Rate + 4P”. That is how the cattle rancher would be paying interests on the PBR only. The success of CORFOGA’s Voluntary Agreement has stimulated interest on the part of other members of the livestock production chain in joining the voluntary agreements.

Another model has been the application of Cleaner Production on a territorial or geographic scale, with the participation of local actors in the process: municipal governments, local business leaders, trade unions, national government delegates, NGOs, and others. The territorial model was applied as a pilot project in Guatemala in the town of Panajachel in response to serious pollution in Lake Atitlan, on which the town depended for much of its livelihood.

Overall, this component has provided excellent assistance to improve the environmental performance of sectors that are important to the economies of the CAFTA-DR countries. We found that in general CCAD and ELE have coordinated their actions effectively with each other. Together their work has introduced cleaner production practices and technologies into over 300 companies in the CAFTA-DR countries, a remarkable achievement in view of the few years that the Program has operated. Given the likely number of private businesses operating in Central America and the Dominican Republic (8,000 according to one source), there is certainly room for this clearly productive program to grow. For the Program to make a greater contribution to the environmental performance of the private sector in the CAFTA-DR countries, it would need to continue over at least several more years, expand into new sectors and new geographic areas within the countries and become well-established institutionally, both within each CAFTA-DR country and as a regional program.

#### **iv. Private Alliances between buyers and producers/processors for the adoption of environment and labor standards**

*"The rules of the global economy should be aimed at improving the rights, livelihoods, security, and opportunities of people, families and communities around the world."*<sup>6</sup>

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<sup>6</sup>ILO: *A Fair Globalization: Creating opportunities for all*, Report of the World Commission on the Social Dimension of Globalization (Geneva, 2004).

USAID is providing technical assistance to governments and the private sector for the promotion of compliance with voluntary environmental and labor standards. The private sector's specific needs are addressed with flexible incentives and technical assistance for the adoption of cleaner production technologies, environmental management systems, and best practices to improve environmental performance and competitiveness.

The support to implement better practices along the value chain was executed by a number of institutions and independent consultants under Chemonics' responsibility and aimed at commercial alliances between two or more participants in the selected value chains.

In August 2010, USAID E-CAM and ELE-Chemonics formulated a revised Combined Work Plan of activities to be implemented under the "Private Alliances" component of ELE's program. A key element of this line of activity is that of offering the private sector an opportunity to do more and better business based on the generation of a differentiated product that is more environmentally-friendly and can be marketed as such to a wider, or a new, customer base.

The Private Alliances Component has the following expected Outcomes:

- (1) *Development of private sector alliances that promote labor and environmental standards and/or certifications programs;*
- (2) *Development of new voluntary labor or environmental standards and/or certification program; and*
- (3) *Technical assistance for local private sector companies along the value chain to help them complying with voluntary labor and environmental standards and/or certification programs.*

The corresponding indicators for these outcomes are:

- (1) *At least four private sector alliance partnerships developed promoting voluntary labor and environmental standards or certification schemes through their supply chains.*
- (2) *At least 24 companies in CAFTA-DR countries selling products made under standards as a result of the alliances established.*
- (3) *At least six producers in each CAFTA-DR country newly compliant with alliance voluntary environmental and labor standards or certification schemes as agreed to between major buyers and sellers.*
- (4) *Two new voluntary labor and/or environment standards or certification schemes agreed to by national, regional or international buyers.*
- (5) *Four thousand workers benefitting from improved working conditions from their employers adopting voluntary standards under new alliances.*
- (6) *At least two new voluntary labor and environment standards or certification schemes adopted (e.g. horticulture and fisheries) by national, regional, and international supermarkets and/or other major buyers and applied to their suppliers in CAFTA-DR countries.*

*(7) Increase of total sales of products made under newly adopted standards, certification schemes and alliances.*

*(8) Change in profitability due to reduced costs and/or increased revenue as a result of alliances.*

It should be noted that many of the above were ongoing activities that had begun well before the revised Combined Work Plan was prepared. It also needs to be noted that in some cases, results-- as distinct from outputs--will only be evident after the current Program is over.

Chemonics' primary goal in this area is to deliver products designed to build commercial alliances to improve labor and environmental performance in five productive sectors. Important deliverables are the compilation of environmental legislation for each country, development of a directory of Best Agricultural Practices, support for the development of Cattle Standards, preparation of studies and analyses for participating companies to define action plans to prepare for the adoption of cleaner production programs and to develop the certification processes in several categories. Chemonics subcontracted the World Wildlife Fund (WWF), the Rainforest Alliance (RA), Social Accountability International (SAI), FQB Lab, along with individual specialists order to ensure proper and timely delivery of products and technical assistance. Examples include:

- WWF promoted Better Fishing Practices and designed a Tracking System of fish population for the region. It succeeded in the reduction of by-catch of sea turtle and other non-commercial species. Precision agriculture, integrated pest management and better practices were developed and implemented along with agro-climatological stations on a pilot basis;
- RA carried out public consultations on the Sustainable Cattle Production Systems Standard to define criteria and indicators for cattle ranches interested in the RA Certification; and

SAI promoted the adoption of voluntary labor standards for the improved treatment of migrant workers in the sugar cane sector of the Dominican Republic and provided training for the implementation of the SAI Social Fingerprint Supply Chain Rating System. Other local specialists and better agriculture practice audits supported the field-level application of commercial certification protocols (e.g., Davis Fresh or Global GAP), the construction of demonstration facilities, field audits, and financial mechanisms or business models as mechanisms to help make this effort sustainable.

For execution and reporting purposes, Chemonics subdivided the work in this component into five subcomponents which represent the following productive sectors in CAFTA-DR countries:

1. Mahi-mahi (Costa Rica and Nicaragua)
2. Melon and Pineapple (Costa Rica, Guatemala, and Honduras)
3. Vegetables (El Salvador and Guatemala)
4. Cattle Sector (Costa Rica and Nicaragua)
5. Sugar Cane (El Salvador, Guatemala, Nicaragua and the Dominican Republic)

The business-to-business approach between companies along the value chain allowed the Program to reach six agreements duly signed and executed between local producers and local, regional or international buyers (broccoli, beef, sugar, okra, and two for Mahi-Mahi). These agreements are comprised of different productive sectors and represent as of June 2011 a total of 179 producers distributed in Guatemala, Nicaragua, Costa Rica and El Salvador (96 broccoli farmers, 82 fishermen, 1 okra farmer).

ELE also worked on the adoption of voluntary standards or certification schemes incentivized by international markets and by means of an agreement the Rainforest Alliance had reached for beef and sugar standards in Costa Rica, Nicaragua and the Dominican Republic, while developing the voluntary environmental standards for the *Asociación de Supermercados de Centro América y Panamá* (Supermarket Association of Central America and Panama, SUCAP) and its local partner in El Salvador, *Supermercados Selectos*, to be integrated into its supply chain<sup>7</sup>.

In addition, the Program began implementing the SAI Social Fingerprint Supply Chain Rating System and the Rainforest Alliance Certification and Sustainable Cattle Ranching Standard. Finally, the Program has encouraged alliances to prioritize Cleaner Production in the processing plants, as part of the value chain.

According to Chemonics' progress reports, the results as of June 2011 (with one Quarter still to go in the life of the program) are as follows:

- 20 (out of a planned 24, with some deliverables pending before the end of the program, according to Chemonics) companies in CAFTA-DR countries selling products made under standards as a result of the alliances established;
- 2 (as planned) new voluntary standards developed and implemented: sustainable cattle production system and the regional environmental standards for fruit and vegetables for the Supermarket Association of Central America and Panama;
- Over 7,000 workers (considerably more than the planned 4,000) benefitting from the implementation of Best Management Practices or standards; and
- Sales generated by alliances:
  - Del Tropic - Marco Tulio Alegria: 25 tons of okra
  - Gessa - El Arreo: 1090 tons of meat
  - Neoalimentaria - Grupo primavera: 578 tons of broccoli
  - Seadelight - Frumar: 170 to 200 tons of Mahi-mahi
  - Seadelight - Expomar: 75 to 80 tons of Mahi-mahi
  - Approx. 2,000 metric tons of differentiated product

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<sup>7</sup>Ref C.1.2.1. FQB LAB, Entregable 2 - Protocolo de Estándares para Super Selectos, 08 Abril 2011.

**(1) Mahi-mahi (Costa Rica and Nicaragua)**

The program includes supporting research on the effectiveness of fishing gear, best fishing practices, cold chain custody, safety onboard ship, and the introduction of compliance observers in the fishing boats to gather and record information to feed a the tracking data base administered by WWF and the Interamerican Tropical Tuna Commission (*Comisión Interamericana del Atún Tropical, or CIAT*). The program “Decrease in incidental by-catch of sea turtles and its contribution to the alliance Sea Delight-FRUMAR” was implemented by WWF in Costa Rica in December 2010 to reduce the by-catch of sea turtles in Mahi-Mahi fishing. During the interview in Costa Rica, Alvaro Segura, Coordinator of By-Catch WWF, highlighted that the strength of this project lies in its voluntary nature.

In Nicaragua, EXPOMAR, a processing plant, has benefited from assistance from ELE-Chemonics over a four year period. Phase 1 called for a reduction in by-catch, and Phase 2 requires implementing the traceability system. This system will be articulated with the plant codes to complete the custody chain of seafood products and trace the origin of the product from the sea to the processing plant, as well as guaranteeing the products have been caught using better fishing practices.

The company also sells fishing gear, and according to Mr. Eloy León Dobles, President of EXPOMAR, they are “now selling a lot more hooks.” He explained that the company prefers to deal directly with fishermen, not with an association of fishermen. “Relationship is always at the individual level,” confirmed María Luisa Velásquez, although two years ago the fishermen organized a Cooperative (officially registered as “*Cooperativa de Pesca Artesanal y Servicios Múltiples 2 de septiembre, R. L.*”) which has 32 members, 15 of whom are owners of the *pangas* (fishing boats). The Cooperative bought four motors from EXPOMAR and will pay for them in installment payments over a period of 18 months. They emphasized the advantage of buying with a tax exemption under the EXPOMAR umbrella.

Both FRUMAR and EXPOMAR received support from ELE-Chemonics to implement Cleaner Production methods into the fish processing company. The Cleaner Production Center prepared an analysis of where improvements should be made, and all of its recommendations have been implemented, along with additional improvements. In Nicaragua, EXPOMAR is very interested in the creation of a unique fishing seal to promote marketing of their efforts and improved business practices. FRUMAR in Costa Rica, on the other hand, has doubts about pursuing additional certifications, because of the costs involved.

Data gathered by compliance observers report the greater effectiveness of improved fishing gear and practices, the reduction in by-catch of sea turtles, and greater fishing productivity per boat, ensuring sustainable Mahi-Mahi fishing.

Program implementers believe it will be critical for a long-term relationship to offer certified product to principal buyers, Sea Delight and Winn Dixie, who signed the alliance in the previous phase. To do so, WWF is working to prove the effectiveness of the tracking system with commercial trials for tracking the product from the sea to the consumer.

Juan Pablo Büchert, an independent consultant, was contracted by ELE-Chemonics to analyze the case of Mahi-mahi fishing where the market chain is very vulnerable. He was asked to provide the design of a financial model to create a fund that could provide low cost equipment for fishermen as a sort of ongoing subsidy, at least in the initial stage of the mechanism, and distribute the costs and benefits along the chain. According to Mr. Büchert, due to the economic fragility of this market chain, the costs make the primary producer (the fishermen) more vulnerable, because he is the one assuming the cost of adopting better practices. Despite improvements and adoption of cleaner production methods at the processors' level, the market price is too inflexible to allow a return on investment. The promotion and positioning of a differentiated product (such as a certified product) therefore becomes critical for obtaining better commercial conditions, including better prices.

CAFTA-DR calls for standards to be harmonized at the regional level, but in practice, countries are still struggling to reach the local minimum. A better financial model will be needed in order to distribute the costs more fairly, a model that promotes decent working and living conditions at the rank and file level.

The exit strategy of the Program calls for a fund to be established to provide fishermen with loans to buy their fishing gear. The fund will be jointly managed by a local NGO as well as an international NGO. The financial fund proposal seems to be a useful start to support the local communities. The Program is finishing in September 2011 but ELE-Chemonics believes the arrangement can be sustained because both parties in the Alliance are committed to a continuing business relationship. According to ELE, the main buyer, Sea Delight, has agreed to offer a "premium" price for a product produced under better practices, and the local processor is committed to the process, which includes on-board observers, data collection for the database, and the implementation of a traceability system.

## **(2) Melon and Pineapple (Costa Rica, Guatemala, and Honduras)**

The Program supported companies participating in alliances seeking the adoption of Better Agricultural Practices. Subcontractor WWF took the lead in the environmental efforts introducing "precision agricultural" techniques to control environmental impacts from excessive pesticide use and providing pest integrated management practices to reduce the toxicological risk from the use of hazardous chemicals. The whole process includes diagnostic, analysis of better and worse practices, toxicological budget, better practices proposal, use of the agro-climatological stations to develop pests and irrigation control models, application of the models, and monitoring.

The "precision agriculture" management involves the use of Global Positioning System (GPS) data, technologies such as moistures and temperature sensors, satellites, aerial imagery and Geographic Information Systems (GIS) to estimate and evaluate variation in cultivation conditions. Demonstration cultivation plots belong to the *Costeña* company in Costa Rica and to *Agro-exportadora Valle Verde* in Guatemala.

In Costa Rica, Luis Diego Murillo, General Manager of *Agricoladel Valle*, stated that ELE-Chemonics delivered an analysis of agricultural practices and an inventory of agrochemicals in melon production in April 2010, however no follow-up took place and the company by itself

implemented improvement measures which still need to be evaluated. According to ELE-Chemonics, part of the alliance between Chiquita Brands and *Agrícola del Valle* contemplated as exit strategy that the main buyer takes the lead to provide local producers with follow up and support in the future.<sup>8</sup> In 2011, a new initiative began and the company received in March 2011 a cleaner production study of its operations. The company was to implement actions during July and August. *Agrícola Del Valle* expressed frustration at the difficulties of legalizing farm practices, because there are no clear limits of responsibilities among governmental institutions. While waiting for jurisdictions to be clarified, they have had to suspend activities at the plantation with the subsequent loss of product and the dismissal of 50 workers.

According to ELE-Chemonics, in Guatemala the participating companies *Melones del Sol*, *Agroexportadora Valle Verde*, *Fruta Mundial* and *El Castaño*<sup>9</sup> were producers of Chiquita Brands and Sun America Imports and have undergone a preliminary evaluation to establish potential areas to implement Cleaner Production practices. Later, in March 2010, WWF conducted Best Agricultural Practices workshops for these melon producers who were interested in developing environmentally friendly best practices and gaining access to new market opportunities.

José Vásquez, Director of Regional WWF in Honduras, stated that the ELE Program has helped support a larger program to promote the adoption of best practices and to introduce “Precision Agriculture” through the use of microclimate monitoring stations and computer programs that advise farmers what amounts and types of pesticides to apply and how much irrigation water to apply. This allows for significant reduction in the amount of pesticides used and water consumed. WWF has formed strategic alliances with a number of producers, providing technical assistance focused on improvements in three areas: (1) efficiency/productivity, (2) environmental performance, and (3) labor conditions. While a promising application of technology, the microclimate monitoring stations that allow for precision agriculture may be difficult to sustain among smaller producers once the program ends because of the costs involved.

The work plan established for the last nine months (Jan-Sept 2011) of the ELE-Chemonics project in Honduras has largely been accomplished, with the exception of the commercial alliances which did not prosper, and no alliances have yet been formed.

WWF reported agro-climatological monitoring stations installed in Costa Rica and Guatemala to collect data (precipitation, leaf and soil humidity, etc.), data which help farmers practice precision agriculture and reduce the use of pesticides and herbicides and water consumption. This effort, along with the implementation of Better Agricultural Practices (BAPs) permitted a number of alliances in the value chain:

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<sup>8</sup>As is the case with the fishing sector where the business relationship remains between the main buyer and the local processor.

<sup>9</sup> WWF and the Guatemalan Cleaner Production Center prepared the reports Preliminary Evaluation for *Agroexportadora Valle Verde* and *Fruta Mundial* in December 2009 and the Evaluation Report for *El Castaño* in March 2010.

- Pineapple sector: *Agrícola del Valle* and Chiquita in Costa Rica;
- Melon sector: *Costeña* and Chiquita in Costa Rica; *Agro-Exportadora Valle Verde* and Sun America Imports, *El Castaño* and Classic Fruits, and *Fruta Mundial* and Fresh Quest in Guatemala.

Strong efforts need to be made to raise awareness of the importance of labor standards compliance in these activities. Where compliance has been accomplished, especially improvements in Occupational Safety and Health, it often appears to be a by-product of other improvements, and not as a planned objective in its own right. But where better management practices are introduced, there appears to be a healthy complementarity between promoting compliance with labor standards in tandem with cleaner production that should be taken advantage of. There is also a growing awareness among environment, health, and other ministries that they need to be careful in awarding recognition, certifications, and prizes to producers who may not be in compliance with the law in other areas or turn out to have less than admirable practices in other aspects of their operations.

The Program will conclude and it seems only the part dedicated to Cleaner Production could be transferred to CCAD as an exit strategy. In the case of Best Agricultural and Fishing Practices, other specialized institutions or consultants are necessary to promote continuous improvement, as well as to develop financial mechanisms to ensure sustainability.

### (3) Vegetables (El Salvador and Guatemala)

The main environmental problems in the production of broccoli, okra, peas, onions, tomato and other vegetables point to uncontrolled use and storage of pesticides and limited safety practices during harvesting. The Program includes environmental and labor better safety practices implemented in pilot plots in close cooperation with buyers to ensure sustainable commercial alliances.

*Neolimentaria* is a processing plant buying broccoli from certified producers. The plant also has two certifications from the American Institute of Banking and Davis Fresh. *Neolimentaria* plans to continue training producers but expressed concern that after investing in the training, farmers sometimes decide to plant another crop.

As explained in the case of mahi-mahi, the Program contracted a Consultant to develop a financial model for the broccoli value chain that allows the consolidation and strengthening of the commercial alliance between local processor *Neolimentaria* and international broker Southern Specialties<sup>10</sup> for the implementation of best environmental practices.



Guatemalan Broccoli Fields.

R. Lizama, July 2011

<sup>10</sup>Company responsible for pioneering specialty fruits and vegetables from Central America. Southern Specialties is involved in growing, importing, processing, and marketing a wide range of fruits and vegetables from the United States, Central America, South America, Mexico and Canada. [www.southernspecialties.com](http://www.southernspecialties.com)

The model calls for the creation of a fund to be handled by an international NGO and a local one. The model is essentially that same as the Mahi-Mahi model: it is the local worker who will assume the investment of adopting better practices. Despite improvements and adoption of the Cleaner Production program at the processors' level, the market price is too inflexible and does not currently allow a return of investment.

WWF developed and implemented Better Agricultural Practices guidelines in El Salvador, where they conducted an analysis to establish a monitoring system of use and management of pesticides. Producers understand that BAP's implementation is a pre-requisite for the adoption of environmental standards.

The Program supported the supermarket association SUCAP in developing its voluntary environmental and labor standards. The pilot was implemented as a joint initiative with WWF and Millennium Challenge Corporation (MCC) financing the El Salvador Productive Development Program. This joint effort resulted in the selection of five demonstration cultivation plots for the application of Best Agricultural Practices trying to improve environmental and labor performance by producers supported by both the USAID and MCC funded Programs. The plots are located in Metapán, Chalatenango Bajo, Chalatenango Alto, Cabañas and Morazán and the scale up potential is huge, considering that more than 6,000 small farmers have access to those learning centers (pilot plots).

The commercial alliance in the broccoli chain in Guatemala started between the processor *Neolimentaria* and *Grupo Primavera*, comprising 96 broccoli producers. The alliance was expanded later to include the main buyer, Southern Specialties, taking advantage of the new fresh products market niche with modern packing methods. As ELE-Chemonics explained the situation, it was the first time that the whole cycle was identified: since the market opportunity identification, the preparation of the diagnostic, and the implementation of better practices and marginal costs associated to investment, as well as maintenance costs. The study of cost-benefit focused to the application of better practices and future maintenance. Despite improvements applied at plant level, there is still the concern to ensure compliance with labor and environmental standards along the whole chain.

Companies are promoting commercial relationships by means of a business-to-business approach. A model that ensures a respectful labor relationship would lower the vulnerability of the rank-and-file. The study on agricultural practices and inventory of agrochemicals prepared by LatCert, subcontracted by WWF<sup>11</sup>, and delivered in May 2010, shows that producers do not comply with the minimum wage and related labor standards.

The concept of "willingness to pay" or the willingness to invest in the adoption of environmental standards is an issue that requires attention. There are suppliers that are ready to work on change. However, there is a gap in defining the mechanism that can sustainably channel the funds from the consumer down to the suppliers. Future lines of funding should consider this need, while at the same time joining labor and environmental approaches along the complete value chain.

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<sup>11</sup> LATCERT, S.A, under contract dated January 2010 with WWF, "Informe de Diagnóstico de Prácticas Agrícolas e Inventario de Agroquímicos en el cultivo de brócoli -Grupo Primavera/Neo Alimentaria-".

#### **(4) Cattle Sector (Costa Rica and Nicaragua)**

The Program supported the development and adoption of the Sustainable Agriculture Network (SAN) Standard for Sustainable Cattle Production Systems in Costa Rica and Nicaragua. The subcontractor RA and SAN published the cattle standard in July 2010. It includes topics such as agro-forestry systems, integrated cattle management, sustainable pasture cultivation, animal well-being, infrastructure, and carbon footprint reduction. Auditors were trained to conduct pre-assessments of cattle ranches. Ranchers that adopt this standard and other agricultural standards may become eligible to be Rainforest Alliance Certified, based on environmental, social, and labor criteria. The Program also provided technical assistance tools and strengthening of market recognition. A market alliance with a regional buyer was the goal.

Rainforest Alliance's Senior Manager of the Coffee Program, Leaf Pedersen, stated that cattle standards are an emerging theme for the organization and that the standard for sustainable livestock was developed with input from 130 organizations in 34 countries, and is based on a voluntary certification system. He explained that the certification is awarded only to the production unit raising the animals; RA never certifies processors or shipping activities.

According to ELE-Chemonics, the second phase of the Program was planned to provide technical assistance to implement the standard and prepare cattle ranches for certification. Due to budgetary cuts, RA was not able to provide that assistance, but ranchers expressed their interest in continuing by their own means.

Another case is that of *Matadero Central, S. A.* (MACESA). This slaughterhouse won the National Cleaner Production Award two years ago and has implemented an improvement strategy in order to optimize resources. ELE-Chemonics provided them with a specialized assessment for the boilers and the company decided to invest US\$200,000 for the purchase of two new high energy efficiency boilers which will also support their plans for expansion. This new technology will result in less fuel consumption and less carbon dioxide generation, among other benefits. Today they have introduced several measures related to the insulation of pipes to decrease heat loss. To determine the full economic impact, they will need to wait until the second boiler arrives in September and begins functioning. MACESA expressed the need for continued technical assistance and follow-up to the initial assessment. They are interested for instance, in the recovery and use of methane gas.

Seeking to develop standards for sustainable cattle production as well as dairy production in free range ranching, Rainforest Alliance coordinated a public consultation process that made it possible for ranchers to agree on common principles. The Sustainable Cattle Standard went public on July 2010 and involved the training of auditors to perform pre-assessments that indicate to cattle ranchers where there are gaps to be addressed.

In Costa Rica the adoption of the Sustainable Cattle Standard went along with the implementation of Voluntary Agreements on Cleaner Production between CORFOGA, the association of Costa Rican cattle ranches, and the Ministry of Environment. CORFOGA is a key institution because it has permanence, as well as legal and economic support. With an established

institution like CORFOGA, it is possible to provide some sustainability to programs promoting good management practices and cleaner production.

CORFOGA is planning a second stage to implement Cleaner Production with the primary sector producers and include environmental protection and training on Occupational Safety and Health. They want to contribute to Costa Rica's national goal of being carbon neutral by 2021. They plan to increase silvopasture operations, return to living fences, and increase the use of foraging for feeding.

MACESA, the central slaughterhouse, also won a Cleaner Production award and is committed to implementing improvements with the goal of obtaining additional certifications. Unlike in Costa Rica, the Nicaraguan private sector associations do not appear to be prepared to invest resources in the adoption of environmental and labor standards under CAFTA-DR. In some cases, the business associations may be leery of cooperating with government institutions.

Nicaragua's Ministry of the Environment, MARENA, currently wants to proceed one step at a time, implementing what they call "a ladder approach." They have worked closely with USEPA on the problem of wastewater and with CCAD to strengthen the Cleaner Production Award System, but have not established any Voluntary Agreement to date.

As Leaf Pedersen, Senior Manager for the Sustainable Coffee Program for the Rainforest Alliance, pointed out, the certification processes exist because there is a gap of governance<sup>12</sup>. But efforts made by a part of the private sector with the coordination and support of public institutions would provide a living example and create greater awareness and understanding of the importance of adopting environmental and labor standards as a means to reach better performance, improve competitiveness and ensure sustainability.

### **(5) Sugar Cane (ES, GUA, NIC and DR)**

The Rainforest Alliance conducted pre-assessments of three sugarcane plantations in El Salvador (*Finca Astoria*, *Finca Santo Tomás*, and *Finca Las Pampas*) and three in Guatemala (*Finca Jumay*, *Finca Alamos-Limones*, and *Finca Oro Blanco*, S. A.). The pre-assessments were conducted between September and November 2010. Measured against Sustainable Agriculture Standard, the practices of most concern were identified as the use of fire for harvest preparation, as well as the use of highly toxic pesticides, poor or non-existent provisions for health and safety, and a lack of community relations programs.

According to Matthew Fischer-Daly, Senior Manager of SAI, from May 2007 to May 2011, SAI was dedicated to the sugar cane sector in the Dominican Republic at the request of the U.S. Department of Labor. During a three-month period in 2009-2010, SAI prepared a desktop study for ELE-Chemonics identifying obstacles that prevent the adoption of labor standards. SAI subsequently developed the implementation of labor issues for the ELE program in Costa Rica, concentrating on fruits (pineapple, melon and mango) and looking for commercial alliances with global buyers. From May 2011 to July 2011, SAI was asked by ELE-Chemonics to start an

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<sup>12</sup> "Governance" relates to consistent management, cohesive policies, guidance, processes and decision-rights for a given area of responsibility.

awareness-raising process for sugar cane processors and independent producers (*ingenious & colonos*) in the Dominican Republic.

In January 2011, Rainforest Alliance presented the final document *Local indicators for Sustainable Production of Sugarcane in Guatemala* to participating sugar producers and other relevant industry stakeholders in both Guatemala and El Salvador. The document describes indicators to measure performance in the process according to the environmental and social conditions so as to comply with the Sustainable Agriculture Standard.

As a subsequent effort to join forces and raise awareness of the importance of this initiative to comply with environmental, labor and social practices, as well as sustainable agricultural practices in the sugar sector, in April 2011, the Program collaborated with the Water and Development Alliance, WADA, which is USAID's innovative public-private partnership with Coca-Cola, to deliver the workshop "Successful experiences in sustainable investments in the sugar industry in Central America," presenting information on the advancement and successes in implementing best agricultural and labor practices in the sugar sector. SAI and RA were invited to present the Social Fingerprint, a program of ratings, training and tools designed to help companies measure and improve social performance, and workshop on topic "Meteorological Stations and Pest Management using Biological Control: a profitable focus to control pests and efficiency in water consumption," respectively.

What distinguishes SAI's intervention in the Program is its development of the concept of competitiveness based on social compliance in the Dominican Republic's sugar industry. SAI, along with its local partner, the Center for Research and Cultural Support (CIAC), worked during May, June and July of 2011 to train managers of the sugar mill *Ingenio El Porvenir* in applying a self-evaluation tool included in the *Social Foot Print*® toolbox to identify areas that need improvement for the adoption of labor standards. This tool allows the sugar industry to measure and improve their performance on social standards in a continuous manner and is useful in preparing for other certification arrangements. After presentation of their auto-evaluation tool, managers will design the corresponding action plan to implement improvements. The tool covers different areas: management systems, social compliance team, management of suppliers and subcontractors, participation of workers and communication, management and solution of complaints, external verification and involvement of interested parties, training, non-compliance level and type, and progress of corrective actions.



Both CIAC and SAI consider the Rainforest Alliance to be the natural partner to work with them on environmental standards, but they report that RA does not have the funding needed to participate in a joint effort in the sugar cane sector.

SAI is also promoting multi-stakeholders dialogues. Since August 2010, two major sugarcane companies (*Alcoholes Finos Dominicanos* and *Consorcio Azucarero de Empresas Industriales*, CAEI), along with representatives of the Labor Ministry, producers, and local NGOs (such as the *Centro de Investigación para la Acción Femenina* and *Pastoral Movilidad Humana*) are taking part in monthly Dialogue Roundtables. Their conversations mainly address the situation of

Haitian migrant workers, who make up 85% of workforce in the sugarcane industry, and how to improve their lives and provide them access to social security, education, and health care.

The *Alcoholes Finos Dominicanos* company (AFD) stated that they emphasized their social work for Haitian immigrant workers by preparing a study of “*bateys*” (compounds of houses inside the plantations) in order to identify their needs. The study indicated that there are 427 persons and all of them need access to medical services. The company established a medical clinic in San Pedro de Macoriz and is trying to help workers take a first step by legalizing their status in the country. AFD talked about the implementation of a school bus service for the children and a food program for the elder population (around 120 persons). Staff interviewed said that the company’s objective is to contribute to improving the living conditions of its workers.

AFD is also trying to help these undocumented workers take an important first step by legalizing their status in the country, which AFD is pursuing through talks with the government. Having legal status would make the workers eligible for social security.

AFD invited investors to take part in SAI workshops. Investors of the Beica Network were interested in supporting social programs and environmental and labor improvements. But it was not possible to train workers (*picadores*) because of the heavy load of work during the sugarcane harvest. *Colonos* (producers) have been trained in corporate social responsibility along the chain. SAI also trained labor inspectors and helped ADF in the implementation of a labor standards compliance monitoring system. In October 2010, AFD began implementing the labor standards tracking tool to monitor working conditions and labor relations with their suppliers.

AFD appears determined to earn certification from SAI, and eventually by ISO14000, among other certifications, in order to be eligible for European markets demanding organic sugar cane.

Perceptions of exploitation and mistreatment of Haitian sugar cane workers in the Dominican Republic constitute a highly sensitive issue, and those perceptions can reduce the industry’s competitiveness. The work coordinated by SAI may appear to be an isolated effort, but the Program has achieved some important breakthroughs, first and foremost of which is recognition and open discussion of the problem by all of those affected. A Dialogue Roundtable meets regularly and enables the company to link with governmental institutions and other organizations with significant experience with the issue, as well as with representatives of the workers. Together they are looking for solutions aimed, as the International Labor Organization (ILO) puts it, “at improving the rights, livelihoods, security, and opportunities of people, families and communities.”

To better understand the problem, it helps to listen to a sugar cane inspector working at another plantation. He said he has been living at the *batey* for more than 30 years, he works 12 hours a day, from 6am to 6pm, from Monday to Sunday, his salary is not paid in a timely and proper manner. He said that when this happens workers cannot pay the goods at the warehouse (meaning, the employer sells the goods and workers have to buy there), they get hungry, then sick. However, he said there is a medical clinic in San Pedro de Macoriz where the company takes them when needed, which represents an improvement. When asked about his children working at the plantation, he answered “I’ve been here all this time, so that my children can avoid this life”.

The Program's intervention in El Salvador and Guatemala called for the preparation and delivery of pre-assessment studies for a total of six farms. The pre-assessments, carried out in October-November 2010, reflect the areas that need improvement in order to bring the farms into compliance with environmental and labor standards. In January 2011, RA delivered its study on indicators for sustainable production, and in April 2011, a workshop was delivered to share successful experiences in implementing labor and environmental practices in the sugar cane industry. Selected producers and related relevant stakeholders seem to be in the phase of raising awareness. No concrete steps to implement the measures have been taken yet.

The ladder approach for companies interested in producing and marketing a differentiated product, necessarily means working towards earning certifications, and certification schemes ask for "Environmental, Labor and Social Compliance". Although we saw some initial steps, in general there is a lack of coordinated long-term initiatives treating both environmental and labor standards at the same time among public sector agencies (represented by the Ministries of Environment, Labor, Health, Economy and other related institutions), the private sector (business associations, companies), and civil society (workers associations, NGOs) in the region.

The absence of any planned coordination built into the implementation of the two dimensions of voluntary standards produces some important potential discrepancies in the five productive sectors selected by the Program, where a company that receives an award for its environmental work could at the same time have sub-standard labor practices, or vice-versa. But more and more companies are motivated to stay competitive and increase productivity through continuous improvement and have come to realize that instituting better environmental friendly practices and working conditions are critical step in this process.

Working to improve both environmental and labor standards requires more than a three year program, because the development of market chains and links between producers and buyers with fewer middlemen is a long and time-consuming process. The Program showed that working in the value chain often creates expectations, and interruptions in the flow of funds constitute a vulnerability for primary producers. Therefore, the Program's participants should be informed at the outset of the scope to be reached and ensure they work to achieve the necessary income and independence at the same time that they see an improvement in environmental and labor standards.

## 4.0 CONCLUSIONS

### 4.1 INSTITUTIONAL RELATIONSHIPS AND PROGRAM IMPLEMENTATION MECHANISMS

The Regional Environmental Program represents a considerable administrative challenge, working with dozens of lines of activity in six different countries, each with multiple stakeholders, and diverse implementing partners, contractors, and/or sub-contractors. There are inherent inefficiencies in taking on so many objectives at one time as the CAFTA-DR environmental program did, and the number of actors and projects at times have stretched the absorptive capacity of the beneficiary countries, in particular in the region's poorly funded and thinly staffed environmental ministries, who had a difficult time working with multiple implementers more or less simultaneously.

Fewer programs spread out over a longer period could perhaps have ameliorated this problem, but as one Honduran environment ministry official remarked--after telling us how difficult it was to keep up with all of the activities being implemented—each one of the environmental priorities set by his country were critical ones, and how could he justify postponing urgently needed assistance in order to make implementation easier for ministry employees?

#### **i. E-CAM – Bilateral USAID Mission Interaction**

USAID Bilateral Missions and E-CAM communication and coordination has been uneven, but is generally seen as having improved in recent months, in some cases as a result of a considerable investment of time and effort by the bilateral Mission, as well as by E-CAM. There are enough activities under the program that planned regional activities have not always been consulted or adequately communicated with the USAID bilateral mission in whose area they are to take place.

USAID Regional-Bilateral Coordination has worked very well in the Dominican Republic, and is perhaps a model of how that coordination would ideally function. Identifying common goals, the bilateral program works to complement the activities funded by the regional program, a sort of matching funds process where both programs get a bigger return on their investment. Ideally, the regional and bilateral missions would do their planning jointly. In some cases, overstretched staff in the bilateral offices impedes effective coordination; there simply isn't enough time in the day. In such cases, it might help to write in requirements for regular coordination into the contracts or agreements signed with regional and bilateral implementing organizations.

In Guatemala, the bilateral mission cited a few cases of regional USAID programs starting up work—without prior coordination—in the same areas where bilateral programs were being implemented. Their definition of the minimal criteria for a regional program seems logical enough: it should be truly regional in scope, supporting initiatives that at least two countries want and demonstrate they have the political will to implement, or it should focus on strengthening regional policies and institutions. Among areas for regional/bilateral coordination, strengthening of regional non-governmental organizations could be an important area of cooperation.

In Costa Rica, where there is no USAID Mission, the State Department managed Regional Environmental Hub staff described a “great” working relationship with E-CAM. In Nicaragua, we were told about past problems with inadequate prior consultation regarding E-CAM funded programs and events, but that situation appears to have been corrected and coordination is much better now.

In our meeting with USAID Honduras staff, we were told that overall, USAID’s regional programs complemented the bilateral ones well, and sometimes the regional programs filled a program gap that the bilateral mission could not fill. The areas where regional programs had been most effective, according to USAID Honduras staff, was in dealing with issues of CITES, wastewater, and customs, where it was important to have regional collaboration and harmonization of policies. Regional programs had also strengthened the interaction among the region’s environmental ministries. Coordination between E-CAM and the bilateral mission, we were told, could at times be better, and on occasion, the bilateral mission learned about a program event late in the game, but this was sometimes due to how busy the bilateral mission staff was, a situation similar to what was described to us in Guatemala.

## ii. CCAD as an Implementing Organization

We found the CAFTA-DR unit of CCAD to be an effective implementer, providing good quality products and programs, but necessarily has to operate within the context of CCAD’s larger institutional weaknesses. As a multi-lateral political institution, CCAD has more bureaucracy and needs to reach some level of consensus and rally political support before it can act. Over the last two years there has been no CCAD Executive Secretary, but several ministers remarked to us that when there had been a strong Executive Secretariat, things had not worked much better because the Secretariat assumed policy and decision making functions that did not properly belong to it.



Its existence as a political and bureaucratic institution also gives it the inherent advantage of enjoying political support and buy-in for its activities. CCAD offers an institutional platform and continuity, backed by the ministers of environment. Furthermore, having a CCAD liaison or detailed to the national ministry and physically resident there also allows for close coordination, monitoring, and follow-up on program activities, such as the Voluntary Agreements between national Cleaner Production Centers and business associations or individual companies. How effective that coordination is varies from country to country, and whether the Administrative-Technical representative Point of Contact is a facilitator or gate keeper of course depends considerably on the individual in the position and her or his relationship with the ministry’s technical staff, USAID’s Regional and Bilateral programs, and the implementing partners.

CCAD’s CAFTA-DR unit has also cooperated with and implemented bilateral USAID environmental programs, therefore effectively supplementing or leveraging the regional programs. In the case of the Environmental Protection Program in the Dominican Republic, CCAD collaborated with The Nature Conservancy on developing a system for environmental audits, a diploma course on Cleaner Production, and Dominican participation in the Regional Cleaner Production Award. In Guatemala, CCAD, ABT Associates, and ELE worked together

to develop a national Cleaner Production Award, and CCAD and ABT both supported efforts to establish national solid waste regulations.

CCAD is the central regional institution for achieving economic growth with environmental protection in Central America. USAID assistance can help strengthen it as an institution. We consider CCAD to be a necessary and valuable partner for working to strengthen the ministries of environment in the CAFTA-DR countries.

### **iii. ELE-Chemonics as an Implementing Organization.**

ELE-Chemonics was able to deploy high-qualified technical expertise and work closely with the private sector, and was generally able to deliver products in a timely and effective manner. As with any organization working under a fixed-term contract, their ability to monitor and follow up on program implementation is necessarily very limited. In a few cases, such as the Dominican Republic, Costa Rica, and Nicaragua, environment ministry officials commented that ELE-Chemonics, at least initially, did not consult or coordinate their project activities with them and in some cases did not adequately monitor or follow up on projects. In all three countries, we were told that communication and coordination with ELE had subsequently improved. In general, the participants and beneficiaries of programs implemented under ELE expressed considerable satisfaction with their quality and usefulness. ELE-Chemonics provided excellent support to USEPA, enabling them to move much faster in the implementation phase of the regional wastewater regulatory model (post 2005) as well as other technical areas.

In a number of instances where CCAD and ELE-Chemonics coordinated their efforts, their relative strengths complemented each other nicely, and the results were quite effective. ELE was an effective USAID partner and supported the other implementers with capacity building of the Ministries and other local institutions. This was the case, for example, in the work of both organizations with USEPA in building regional capacity for investigating and prosecuting environmental crimes, in developing model wastewater regulations, and in several collaborative or complementary efforts in support of Cleaner Production.

### **iv. USEPA as an Implementing Partner.**



Both USAID E-CAM and USEPA officials described the initial working relationship between the two agencies as challenging, in part due to the cumbersome U.S. government procedures involved in transferring funds allocated to one U.S. agency to another, as well as different institutional cultures and personalities, and a planning process that covered too short a span (one year) given the amount of time (close to a year) that it took to get funding out to the field. The *Midterm Assessment of the Program to Support Environmental Compliance under CAFTA-DR* prepared by Nathan Associates Inc. in

September 2008 notes that EPA disbursements are “miniscule in relation to its obligated funds and a very high pipeline.” These and other factors meant that the EPA portion of the program was slow to start.

By the time we began our assessment, however, the overall satisfaction with USEPA's work in the CAFTA-DR region was very high. Interviewees cited the professionalism of the USEPA teams, their outstanding technical qualifications, and the collaborative approach they took to working with their regional counterparts and the implementing agencies. Local cooperating organizations appreciated USEPA's consultative approach. EPA, in turn (at least as far as the wastewater program was concerned), helped ensure that their program achieved results by insisting that counterparts be fully committed and come to the table with the authority to take decisions.

EPA's work in the end has proved to be highly effective, and very much appreciated by the participating countries. USEPA said that good coordination, communication and participation with USEPA by USAID, CCAD, the Cleaner Production Centers, and the local U.S. Embassy greatly assisted EPA personnel in building relationships and funding for projects.

#### v. **NASA as an Implementing Partner**

As an implementing partner, NASA has had a relatively limited presence on the ground, but has provided indispensable technological capability and scientific support in creating and sustaining SERVIR, the regional program that combines satellite and ground-based data with forecast models to monitor and forecast environmental changes and improve response to natural disasters. The program helps in the management of resources and improved (better informed) decision making. It has already helped countries in dealing with dozens of natural disasters and extreme events, and could potentially help save thousands of lives. The partnership with USAID has been successful enough that SERVIR hubs have been established in Kenya and Nepal.



For being such a valuable tool, however, SERVIR appears to be underutilized and underappreciated in its current form. A number of government officials in ministries of the environment, meteorological services, and civil defense in turn and to varying degrees seemed unfamiliar with what SERVIR had to offer, had no communication with CATHALAC, complained about it turning around and charging for national data that had been provided for free, and said they had no say in how the program was managed, even though it was supposed to be a regional program

## **4.2 INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING**

**Capacity to perform EIAs.** In general, the Program has been very successful in strengthening the offices that manage Environmental Impact Assessments, giving them the tools and training to make the process more efficient and transparent, and as a result provide better service to the public along with better care for the environment. As noted in the report, some countries have advanced further than others in improving their capacity in the EIA process and being ready to manage it on their own from here on out. Continued technical assistance and further training

from USEPA would help to ensure that these achievements are consolidated and fully sustainable in each of the CAFTA-DR countries.

The EIA administrative tracking systems need to be made fully functional and the staffs that operate them fully trained. Because the courses were designed to train people as trainers in EIA procedures, the CAFTA-DR countries now have a pool of qualified trainers in EIA concepts and procedures, and it is possible that some of that continued technical assistance can now be provided by experts within the CAFTA-DR neighborhood. Finally, taking the Dominican Republic's lead and allowing public access and monitoring of the system throughout the region would considerably enhance transparency in the EIA process.

**Capacity to perform Wastewater Analysis.** It is clear, too, that the Program has markedly strengthened national and regional capacities for wastewater analysis as well as helping establish wastewater standards in important sectors of the region's economy (slaughterhouses, dairy farms, pig farms, hotels, textiles, and coffee plantations) significantly raising the standards of at least five laboratories in the CAFTA-DR countries (four national reference laboratories and one regional reference laboratory). Although national reference labs in the Dominican Republic and Honduras have still to be designated, it is reasonable to assume that the rigorous process of qualifying has in itself raised laboratory standards in those two countries as well.

**Capacity to enforce Environmental Laws.** To varying degrees, the administration of justice and the regulatory framework in the field of environmental law has improved throughout the region, thanks to the courses and workshops, legal compendiums and manuals, and the adoption of model regulations and laws governing wastewater, solid waste, and hazardous waste treatment under the Program. Prosecutors are better prepared to prosecute and judges to adjudicate cases against polluters. According to USAID figures (USAID Regional Environmental Program: *El Comercio en Favor del Ambiente*), over 13,000 people had been trained in law enforcement and the administration of justice in environmental law, and more than 60 policies, laws, and regulations have been improved.

**Capacity to teach Environmental Law.** We found it encouraging that some universities and law schools in the region (Costa Rica and Nicaragua were the two countries we learned about during our visits) have incorporated or are planning to incorporate into their curriculums variations of the environmental law courses. ELE also reports in its Quarterly Report for April-June 2011 that the environmental criminal law course initially offered in the first quarter of 2011 has been replicated by three academic institutions (Guatemala, the Dominican Republic, and Nicaragua). This adoption of the courses is a healthy indication of the likely sustainability of the educational effort in environmental law.

**Capacity to Promote Cleaner Production.** As indicated in the findings and noted under section 4.4, Science and Technology, the Program has successfully institutional capacity in the CAFTA-DR countries to promote cleaner production and environmental management systems, including important support to Cleaner Production Centers in Nicaragua, Honduras, El Salvador and analogous organizations at the University of Costa Rica and the environmental business association RENAEP in the Dominican Republic. The Program has been particularly effective in establishing and strengthening inter-institutional links between businesses, public institutions, and universities to promote the adoption of cleaner production technologies. Because the

Cleaner Production Centers are established institutions that interact with government, private sector, and academic community on an ongoing basis, strengthened capacity here should continue to pay dividends well after the life of the program.

### 4.3 IMPACT OF ENVIRONMENTAL PROGRAMS ON THE PUBLIC

Although the CAFTA-DR environmental program, at five years, is young to expect it to have had major regional environmental impacts, some positive initial impact on the lives of the people living in Central America and the DR are beginning to emerge.

**Better Response to Disasters.** SERVIR data have made a positive impact in thousands of lives by allowing governments to better respond to and in some cases predict natural disasters. CATHALAC Director Emilio Sempris notes a few examples: SERVIR was “able to provide multiple governments across the region with information on the areas impacted by various disasters, such as in the case of the catastrophic November 2009 flooding and landslides in El Salvador, and the impacts of Tropical Storm Agatha in Guatemala in May 2010.”

**Benefits to Small-Business Owners.** Small and some medium businesses—small hotels, cattle and pig farmers, tire and battery recycling operations among a number of others--have benefited from the highly positive impact that the Cleaner Production and Environmental Management System programs have had on their operations and immediate environment. In many cases, these companies’ employees as well as neighbors have benefited in the process. Small businesses have been able to cut their costs, and in the process many of them appear to have become enthusiastic converts to the concept of continuous improvement across the board, including improved safety and labor standards, and better corporate citizenship. The potential positive impact on people’s lives is considerable, if more resources for promoting Cleaner Production and EMS were available.

**Better Air Quality and Environmental Health.** The emissions inventories and air quality monitoring systems have a tremendous *potential* impact in reducing the health consequences (e.g., respiratory diseases) of air pollution in the region’s urban environments. Further along, the work to improve wastewater analysis and regulations, as well as the support for improving solid and hazardous waste disposal will directly benefit many of the region’s inhabitants. Also of significant potential impact are the Pollutant Release and Transfer Registers (PRTRs), which should contribute to greater transparency and a citizenry that is better informed about the environmental health hazards in their neighborhoods and other areas of their countries.

**Workers’ Rights.** Social Accountability International’s work to promote improved labor standards and a multiparty dialogue involving migrant workers in the sugar cane industry in the Dominican Republic, is starting to show some results and is promising in its potential impact if it can be continued, but it is too early to measure that impact.

**Regional Cooperation.** As noted earlier, an interesting and positive dynamic has grown out of the very processes by which some of the Program’s activities have been implemented—for instance the development of legal compendiums and manuals. On a national scale, those processes have developed positive relations that cross traditional professional lines, and regionally, they have fostered greater communication and collaboration, and a better developed sense of regional identity, than existed previously. This process has already changed some lives,

and over time, has the potential to positively affect important segments of professional society across the region.

#### 4.4 USE OF SCIENCE AND TECHNOLOGY

The application of science and technology in the CAFTA-DR countries is the principal means by which they will be able to combine economic growth with the protection of their natural environments. We found that the Program has achieved significant results in assisting the CAFTA-DR countries to apply science and technology for: (1) cleaner production and environmental management systems; (2) adaptive management of renewable natural resources, especially water, fish and forests; (3) preparation for natural disasters; and (4) improved internal and regional communication for planning, monitoring, and implementing environmental activities. By achieving these results, the USAID regional office has gained invaluable experience in how to assist the CAFTA-DR countries to design and implement programs that involve the sharing and use of science and technology.

##### Cleaner Production and Environmental Management Systems

Numerous businesses in the CAFTA-DR countries have received Program assistance in adopting cleaner production practices and environmental management systems. The AZUNOSA sugarcane processing plant in Honduras has reduced its cost of energy by insulating the pipes that transport the hot water it uses to make sugar. The *Arbol de Fuego* hotel in El Salvador returned to profitability by replacing high with low energy light bulbs and reducing water consumption. EZ Home, which recycles used tires, and *Acumuladores Iberia*, which recycles lead from batteries, both in Guatemala, are profitable companies that prevent waste materials from contaminating the environment. A hog farm in Costa Rica is using methane from manure to reduce its energy costs and to prevent water contamination. The environmental management system implemented by the FERQUIDO fertilizer company in the Dominican Republic has almost eliminated its need to discard unused chemicals, thereby increasing its profit margin, reducing contamination and satisfying its clients. Melon and pineapple growers are using agro-climatological monitoring stations to collect data (precipitation, leaf and soil humidity, etc.) that help farmers practice precision agriculture and reduce the use of pesticides and herbicides and water consumption.



Picture provided by *Acumuladores Iberia*

These examples indicate how the Program has promoted the application of science and technology in ways that have permitted businesses to improve their profitability while also protecting the environment.

## **Adaptive Management of Renewable Natural Resources**

The Program has fostered the use in the CAFTA-DR countries of science and technology for adaptive management of renewable natural resources. A scientific study of the size of Mahi-mahi fish caught off the Pacific coasts of Costa Rica and Nicaragua, for example, permitted an accurate calculation of the costs and benefits to fishermen of using circular instead of J-shaped fishing hooks. Wastewater testing laboratories are now providing reliable scientific data by which to measure the effectiveness of the countries' wastewater treatment plants. Field instruments are transmitting weather data continuously from agricultural fields in Guatemala and Honduras to computers at the Honduran Center for Agricultural Research (FHIA) to provide the scientific basis for applying precisely the correct amount of irrigation water, fertilizers and pesticides to crops. The USEPA has provided computer models which permit the city of San Jose, Costa Rica to analyze the data provided by its air quality monitors in order to plan its programs to control air pollution. Science and technology provide the basis for managing rather than merely exploiting natural resources. In forestry, for example, so little is known about the silvics and silviculture of even the world's most valuable tree, mahogany, that it cannot yet be harvested with confidence in obtaining adequate natural regeneration. Likewise, little is known about the life cycle of commercially valuable animal species, such as the mahi-mahi fish, wild orchids, or reefs. To achieve the adaptive management of natural resources such as these requires the application of science and technology. .

### **Preparation for Natural Disasters**

Although not a large component of the Program, the assistance it has given to improving the CAFTA-DR countries' ability to prepare for natural disasters may perhaps be its most cost-effective use of resources, since it has the potential to help to save thousands of human lives in the event of a disaster. Through the SERVIR project, NASA is sharing satellite imagery and data with CAFTA-DR countries that permits their institutions to prepare adequately for the arrival of tropical storms and hurricanes that can cause floods and landslides that threaten human lives. The forestry services of Guatemala, Nicaragua, and the Dominican Republic are using data provided by SERVIR to predict the location and severity of forest fires and thus permit them to plan for their control. These examples indicate that the assistance the Program has given the CAFTA-DR countries in the use of science and technology has helped them to increase their capability to prepare for natural disasters.

### **Improved Internal and Regional Communication**

The Program has used science and technology to improve communications within and between CAFTA-DR countries with regard to environmental issues. The NEPAAssist geographic information system (GIS) that was given by the USEPA to the ministries of environment in the CAFTA-DR countries, for example, permits the preparation of higher-quality environmental impact assessments. Computerized administrative tracking systems have accelerated the processing of environmental documentation by the ministries of environment, thereby increasing their public approval and reducing their costs. Regionally, BORSICCA uses on-line computer technology to facilitate in-expensive trading in recyclable solid waste. Virtual meetings between environmental officials of the CAFTA-DR countries have increased consultations and reduced costs. Improvements in communication technology have proven to be a relatively inexpensive

way to achieve substantial improvements in coordination between the institutions of different countries and to improve administrative processes related to environmental issues within national and local government institutions.

### **Institutional Capacity to Apply Continuously Evolving Science and Technology**

The Program has assisted the CAFTA-DR countries to use science and technology in four areas to combine economic growth with environmental protection. However, the application of science and technology for this purpose will never reach an end point. Rather, the application of science and technology is a permanent process that must respond rapidly and flexibly to specific needs. Consequently, the CAFTA-DR countries should not have to depend on short-term injections of technical assistance to foster their use of science and technology to combine economic growth with environmental protection. Their own institutional capacity must be developed so that it can provide the requisite science and technology.

The Program has strengthened the institutional capacity of the CAFTA-DR countries to use science and technology to combine economic growth with environmental protection. Its support for the NASA SERVIR project has greatly facilitated the availability of satellite data and imagery to CATHALAC and national institutions and has improved their ability to use the data and imagery for analysis and decision-making related to environmental issues. The Program has supported clean production centers in Nicaragua, Honduras, El Salvador and has helped establish links between the University of Costa Rica and the Dominican Republic, the DR's environmental business association RENAEP, and the ministries of environment.

The training and technical assistance activities have strengthened the science and technology capabilities of numerous universities and helped them to incorporate instruction in cleaner production practices and environmental management systems into their curriculums. The Program has been particularly effective in establishing and strengthening inter-institutional links between businesses, public institutions and universities that will foster the use of science and technology for cleaner production and environmental management systems. Its technical assistance and training has strengthened private, for-profit businesses by training them to record data accurately and then use it to improve their production processes. By supporting the improvement of numerous wastewater testing laboratories, the Program has strengthened their institutional capacity to use science and technology.

The Program, however, has had limited financing over a short time period and when it ends, in September 2012, the CAFTA-DR countries' institutional capacity for incorporating science and technology into productive processes together with environmental protection will remain incipient. In the private sector, the Program has been able to provide technical assistance and training to a relatively small number of businesses and in only a few economic sectors. Many more businesses in a wider variety of sectors in the CAFTA-DR countries could also achieve similar types of financial and environmental benefits if they were to receive technical assistance and training. Probably most businesses in the CAFTA-DR countries are still unaware of the benefits of cleaner production and environmental management systems. Others, although aware of their benefits, lack sufficient funds to finance the technical assistance, training and equipment required to implement them.

In the public sector, at the national level, the ministries with responsibility for planning, environmental protection, agriculture, fisheries and forestry production, and water and soils need to incorporate science and technology into their daily operations. At the regional and local level, departmental and municipal governments also could better use science and technology in their activities that affect natural resources.

#### **4.5 LINKS BETWEEN ENVIRONMENTAL AND LABOR STANDARDS**

The ELE Program dedicated efforts to improve environmental laws and regulations, although both CCAD and ELE-Chemonics stated that work on the legal framework for labor did not fall into their scope of work. As per the companies selected by the Program, they said their relationship is with the producers and claimed no relationship with the people doing the physical labor: fishermen, peasants, workers. This appears to occur despite the adoption of voluntary environmental and labor standards and compliance with different certifications which prohibit relationships arrangements that avoid labor and social security obligations

The Program's participating companies are eager to explain their achievements in reducing energy and water costs, but less willing to talk about improvements in the workplace. The program as it has been implemented to date does not have information regarding the treatment of minority workers, women and indigenous peoples

Under this umbrella, CCAD and ELE-Chemonics participate in the ELE Program and both agree that as a result of implemented activities related to Environmental Management Systems (EMS) and Cleaner Production Plans (CPP), the participating companies consistently reported their interest to adopt -and in some cases already successful adoption of- Occupational Safety and Health (OSH) standards. Both implementers admit their work was not about labor standards, because results came as a consequence of implementing measures to fill gaps to become a suitable producer for regional and international buyers.

This means that working towards certification, and acquiring it, pushes the company to comply with labor and environmental standards as a way to enjoy benefits -starting with costs reductions, recognition of their efforts to prevent environmental pollution when being awarded a prize, positioning of their products, and their contribution to expand environmental awareness among the workforce, their families and communities. This Assessment discovered:

- Companies do understand the importance of implementation of EMS and CPP to become a suitable producer for regional and international buyers.
- Companies are motivated to take step by step measures for continuous improvement and after seeing positive results at plant level they are aware of the need to implement the Integrated Management System, which comprises ISO standards on quality (ISO9000), management (ISO14000), and OSH (OHSAS18000).

The activities of the Program related to reach voluntary labor and environmental certifications, aimed at reducing costs, increase economic benefits and increase number of workers benefitting from improved working conditions. Again, both implementers stated their work was not about

Labor Standards, yet there has been progress in labor compliance in all CAFTA-DR countries. The concept is widely adopted in a win-win approach that describes the strategy as being good for the business, for the environment, and for the people.

And it is reflected in the link agreed by certification schemes which developed their norms based on nine pillars integrating ISO Systems and the International Labor Organization (ILO) Conventions as displayed in Exhibit 5:

#### **Exhibit 5. Compliance Norms Based on 9 Pillars**

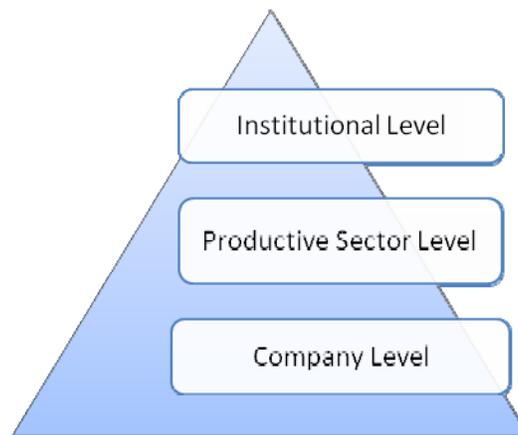
<b>Pillar</b>	<b>Description</b>
<b>Child Labor</b>	Child labor shall not be used.
<b>Forced Labor</b>	People have the right to change jobs and shall not be forced to work.
<b>Health and Safety</b>	People must not be endangered at work.
<b>Freedom of Association</b>	People have the right to organize and be heard at work through collective bargaining.
<b>Non-Discrimination</b>	Hiring, promotions, and wages must be equal and fair.
<b>Disciplinary Practices</b>	People must not be abused at work and must be free from all corporal punishment.
<b>Working Hours</b>	Overtime is limited, voluntary, and paid at a premium.
<b>Remuneration</b>	People must earn enough to live on during a regular work week.
<b>Management System</b>	A management system is the key to managing ongoing compliance, including requirements for a worker representative.

**Institutional Framework for Long Lasting Implementation.** Throughout the life of the Program, implementers have shown their strengths in dealing with different sectors:

- CCAD has an institutional platform, supported by the Ministers of Environment of Central America and the Dominican Republic that enables them to reach the goal of Voluntary Agreements between the public and private sector. The added value lies in their ability to monitor and follow-up.
- ELE-Chemonics has the knowledge and experience to serve as an effective interlocutor and partner with the private sector. At the same time, their extensive consultants' data base enables them to deliver products in a timely and effective manner. Their participation is frequently limited to providing deliverables, with relatively little monitoring and follow-up.

It is also important to highlight the impact on sustainability of the Cleaner Production Program throughout the six CAFTA-DR countries. The detected performance shows three operational levels that need to be considered, from top to the base as presented in *Exhibit 6*:

- Institutional level: CCAD promoted Voluntary Agreements between the National Cleaner Production Centers and the Ministries of Environment. Example: El Salvador.
- Productive sector level: CCAD focused efforts to reach productive sectors organized in associations to ensure a broader participation. Example: CORFOGA, the cattle ranchers association, in Costa Rica, and the association of dairy producers and the poultry producers association in El Salvador.
- Company level: ELE-Chemonics used expert consultants to provide tailored analyses company by company for the adoption of Best Agricultural and Fishing Practices. CCAD assisted with the adoption of Cleaner Production technologies and practices through the Cleaner Production Centers and international consultants. Example: ELE-Chemonics' intervention with *Neoaimentaria*, broccoli processor and *Acumuladores Iberia* in Guatemala, lead recycling company, with follow-up by the Guatemala Center for Cleaner Production



**Exhibit 6. Operational Levels of Cleaner Production**

**Continuity:** In order to ensure achievement of positive impacts, it would be useful if CCAD were able to take on some of the issues that will still need to be addressed after the ELE program ends, funding permitting.

**Ladder approach & certification schemes:** Identify certification achievement steps for producers; and refine and validate Best Management Practices (BMP) to comply with environmental and labor standards that are recognized in the market for independent certifications framework, for example, through the tracking systems and the pest management model in melon and pineapple using agro-climatological stations;

**Financial model:** Finalize the business models to present better mechanisms to incorporate the cost and benefits of the environmental standards application in the current financial statements;

**Coordination with other initiatives:** Coordinate efforts with other U.S. Agencies dedicated to the labor issue, as well as with other donors, working specifically on Occupational Safety and Health standards in the region.

## 5.0 RECOMMENDATIONS

### 5.1 LESSONS LEARNED

#### i. Successes

A number of participants commented that in the Program, process often has been as important as product. A process such as compiling legal compendiums or preparing model wastewater regulations required people and institutions to work together to achieve a common goal and establish collaborative relationships across sectors in a country or across international borders. The processes created strong and productive ties that had not existed previously and appear to have a good chance of lasting, thereby contributing to solving other environmental problems

The efforts to establish cleaner production and environmental management systems have had considerable success, albeit on a relatively small scale compared to the number of businesses that could apply them. Sustained support from the Program and the cooperation of government agencies, especially when the work was carried out in cooperation with sector-wide associations, strengthened the capabilities of cleaner production centers. More accessible financing for smaller producers will be important to see cleaner production achieve success on a larger scale. National governments in the CAFTA-DR association could add an additional stimulus by adopting procurement practices that benefit companies using cleaner production technologies.

The Program provided particularly useful assistance to the centers for cleaner production, universities, and associations of business sectors in building their institutional capacity. These institutions are permanent and therefore can continue to provide technical assistance and training in cleaner production and environmental management systems after USAID support for such technical assistance and training ends. By contrast, when the Program provided technical assistance and training through consulting firms to specific companies, relatively little institutional strengthening occurred, although the benefits for the company itself were often important. The cleaner production processes and environmental management systems introduced into one company were less likely to spread to other companies, notwithstanding some positive demonstration effect.

For the Program to make a significant improvement in the environmental performance of the private sector in the CAFTA-DR countries, it needs to continue over at least several more years, expand into new sectors and new geographic areas within the countries and become well-established institutionally, both within each CAFTA-DR country and as a regional program.

#### ii. Challenges

As noted previously, the Regional Environmental Program represented a considerable administrative challenge due to the complexity of implementing dozens of lines of activity in six different countries, working with multiple stakeholders, and a number of different implementing partners, contractors, and/or sub-contractors, as well as five different bilateral USAID missions with their own programs. There are inherent inefficiencies in taking on so many objectives at

one time as the CAFTA-DR environmental program did, and the number of actors and projects at times have stretched the absorptive capacity of the beneficiary countries, in particular in the region's poorly funded and thinly staffed environmental ministries, who had a difficult time working with multiple implementers more or less simultaneously.

We heard similar views expressed by some of USAID's implementing partners. One noted "the finite capacity" for environmental ministry staff to absorb foreign assistance and commented that the atomization of program activities (both national and regional) affects the results; it would be more effective put greater focus on fewer themes. Another said that there were too many strategic objectives and a tendency to prioritize activities rather than results.

Experienced implementers also described some of the challenges involved in working with national government institutions: duplication of duties and responsibilities was common in a number of the region's government institutions on one hand. On the other, that national environmental strategy is segmented among multiple institutions that do not always communicate with each other. Implementers also noted that turnover rates were high in CAFTA-DR government institutions, which can create gaps in institutional memory, especially when a new administration comes into power. Several noted that political considerations and policies affecting programs are subject to frequent change, and an implementing organization (and we would infer a donor agency as well), needs to have contingency plans and be flexible in order to adapt to the changes.

The Regional Environmental Program got off to a slow start, with initial funding in Fiscal Year 2006 delayed. We found that process by which U.S. development funds are appropriated and allocated was not clearly understood by many of the beneficiary governments. We noted considerable frustration at the delays associated with the process, especially in the early years of the Program. The staff of the ministries of environment in several countries said they had the impression that the priorities for funding of CAFTA-DR have been driven by USAID rather than the recipient countries. USAID notes, however, that regional priorities were agreed upon by all of the CAFTA-DR countries and established in the trade agreement's Annex 17.9 and its corresponding workplan for 2005.

The staff of the ministries of environment also frequently expressed to us their concern that too much of the funding from CAFTA-DR had been used to finance the overhead expenses of contractors, sub-contractors, and consultants. While these comments may have some merit, it should be noted that the Program had only one contractor for three of the six years of the Program, who was generally deemed to be effective and efficient in delivering products and outputs. The majority of implementation was mobilized through other mechanisms including one Cooperative Agreement (with CCAD) and two inter-agency cooperation agreements (PASAs).

The CAFTA-DR countries and the Regional Environmental Program face a number of challenges looking forward. One major challenge, of course, is the expected termination of the Program in 2012, raising the question of how to sustain the most important of the initiatives the programs has launched and consolidate progress achieved. Future sources of funding will be needed, whether additional U.S. government allocations in different categories, other bilateral

donors, multilateral development institutions, or in-house resources of the CAFTA-DR countries themselves.

Another major challenge is Central America's high level of vulnerability to the effects of global climate change and extreme weather. As Salvadoran Environmental Minister Herman Rosa Chavez observed, El Salvador used to have an "Extreme Event" (which is specifically defined) on average once every ten years during the 60s, 70s, and 80s. In the 1990's, they had four events. And in the 2000s, it has been eight events. This vulnerability reinforces the need to adequately fund environmental programs that can help the region mitigate and adapt the effects of global climate change, which have the potential to seriously disrupt and set back development goals in each of the CAFTA-DR countries.

SERVIR is a valuable product that is helping the CAFTA-DR countries respond more effectively to natural disasters, but it could be made more useful still if it were more accessible and user-friendly. In most of the countries we visited, government officials as well as scientists and academics did not feel like they were stakeholders in SERVIR nor did they have much say over the services it provided. In many cases, it was viewed as a commercial enterprise rather than a regional organization being run for the public benefit. USAID may want to consider alternative models for structuring SERVIR, including decentralizing its management, perhaps in a form analogous to a distributed hub, and giving greater ownership and turning more management responsibilities over to the participating countries.

Work on improving the Environmental Impact Assessment process in the region is one of the Program's success stories, but that does not mean that the job is done. In general, public participation needs to be incorporated into the EIA process more effectively and efficiently, which in some cases will require modifications to the laws and regulations governing the EIA process.

Despite significant improvements, the EIA process in many cases remains overwhelmed with paperwork because of laws and regulations requiring an EIA for every proposed activity in the public and private sectors, no matter how small. A solution would be to reduce the work load by not requiring EIAs for every proposed activity, but doing so would evidently require a change in the law or the regulations governing the EIA process in most of the region.

## **5.2 RECOMMENDATIONS FOR FUTURE INVESTMENTS**

**Recommendation No. 1: Find resources that can maintain some level of USEPA assistance in the region should be a high priority.**

EPA's work has proved highly effective, and very much appreciated by the participating countries. Finding resources that can maintain some level of EPA assistance in the region should be a high priority. EPA specialists provide highly valued service and technical expertise, a very collaborative and effective approach/methodology, and, as several members of the EPA team told us, they gain valuable experience that can be applied to their own work in the U.S. EPA, at least its Region IV, now has sufficient experience and good ties in the region that it would not need an intermediary organization to help with implementation.

Salvadoran Environment Minister Herman Rosa commented that there would be considerable value in having USG technical experts (in particular but not exclusively from USEPA) detailed for extended periods—perhaps months—to environment ministries in the region as advisors. It would be difficult for any U.S. government agency to lose a member of its staff for an extended period, but if the opportunity were to arise for such a detail assignment, or even an exchange of personnel, the benefits from such an exchange of knowledge and experience would be considerable.

While EPA may not be able to keep a permanent presence in the region, it is imperative that upper management at the CAFTA-DR environmental government institutions continue to support the drafting, implementing and enforcing of environmental laws and regulations. A constant regional institutional presence like CCAD can minimize the loss of institutional knowledge and commitment during transitional periods of old and new administrations. CCAD can also play a critical role, as it has already done, in supporting U.S. agencies (such as USEPA) who are implementing future programs in the region.

**Recommendation No. 2: Strengthen the environmental impact assessment process further.**

In general, the Program has been very successful in strengthening the offices that manage Environmental Impact Assessments, but continued technical assistance and further training from USEPA would help to ensure that these achievements are consolidated and fully sustainable in each of the CAFTA-DR countries. The EIA tracking systems need to be made fully functional and the staffs that operate them fully trained. Because the courses were designed to train people as trainers in EIA procedures, the CAFTA-DR countries now have a pool of qualified trainers in EIA concepts and procedures, and it is possible that that some of that continued technical assistance can now be provided by “in-house” experts within the region. But funding is a critical issue in the region’s ministries of the environment. There is a real risk that the ministries will be left without the technical assistance needed to fully establish the improved EIA processes.

**Recommendation No. 3: Strengthen the institutions that can best promote cleaner production.**

Cleaner Production and Environmental Management Systems are another area that are likely to yield significant results with sustained support, especially if that support can be provided through institutional structures such as the Centers for Cleaner Production, universities, and business associations, who are more likely to reach a wider pool of businesses and be more sustainable. Further developing mechanisms for smaller businesses to finance investments in cleaner technology would contribute substantially to the program’s growth and impact.

For the Program to make a significant improvement in the environmental performance of the private sector in the CAFTA-DR countries, it needs to continue over at least several more years, expand into new sectors and new geographic areas within the countries and become well-established institutionally, both within each CAFTA-DR country and as a regional program.

**Recommendation No. 4: Add a public education component to future environmental programs.**

In most of the CAFTA-DR region, awareness of environmental problems and the consequences of ignoring them are weak, as is the market for “green” products that can give further stimulus to cleaner production. In Guatemala, then Environmental Minister Ferreté listed the need to change attitudes and behaviors, especially among the young, as one of his top priorities—but his ministry did not have enough funding to even make a dent in the problem. Ministry officials as well as business and NGO representatives spoke about the need for a cultural change to make the populace more aware of the importance of their natural environment, especially when it was so important to a critical part of the economy, the tourism industry.

**Recommendation No. 5: Consider restructuring SERVIR and how its services are managed.**

As noted above, SERVIR provides a valuable service, but its services are not as widely accessible or as user friendly as they could be. USAID may want to consider alternative models for structuring SERVIR and how it manages access to its data, including decentralizing its management, perhaps along the lines of a distributed hub. Stakeholder countries should have greater ownership and a greater say in how this important regional resource and public service is managed.

**Recommendation No. 6: Continue to assist CAFTA-DR countries in drafting, implementing, and enforcing environmental laws and regulations.**

CAFTA-DR requires the countries to implement environmental laws and regulations effectively, and improving the environmental laws and regulations and their enforcement has been a principal activity under the CAFTA-DR Program, with good results to date. The task, however, will be far from completed by the time the Program ends. The CAFTA-DR countries may find it difficult to continue that process of legal and regulatory reform as well as vigorous enforcement on their own. If they do not, businesses can be subjects of law suits by their competitors or by NGOs, which would affect economic growth: CAFTA-DR is now a force that can drive compliance with environmental laws and regulations. Every effort should be made, within existing and potential future funding, to sustain the working relationship established between the countries and EPA which will guarantee the continuity of this effort of drafting, implementing and enforcing environmental laws and regulations.

**Recommendation 7: Seek climate change and/or Feed the Future funding for applicable activities and programs**

With *Adaptation*, *Clean Energy*, and *Sustainable Landscapes* servicing as the pillars of USAID climate change policy, the USAID CAFTA-DR environmental programs have relevance and many linkages to the Agency’s overarching climate change initiative. Based on USAID’s GCC Indicator Handbook, tangible opportunities for the CAFTA-DR Program to link with the Agency strategy include supporting national governments in:

- Developing, testing, and adopting climate mitigation and/or adaptation tools, technologies and methodologies;
- Using climate information in their decision-making;
- Developing climate resilient or low emissions development plans (or implementing such a plan if the government has already developed one);
- Improving capacity to address climate change issues; and
- Establishing institutions to address climate change issues.

SERVIR and other regional geospatial data could and already is serving as a tool to help decision-makers at all levels of society understand how climate change may affect livelihoods. The Cleaner Energy pillar closely aligns with aspects of the Cleaner Production Program as it promotes (1) energy efficiency; (2) low-carbon energy; (3) clean transport; and (4) energy sector reforms, and could be used to scale up the Cleaner Production Program.

Any extension of CAFTA-DR environmental programming should aim to incorporate the threats and effects of climate change into environmental decision-making in all the countries, such as incorporating climate change as a consideration when conducting environmental impact assessment. Key to justifying continued support for many of the typically labeled “brown” issues that CAFTA-DR environmental programs have been addressing will be to understand the complexity of **climate resilience**. With the anticipation of a higher frequency of extreme weather events in the future due to climate change, governments on all scales must improve urban management, infrastructure, and the systems that deliver and maintain clean water, air and waste disposal services. Climate Change Adaptation, at its heart, builds on many of the principles of sound economic development that practitioners have been employing for years. It is also an issue that is a high priority for the region’s ministers of the environment.

With Feed the Future focusing primarily on food security through increased nutrition and agricultural productivity, the most applicable tool includes applying the use of technology such as geographical information data for the purposes of precision agriculture.

## ANNEX A: LIST OF INDIVIDUALS INTERVIEWED

No.	Institution	Contact
<b>El Salvador</b>		
1	CCAD CAFTA-DR Unit	Ricardo Aguilar, Chief of Party
2		Gabriela Córdoba
3		Sandra Flores
4		Gandhi Montoya
5		Judith Panameño,
6		Carolina Zúñiga
7	Chemonics-ELE	Magdalena de Aguilar, Wastewater and Laboratories Specialist
8		Héctor Andrews, Operations Manager
9		Marcelo Heymans, M&E Specialist
10		Walter Jokisch, EIA Activities Coordinator
11		Carlos Morales, Chief of Party
12		Claudia Panto, Deputy Chief of Party
13		Carolina Sánchez, Environmental Law Specialist
14		Lorena Sánchez, Communications Coordinator
15	Salvador Vega Prado, Cleaner Production Specialist	
16	USAID El Salvador	Rubén Alemán, COTR
17		Orlando Altamirano, Regional Environment Specialist
18		Karen Azucena,
19		Paul Schmidtke, Mission Environment Officer
20		Michelle Jennings, EG Office Director
21		Alejandro Maceda, Project Manager
22		Thomas McAndrews, Economic Growth Deputy Director
23		Gabriela Montenegro
24		Ivan Seassal, Project Management Specialist
25		Gerardo Tablas, Senior Public-Private Alliance Advisor
26	Sophie Taintor	
27	Asociación de Pequeños Hoteles de El Salvador	Cecilia Vega, President
28	Cleaner Production Center	Yolanda de Tobar, Executive Director
29	Hotel Arbol de Fuego	Carolina Baiza, Owner
30	ILO Expert	Dr. Carlos Rodríguez, Occupational Safety

No.	Institution	Contact
		and Health Specialist
31	ITCA / FEPADE	Mario Cartagena, Electrical Engineering Director
32		Ricardo Salvador Cuadrón
33	Laboratorio ANDA	Douglas García, Director
34	Ministry of Environment and Natural Resources	Salvador Nieto, Point of Contact CCAD
35		Herman Rosa Chávez, Minister
36		Hernán Romero, Environment Management Directorate
37		Manlia Romero, Directora General de Gobernanza Ambiental y Patrimonio Natural
38	NASA/SERVIR	Francisco Delgado
39		Dan Irwin, SERVIR Director
40	PACT	Ana María de Díaz, Monitoring & Evaluation Officer
41		Sandra Dueñas-Paschall, Program Director
<b>Guatemala</b>		
42	EPA (phone interviews)	Orlando González, International Environmental Program Specialist
43		Cheryl Wasserman, Associate Director for Policy Analysis.
44	USAID Guatemala	Rick Garland, EG Director
45		Teresa Robles, Mission Environmental Officer
46	USAID LAC	Anne Dix
47	Acumuladores	Helen Contreras, Environmental Manager
48	IBERIA	Luis Marroquín, Plant and Environmental Manager
49	Alcaldía de Panajachel	Gerardo Higueros, Mayor
50	ASOVERAPAZ	Lesbia Mus, President
51	CEADEL Center for Studies and Support to Local Development	Gabriel Zelada, Director
52	Centro Guatemalteco Producción + Limpia	Andrés Chicol, Technical Coordinator
53		Luis Muñoz
54		Karen Rosales, Projects Coordinator
55	CEPRENAC Coordination Center for the Prevention of Natural Disasters in Central America	Carlos Alfredo Puac, Technical-Scientific Manager
56		Víctor Ramírez, Coordinator for Institutional Strengthening
57		Jessica Solano, Technical Manager
58	CONAP National Council for Protected Areas	Juan Pablo Noriega
59		Kenser Rosales

No.	Institution	Contact
60	COVERCO - Commission	Augusto Aceytuno, Senior Social Auditor
61	for the Verification of Corporate Codes of Conduct	Homero Fuentes, Coordinator
62	Defensores de la Naturaleza	Oscar Manuel Núñez Saravia
63	EZ Home	Fernando García
64	FEDEPMA	Erwin Barrios
65	Fiscalía General de Medio Ambiente	Noel López, Enviromental Prosecutor
66	FUNDAECO	Karen Aguilar
67		Vinicio Cerezo
68	Hotel Dos Mundos	José Matzar, Manager
69	Hotel Jardines del Lago	Rafael Ralón, Owner and Manager
70	Hotel Posada de Don Rodrigo	Yolanda de Castillo, Manager
71	Hotel Porta Lago	Julio Canajá, Maintenance Manager
72		Roberto Quenán, Manager
73	MARN Ministry of Environment and Natural Resources	Carlos Acosta, Environmental Audits Unit (EAU)
74		Yvonne Aguilar, USAID/CCAD Program Assistant
75		Miguel Castillo, EAU, Legal Advisor
76		Dr. Eugenia Castro, General Director for Environmental and Natural Resources Management
77		José Miguel Del Valle, EAU, Environmental Audits
78		Dr. Luis Ferraté, Minister
79		María García, EAU, Environmental Audits Advisor
80		Auner González, Policy Directorate
81		Arnoldo Gramajo, Policy Directorate
82		José Guzmán, Environmental Audits Unit
83		Adolfo Macario
84		Nadia Mijangos, Coordinadora Unidad Cuencas y Recursos Hidricos
85		Justa de Money, Multi-Culture Unit
86		Carlos Noriega, CCAD Point of Contact
87		José Antonio Ordóñez Toledo, Legal Compliance West Regional Rep
88		Dr. Beatriz de Pacheco, Legal Compliance General Director

No.	Institution	Contact
89		José Robledo, Legal Compliance Caribbean Regional Rep
90		Edwin Tobar
91		Francisco Zurita, Coordinator for Decentralization Unit
92	Montesol	Raúl Soto, Environmental Manager
93	Neoalimentaria	Juan Miguel Urruela, CEO and General Manager
94	Oxlajuj Aj Pop	Felipe Gómez
95	Panajachel Territorial Committee	Francois Collinot, Representative of Hotels
96		Amílcar Mordas, Representative of INGUAT
97	Rainforest Alliance	José Carrera
98		Giuseppe Dalbosco
99	Specialists for Environmental Studies	Jorge Cabrera
100		Rafael Guillén
101	USAC University of San Carlos de Guatemala	Liselli Pérez, Cleaner Production and EM Systems
102		Norma Sarmientos, Cleaner Production and EM Systems
103	WWF	Andreas Lehnhoff
104	World Wildlife Fund	María Amalia Porta
<b>Dominican Republic</b>		
105	USAID Dominican Republic	Duty Greene, Economic Policy Advisor
106		Odalis Pérez, Mission Environmental Officer and AOTR Environmental Protection / Sustainable Tourism Programs
107	Alcoholes Finos Dominicanos	Ana María Leonardi, wife of General Manager
108		Lin Muta, Industrial Safety
109		Carlos Navas, Quality Control and Environment
110		Leonel Valera, Assistant to Agriculture Manager
111		Rose Mary Valera, Human Resources
112		Iraida Velasco, Social Program
113	Cervecería Nacional Dominicana	Elvin De Peña, Coordinador de Gestión Ambiental and student of CP
114	CIAC Center for Cultural Research and Action	Nicomedes Castro, President
115		David Figueroa, former Technical Coordinator of CULTIVAR Program and current coordinator of ELE Program
116	FERQUIDO	Henry Monsanto, General Manager
117	INTEC Instituto Tecnológico	José Contreras Pérez, Gerente, Centro de Gestión Ambiental CEGA-INTEC
118	Dominicano	Elías Gómez, student of Cleaner Production

No.	Institution	Contact
119		Fernando López, student of Cleaner Production
120		Rosaura Pimentel, Coordinator Clean Production, Centro de Gestión Ambiental CEGA-INTEC
121		Juan Sánchez, student of Cleaner Production
122		Dr. José Rafael Alonte, Decentralization Vice Minister and Professor at the UASD University
123		Lina Beriguet, Director of Environmental Evaluation
124		Marisol Castillo, Director of the Legal Area
125		Benjamín Céspedes, Ventanilla Unica
126		Patricio Devres, Indicators National System
127		Sr. Patricio Devres, Sistema Nacional de Indicadores
128		Cayetano Germosén
129		Lourdes Gerónimo
130	State Secretary of Environment and Natural Resources	Silmer González Ruiz, Director of Environmental Regulations and Research
131		Elizabeth Jiménez, Technician of the Cleaner Production Program
132		Altagracia Moquete, Director of the Ventanilla Unica
133		Zacarías Navarro, Responsible for the Cleaner Production Program
134		Rosa Haydée Otero Nieves, Director of Trade and Environment
135		Mariana Pérez, Environmental Information
136		José Andrés Rodríguez, Environmental Quality Specialist
137		Rafael Rosado, Director of Environmental Management
138		Olga Rosario, Director
139		Paulino Santana, Ventanilla Unica
140	ONAMET Meteorology National Office	Bolívar Ledesma, Responsible for the Department of General Meteorology
141	Procuraduría de Medio Ambiente	Andrés Chalas, Environmental Prosecutor
142	Pro - Natura	Francisco Arnemann, Executive Director
143		Maximino Herrera Ramírez, Manager of the Environmental Protection Program

No.	Institution	Contact
144	RENAEPA National	Roberto Herrera
145	Business Support Network for Environmental Protection	María Alicia Urbaneja, Executive Director
146	SAI	Matthew Fischer-Daly, Senior Manager
147	UASD	Alberto Lorenzo, Chemistry Faculty
148	Universidad Autónoma de Santo Domingo	Luis Mejía, Director of Cleaner Production
<b>Costa Rica</b>		
149	US Embassy - Environmental Hub	Maricela Muñoz, Regional Environmental Specialist
150	Rainforest Alliance	Leif Pedersen, Senior Manager Sustainable Coffee Program
151	WWF	Oscar Cerdos, Observer By Catch WWF
152	World Wildlife Fund	Alvaro Segura, Coordinator By Catch WWF
153	Agrícola Del Valle	Luis Diego Murillo, General Manager
154	Centro Nacional de Información Geo Ambiental	Alvaro Aguilar, Director
155	CERHIMA	Luciano Machado, Consultant
156		Alexander Sánchez, Owner
157	Consultant	Juan Pablo Büchert
158	CORFOGA Cattle Corporation	Marco Antonio Fallas, Environmental Manager
159		Enaldo Miranda, President
160	DIGECA	Katia Aguilar
161	Environmental Quality Management (MINAET)	María Guzmán, Director
162		José Fabio Jolón
163	FLOREX	Silvia Cháves, General Manager
164	FRUMAR, S. A.	James Arias, President
165		Diana Guerra, Vet Regent
166		Patricia Campos, Focal Point CAFTA-DR
167		Teófilo De La Torre, Minister
168	MINAET	Angela González Grau, Technical Administrative Coordinator, CCAD
169	Ministry of Environment, Energy and Telecommunications	Ana Luisa Leiva, Legal Office
170		Lorena Polanco, Director
171		Laura Sequeira, Chemonics Coordinator
172		Eugenio Androvetto, Unidad de Normalización
173	Ministry of Health	Andrés Incer Arias, Unidad de Normalización
174	Directorate of Strategic Planning and Evaluation of Health Actions	José Calderón
175		Olga Segura Cárdenas, Geografía Física y Epidemiología
176		Luis Carlos Fallas, Planificación y Evaluación
177		Elizabeth González

No.	Institution	Contact
178		Marco Tulio Lobo
179		Juan Carlos Oreamuno, Unidad de Normalización
180		Federico Paredes
181	COMEX - Ministry of Foreign Commerce	Alejandra Aguilar, Focal Point DR-CAFTA Commerce
182	Prosecutors Office	Luis Diego Hernández, Environmental Prosecutor
183		Sergio Valdelomar, Environmental Prosecutor
184	SETENA National Technical Environmental Secretariat	Esaú Cháves, Technical Director
185		Oscar Gamboa
186		Uriel Juárez, Secretary General
187		Germán Pochet, Chemonics
188		Víctor Villalobos, ASA Director
189	TAA Tribunal Ambiental Administrativo	Adriana Bejarano
189		José Lino Cháves López, Judge and TAA President
191		Yamilette Mata Dobles (Judge and TAA Vice President)
192		Gabriela Nájera, Bio-Technician
193		Jackeline Rivera
194		Juan Sánchez
195	UCR University of Costa Rica	Yamileth Astorga, Integrated Environmental Management Program PROGAI
196		Wilson Beita, Regional Reference Laboratory
197		Elizabeth Carazo, Regional Reference Laboratory
198		Ana Gabriela
199		Gloria Meléndez, Vice Rectoría de Investigación
200		Bernardo Mora, Consultant
201		Darner Mora, Director of the AyA (Acueductos y Alcantarillados)
202	UNA Universidad Nacional	Marvin Carvajal, Director Escuela Judicial
203		Francia León, Encargado de Proyectos
204		José Félix Rojas, Encargado de Proyecto
<b>Nicaragua</b>		
205	USAID Nicaragua	Meléndez, Mission Environmental Officer
206	EXPOMAR	Abraham Castillo, Collection Center EXPOMAR
207		Velkyss Gadea, Consultant Flora y Fauna Internacional (FFI)
208		Eloy León Dobles, President EXPOMAR
209		Harry Rodríguez, Captain and member of the Cooperativa

No.	Institution	Contact
210		José Mercedes Sánchez, Captain and President of the Cooperativa
211		Santiago Sánchez, Fisherman
212		María Luisa Velásquez Castillo, Traceability Consultant, Chemonics
213	MACESA Matadero Central, S. A.	Nicolle Aufret, Technical Manager
214		Juan Sebastián Chamorro, General Manager
215		Ramiro Lau, Executive Director
216		José Luis Vivas, Refrigeration Manager and former FOMILENIO staff
217	MARENA Ministry of Environment and Natural Resources	Érika Avilés, Responsable de Proyecto de Construcción de Indicadores de Cumplimiento Ambiental
218		René Castellon, Focal Point for Environmental Cooperation CAFTA-DR
219		Gabriela Córdoba, CCAD
220		Hilda Espinoza Urbina, General Director Environmental Quality - DGCA
221		Indiana Fuentes, Coordinator of the Unit of Legal Advisory
222		Tania Urbina, Focal Point CCAD
223		Ana Cecilia Vega, Chemonics
224		Anthony Palma, Consultor del Sistema Nacional de Información Ambiental SINIA
225		Mario Rodríguez, Delegado de MARENA-Rivas
226		Martha Sánchez, Consultora del Sistema Nacional de Información Ambiental SINIA
227	Ministry of Foreign Affairs	Ligia Andrea Abdalah, General Directorate for North America
228	Ministerio Público – Unit Crimes Against Environment	Frank Flores, Prosecutor
229		Rubén Gutiérrez, Director
230	PRODEMPSA	Francisco Borge, General Manager
231	UNAM – Universidad Nac. Autónoma de Managua	Víctor Manuel Martínez, Quality Control
232		Salvador Montenegro, Director Centro de Investigaciones de Recursos Acuáticos - CIRA
233		Katherine Vammen, Deputy Director
234	UNI – Universidad Nacional de Ingeniería	César Barahona, Director Center Cleaner Production
235		Julieta Montoya, Consultant
236	UNICA - Catholic University of Nicaragua	Reynaldo Murillo, Prof. Legal Faculty

No.	Institution	Contact
237	Wal-Mart Central America –	Ramona Medina, Risks Manager
238	Division Integrated Meats ICI	Eliézer Narváez, Environment Manager
239	WWF	Alejandro Cotto, Coordinator
240	World Wildlife Fund	Gerald Pérez, Observer
<b>Honduras</b>		
241	USAID Honduras	Eduardo Chirinos, EG Deputy Director
242		Peter Hearne, Natural Resources and Disaster Preparedness Specialist, Office of Economic Growth
243		Anaís Henríquez
244		Gracia María Lanza Castillo, Project Management Specialist, EG
245	Chemonics	Ana Carolina Paz, National Coordinator
246	USEPA Environmental Protection Agency	Rolando Bascumbe, EPA-Region 4, Atlanta
247		Francisco Cruz, EPA-Region 3, Philadelphia
248		Héctor M. Danois, Enforcement and Compliance
249		María Labrador, EPA-Region 4 on detail to the Department of Environmental Protection Agency in Orlando, FL
250		Marilyn Maycock, Quality Assurance Section Chief/Microbiologist EPA Region IV
251		Antonio Quiñones, Deputy Director
252	AZUNOSA	Daniel Guillén
253	Azucarera del Norte	Manfredo Humberto Hernández Fiallos
254	CESCCO Laboratory Centro de Estudios y Control de Contaminantes	Dr. Víctor Meléndez, Director
255		Aracely Membreño
256		Dra. Alma Nájera, Subdirector
257		Ana Ramírez, Environmental Analyst
258		Dra. Anabela Rodríguez, Responsible for the RETC Component
259		Joseline Ruda, Assistant to Focal Point
260		Dra. Indira Sierra, Responsible for Mercury in Hospitals Component
261		Dra. Yaris Zavala, Responsible for Air Quality Component
262		Cleaner Production Center San Pedro Sula, Honduras
263		Claudia Díaz Yánez, Technical Subdirector
264		Diana E. Vargas, Responsible of Projects
265	DECA Environmental Evaluation & Control	Julio Eguigure, Director

No.	Institution	Contact
266	FHIA – Honduran Foundation for Agriculture Research	José Vásquez, General Director of WWF Honduras
267	Hotel Casa del Árbol San Pedro Sula	Donaldo Suazo, Owner
268	Procuraduría General del Ambiente y los Recursos Naturales	Gilberto Ochoa Vásquez, Environmental Prosecutor
269	SERNA – DGA Environmental Management Directorate of the Natural Resources Secretariat	César Flores, Responsible for Clean Production (CP)
270		Rodrigo Lezama, Sistema Nacional de Información Ambiental (SINIA) – Unidad de Planeación y Evaluación de la Gestión (UPEG)
271		Kessel Rosales, Director
272		Karen Sierra, CAFTA-DR Focal Point
273		Carlos Thompson, Director UPEG
<b>United States</b>		
274	US State Department	Aaron Spencer

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# **ANNEX C: SCOPE OF WORK**

## **AN ASSESSMENT OF THE PROGRAM TO SUPPORT ENVIRONMENTAL AND LABOR COMPLIANCE UNDER CAFTA-DR**

### **C.1 INTRODUCTION**

The United States Agency for International Development's Regional Program for Central America and Mexico (USAID/E-CAM) will award a twelve week Task Order under the "Prosperity, Livelihoods and Conserving Ecosystems (PLACE) IQC" for the assessment of the program described herein.

### **C.2. OBJECTIVES**

As signatories to the Central America-Dominican Republic-United States Free Trade Agreement (CAFTA-DR), participating countries are required to improve and effectively enforce their existing environmental and labor laws. To benefit fully from CAFTA-DR, participating countries need to address basic requirements outlined in the environment and labor chapters of CAFTA DR and the underlying environmental and labor issues surrounding the free trade agreement (FTA).

This assessment will focus on to what extent USAID-managed environmental and labor cooperation programs have helped countries build capacity to comply with the environmental and labor provisions of CAFTA and more importantly, how the impacts of USAID assistance have helped improve the lives of people in the region translated into better wastewater management, increased air quality monitoring, better solid waste management, improved private sector environmental performance, informed decision making and improved enforcement and compliance.

Additionally, as output from this assessment the contractor will provide a series of informational products, which identify successes in catalyzing environment and labor change in the region i.e. packaging results. These informational products should include mixed media as well as a variety of printed products, which target public, government, and technical audiences and tell the USAID story. The products could include: brochures, power point presentations, one-pager success stories, pictures with captions, YouTube segments and other internet website postings (i.e. America.gov, CCAD servers).

The offeror should suggest other media outlets and products that will demonstrate USAID's role in supporting CAFTA-DR country successes that focus on human interest and meaningful outcomes for everyday people. The products and outreach materials should cover the periods of USAID CAFTA-DR programming from inception to the end of the scheduled program period, 2006-2012. In other words, USAID would like the products to project impacts and results expected to be accomplished until the end of the program period. The Contractor will not be expected to develop projections of such project impacts results, but rather projections would be provided by USAID and/or its implementing partners.

The contractor must follow the Agency's graphic standards, as found in [www.usaid.gov/branding](http://www.usaid.gov/branding) and in the Automated Directives System ADS chapter 320 "Branding & Marking". This includes color palettes as displayed in the USAID Graphic Standard manual that can be found in the following address: <http://www.usaid.gov/branding/gsm.html>. Moreover, the contractor must coordinate all communication materials with the COTR and the COTR and the Mission's Development Outreach and Communication Officer (DOC).

### C.3 SUMMARY OF USAID CAFTA-DR ENVIRONMENTAL AND LABOR

#### COOPERATION PROGRAM

##### A. CAFTA-DR Environment Program Overview

USAID is carrying out CAFTA-DR environmental cooperation activities in four areas: institutional strengthening for the effective implementation and enforcement of environmental laws, biodiversity conservation, market-based conservation and improved private sector environmental performance. The following is a brief overview of the four environmental cooperation program areas and activities currently being undertaken by USAID and its partners.

###### *A). Institutional strengthening for the effective implementation and enforcement of Environmental laws*

USAID/El Salvador, Central America and Mexico Regional Environment Program (E-CAM), in partnership with USAID Central American Bilateral Missions (Dominican Republic, Guatemala, Honduras, Nicaragua, and El Salvador) and with implementing partners, the Central American Commission for Environmental and Development (CCAD), U.S. Environmental Protection Agency (USEPA), Environment and Labor Excellence Program for CAFTA-DR (ELE) and U.S. National Aeronautics and Space Administration (NASA), are working to strengthen environmental management systems in the region and improve access to environmental information.

The program is designed to improve environmental laws, policies, regulations and procedures related to environmental protection, wastewater, solid waste, chemical safety, and air quality management, as well as to clean production practices. The program also aims to strengthen capacities of the countries to meet environmental obligations of the CAFTA-DR by providing training and workshops to government officials, private sector and NGO representatives from environment, agriculture, health, academic and industrial sectors on the effective application of and compliance with environmental legislation. USAID technical assistance is also directed at improving environmental inspection and criminal enforcement techniques and environmental impact assessment preparation and evaluation, creating a regional system of environmental compliance indicators and a system to register and certify environmental service providers, and adopting and using cleaner production and voluntary agreements. USAID is also helping to strengthen university environmental law curricula through the development of U.S. university partnerships

USAID has supported the operation of the Secretariat for Environmental Matters (SAA), hosted by the Secretariat for Economic Integration of Central America (SIECA), which was created to

accept submissions concerning failures to effectively enforce environmental laws, as required in Chapter 17 of CAFTA-DR. USAID is also helping countries improve their environmental complaints processes and increase access to environmental information, public participation, and outreach. Working with CCAD, USAID has established four of six environment documentation and information centers, in El Salvador, Guatemala, Honduras, and Nicaragua. In collaboration with CCAD and NASA, USAID is also helping to strengthening national and the regional environmental information networks (SIAM) and their integration with the Mesoamerican Regional Visualization and Monitoring System (SERVIR).

### *B). Biodiversity conservation*

USAID's bilateral and regional Natural Resources and Biodiversity program seeks to strengthen the capacity of the countries to meet environmental conservation obligations under CAFTA-DR and improve compliance with Multilateral Environmental Agreements, including the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), the Montreal Protocol, and the Ramsar convention on wetlands. The U.S. Forest Service together with USAID/Honduras and USAID/Nicaragua are working to strengthen forestry management and stem the tide of illegal logging of Mahogany and other species. USAID bilateral missions, US Forest Service, USFS, US Department of the Interior, DOI, and CCAD at the regional level are also providing capacity building to government officials, customs officials, police, and prosecutors on the enforcement of natural resource management and conservation laws, including CITES. The USAID E-CAM program, through CCAD, has supported the design and publication of harmonized operational handbooks to improve CITES enforcement, with a particular emphasis on wildlife trade permitting system. USAID E-CAM and its partners are also providing regional training to governmental officers on biodiversity vulnerability due to climate change and the use of climate monitoring tools. The U.S. Department of Interior, TRAFFIC, and Humane Society International (HSI) support additional activities under this program with CAFTA-DR funds managed by State/OES, which are also providing technical assistance and support to CITES authorities, law enforcement officials, rescue centers and other key stakeholders.

Under a mechanism with USAID, NOAA is working to improve fisheries regulation, management, and enforcement in the region in collaboration with the Organization of Fishing and Aquaculture in Central America, OSPESCA, that is part of the Central American Integration System (SICA). NOAA is also working to protect endangered marine sea turtles through improved use of Turtle Excluder Devices and reduced turtle by-catch in CAFTA-DR Countries. In addition, USAID/EGAT is in the process of launching a new Global Development Alliance to work with private sector buyers and the World Wildlife Fund to stem illegal and undersized fishing of spiny lobster in Honduras and Nicaragua. The initiative will utilize market forces to promote shared responsibility for management between private sector players and government and increase economic benefits and incentives for fisheries compliance

### *C). Market-based conservation*

USAID bilateral missions and E-CAM are also promoting biological conservation and improved natural resource management and habitat conservation through the adoption of sustainable tourism practices and payment for environmental services. USAID and its partners are providing

technical assistance to Protected Area and Private Nature Reserve managers to access tourism markets and helping CAFTA-DR governments remove barriers that keep funds from reaching protected areas. USAID is also promoting the placement of appropriate economic values on the conservation and management of natural resources and providing training to local communities on natural and cultural resource tourism, marketing to international tourists, and to hotel staff and transportation providers in best environmental practices. In addition, USAID is also providing market intelligence, specialized technical assistance to meet market demands and vocational training to increase incomes through trade opportunities in sustainable agriculture and forestry products while conserving biodiversity.

At the regional level, E-CAM is working in two trans-boundary watersheds of critical biodiversity importance: 1) Cahuita-La Amistad-Rio Canas-Bocas del Toro on the Costa Rica-Panama border, and 2) Gulf of Honduras in Honduras, Guatemala, Belize and Mexico. This effort will help adopt and implement sustainable management plans in 425,000 hectares of biological significance in coordination with host and local governments and provide small grants to civil society organizations to promote gender equity and community participation in solving environmental problems in these watersheds.

#### D). Improved private sector environmental performance

USAID bilateral missions and E-CAM, together with CCAD, EPA and ELE, are working to improve the private sector's environmental performance and competitiveness by providing flexible incentives and technical assistance for them to adopt cleaner production technologies and best practices. USAID is providing technical assistance to governments and the private sector to help promote compliance with environmental laws and implement policies to provide incentives for voluntary environmental auditing, and private sector adoption of performance and compliance-focused environmental management systems. In addition, USAID is working with the Central American cleaner production centers to promote the adoption of cleaner production best practices, promote the adoption of cleaner production and energy policies and incentives, and increase access to clean production financing. CCAD recently completed a regional energy efficiency policy and is working to establish the legal framework in each CAFTA-DR country to allow governments to enter into public-private partnerships to facilitate the transfer and adoption of cleaner production technologies and promote a climate of environmental stewardship.

#### B. CAFTA-DR Labor Program Overview

In April 2005, the Inter-American Development Bank prepared a "White Paper" of the CAFTA-DR Ministries of Trade and Labor identifying gaps in labor compliance. A year later E-CAM completed an assessment of the state of labor justice in the region that included interviews with court officials and administrators, judicial school staff and university professors and administrators, Labor Ministries, industry associations, labor unions, human rights organizations and independent labor experts in all six CAFTA-DR countries. Both documents serve as the road map for the U.S. Government's CAFTA-DR labor capacity building assistance, which is being provided through the U.S. Department of Labor (USDOL), U.S. Department of State Bureau of Democracy, Human Rights, and Labor (State/DRL), and USAID/E-CAM. Based on the White Paper and labor justice assessment, the CAFTA-DR labor program is centered on three key areas: (1) strengthening the labor justice system, by improving the efficiency and transparency of

labor justice's administration, training public defenders and legal assistance providers, combating gender and other forms of discrimination in the judicial system, promoting civil society engagement with the judiciary through grants to civil society, enhancing professional standards for labor justice practitioners and training on interest-based bargaining techniques; (2) supporting labor ministry modernization; and (3) promoting public-private alliances to improve labor standards.

USAID has promoted the establishment of market-based alliances with international and regional buyers in order to adopt environmental and labor standards in their supply chains, which were extended to key producers and processors of fruit, vegetables and other agricultural commodities. The alliances place priority on those producers that meet these requirements and that adopt better productive practices, raise the quality of products and assure a smaller environmental impact during their production.

#### C.4 BACKGROUND DOCUMENTS

After the task-order is signed, the Contractor will be provided with the following documents:

- CAFTA-DR Chapter 17
- CAFTA-DR Labor Chapter 16
- Summary of Achievements through FY 09
- Draft of proposed results by 2010
- Summary of Performance Indicators (PMP)
- List of key contacts to be interviewed: including USG officials, host country counterparts, implementing partners and other stakeholders
- Contractor/grantee semi-annual reports and evaluations (if any)
- Technical videos and Impact Stories Videos.

The contractor will also be expected to obtain additional information.

#### C.5 TASKS

The consulting team will develop a full cadre of information and outreach products in a multi-media format designed to visually capture successes and impacts in an innovative format and for a variety of audiences to include: public, government partners, and technical audiences besides conducting the assessment. This consultant team will carry out the following tasks up to twelve weeks:

1. Finalize a detailed work plan and schedule for carrying out this scope of work, which shall include visits to Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua.
2. Review existing literature on the progress and impact of USAID supported initiatives in environmental and labor programs and select outstanding examples of success and impact which highlight a human interest component or which can capture an easy to understand benefit that is long lasting and deep rooted for a person, company, community, government agency, or country level impact.(in English and in Spanish)
3. Interview key USG officials, implementing partners, host country counterparts in each of

the CAFTA-DR countries, including environmental prosecutors, other donors and other key stakeholders as needed, involved with the CAFTA-DR environmental and labor, cooperation programs and other stakeholders that can provide an insight into USAID program impacts.

4. Prepare an attractive presentation of multi-media outreach materials and products that are visually appealing, easy to understand format, and which may include catchy titles, photos, graphics, clip art, etc.
5. Draft and finalize outreach materials and products for copy editing, designing, and printing.
6. Deliver twenty five copies in English and twenty five in Spanish of the outreach materials and products (hard copy and electronic copy PDF format) to the COTR in USAID El Salvador.
7. Prepare the assessment report.

## C.6 METHODOLOGY AND DELIVERABLES

The assessment team should consider a range of possible methods and approaches for collecting and analyzing the information, which is required to carry out the assessment. Data collection methodologies will be discussed with and concurred by USAID/E-CAM at the start of the assessment. They shall use participatory methods and activities that will enhance collaboration and dialogue among counterparts, particularly partners. For instance, the assessment team should consider meeting and getting feedback from the potential counterparts and stakeholders: NASA, ELE, EPA, CCAD, PACT, MSD, SRA, and USAID bilateral missions. The E-CAM team will organize all internal USAID meetings and will arrange for initial meetings with appropriate stakeholders and partners at the outset of the process. When appropriate, members of the Economic Growth team may participate in meetings with relevant stakeholders and partners. A general list of relevant stakeholders and key partners is provided above and other could be provided during the first visit of the assessment team to El Salvador. Nonetheless, the assessment team will be responsible for expanding this list as appropriate and arranging all meetings and appointments needed to complete the required work.

### A. Document Review

- USAID/ES will provide the assessment team with key documents prior to the start of the in country work. All team members will review these documents in preparation for the initial in El Salvador team planning meeting in El Salvador.
- Prior to conducting fieldwork, the assessment team will review existing literature and data, including the documents provided by USAID.

### B. Team Planning and Debriefing Meetings

A half-day team-planning meeting will be held in El Salvador before the assessment. This meeting will allow the Team to clarify the purpose, expectations, and agenda of the assignment.

In addition, the team will:

- present an outline and explanation of the proposed assessment/design, discussing the work plan to carry out this scope of work

- clarify team members' roles and responsibilities,
- review and finalize the assessment timeline,
- develop and or discuss data collection methods, instruments, tools and guidelines,
- review and clarify any logistical and administrative procedures for the assignment,
- develop a preliminary draft outline of the team's report, and
- assign drafting responsibilities for the final report.

Final Assessment debrief – The team will debrief with USAID and stakeholders as appropriate prior to submission of the draft report and the team's departure from country. During the last week of the assignment, the contractor will provide an exit conference to include a summary of findings, conclusions, and recommendations in a PowerPoint presentation to Mission Management. Comments generated during that presentation, will also be incorporated into the final report.

### C. Field visits/Key Informant Interviews

The Team shall arrange to visit selected countries and in country sites in consultation with the EG team as appropriate. The assessment team should plan to meet with USAID bilateral missions to get feedback in the field since they are most knowledgeable of key players, stakeholders, and potential partners. USAID/E-CAM will consult with missions if they would like to meet the assessment team. When meeting key in-country representatives the assessment team may be accompanied by a member of USAID bilateral missions if missions consider it appropriate. The site visits will involve interviews with government officials, other donors, various implementing partners, civil society, etc. Meetings with government officials are essential and shall be scheduled as needed.

These meetings will include but not be limited to the officials of the Ministries of Environment. The assessment team may be required to debrief USAID bilateral missions on field meetings or visits if so deemed appropriate. The purpose of the debriefing will be to share findings and comments or feedback before preparing the draft assessment report.

### C. 4. IMPLEMENTATION AND MANAGEMENT PLAN

The Contractor shall provide contract management necessary to fulfill all the requirements of this task order. This includes cost and quality control under this contract. The implementation and management plan will be required with the proposal.

### C.5 PERFORMANCE MONITORING PLAN

The contractor's performance shall be evaluated based on the completion of specific tasks as outlined in the Task Order and reports submitted to the Contracting Officer's Technical Representative (COTR) as well as the standards specified in Section E.2 Monitoring and Evaluation Plan, including performance standards.

## C.6 RESPONSIBILITIES

USAID/E-CAM will be responsible for the following:

- Obtain in-country clearances for travel
- Facilitate initial assessment-related field trips, interviews, and meetings

## **ANNEX D: BIOGRAPHICAL SKETCHES OF ASSESSMENT TEAM**

**Team Leader/Communication Specialist – Douglas Barnes** Mr. Barnes is a strategic communications specialist with excellent leadership skills, extensive management expertise, and regional experience in Latin America (including CAFTA negotiations). His expertise on the environment and labor in the region includes his role as *Chargé d’Affaires* (acting ambassador) and Chief Operating Officer of the US Embassy in Costa Rica (2002-2005), in which he managed more than 230 employees in advancing free trade (CAFTA negotiations) and bringing Costa Rica into compliance with international labors standards. Mr. Barnes also strengthened environmental protection efforts in Costa Rica, laid the groundwork for an eventual debt-for-nature agreement under the Tropical Forest Conservation Act, supervised the US Regional Environmental Officer, and oversaw operations of the Regional Environmental Hub. His work as Chief of Party for the USAID /Anticorruption Threshold Program in Peru (current) and various roles in Public Affairs in the US State Department (2005-2009) have garnered him extensive experience in developing strategic communications programs and policies. Mr. Barnes is a Team Leader with superb management skills and knowledge of the environmental and labor issues in Latin America, and he is fluent in Spanish and English.

**Environmental Institutions and Natural Resource Management Specialist – Bruce Kernan** Mr. Kernan has over 30 years of experience in forestry, conservation and environmental consulting and advising, including experience in the fields of alternative development, forest management certification, environmental impact assessment, country strategies for biodiversity and tropical forest conservation and environmental laws and policies. He has conducted over 40 successful consulting assignments in 12 countries and has extensive experience in USAID environmental documentation, design and use of environmental monitoring and evaluation methodologies, project evaluations and proposals, and country biodiversity and tropical forest reports. He has served as Team Leader 26 times, has refined the inter-personal skills required to manage multi-disciplinary consulting teams and also produces well-written, succinct reports and makes diplomatic, persuasive presentations.

**Local Environmental Specialist – Pia Paaby Hansen** Ms. Hansen has over 22 years of experience in conservation, biodiversity, and ecology, including projects on climate change issues. Her recent work has focused on mainstreaming these issues into long term planning processes of local governments and territorial conservation offices, based on increasing adaptation and decreasing risks of climate change. She regularly interacts with professionals in the engineering, social-anthropological, economic, financial, environmental and administrative fields, and this makes her comfortable working in multidisciplinary groups and has allowed her to acquire trans-disciplinary skills. Ms. Hansen’s professional and educational background makes her well-positioned to participate in the processes of introducing the “ecosystem approach” to biodiversity conservation, climate change adaptation and human impacts definition.

**Local Labor Specialist – Abby Najera** Ms. Abby Najera is an experienced labor specialist with excellent expertise in labor justice and activism, organizing workers in a number of different industries, evaluation and monitoring, labor compliance and designing labor legislation standards. She has unique experience assisting marginalized populations (children, women,

indigenous peoples) in the workforce. She has examined the labor field from a variety of different angles and held a numerous positions with a host of international donors (DANIDA, FNV, USAID) including evaluator, labor advisor, project implementing and/or coordinator, researcher, and grassroots organizer. Ms. Najera was a labor researcher at the Commission for the Verification of Corporate Codes of Conduct (COVERCO) for more than five years and held several positions with the USAID project, Continuous Improvement in the Central American Workplace Project including the Deputy Chief of Party position where she managed the Alliance Partnership and facilitated coordination among relevant stakeholders. She completed paid and pro-bono work organizing workers including – providing training on gender and labor issues in the Maquila industry, training on the Logical Frame Approach for trade unions and FNV NGO partners and Public Services International, and acting as a labor advisor for the electrical power industry during collective bargaining. Ms. Najera is fluent in Spanish and English.

# ANNEX E: MATRIX OF CAFTA-DR ENVIRONMENTAL PROGRAM COMBINED WORK PLAN

CCAD lead implementer EPA lead implementer ELE lead implementer						
PROGRAMS	CCAD	EPA	ELE	EXPECTED OUTCOME	INDICATOR	
	\$ Working Activities	\$ Working Activities	Working Activities			
Improved Environmental Laws, Policies, Regulations and Procedures						
Wastewater management: Legal environment		X		X	Support to EPA - At least two additional elements of the Model Wastewater Regulation are adopted for implementation in each CAFTA-DR country by 2012. (ELE)  Provide technical assistance for dissemination of the Sustainable Wastewater Treatment Manual in CAFTA-DR countries. (CCAD)	<ul style="list-style-type: none"> <li>• Inter-institutional agreements established to facilitate adoption of additional Model Wastewater Regulation elements (ELE)</li> <li>• A permit and a format application for wastewater discharges in each of the CAFTA-DR countries are in place.</li> <li>• A wastewater permit discharge fee system in two CAFTA-DR countries implemented.</li> </ul>
		X		X	Support wastewater legal framework modification required to strengthen wastewater regulations.  Support the implementation of the EPA recommendations to improve the environmental impact legal framework	<ul style="list-style-type: none"> <li>• One national workshop to disseminate</li> <li>• At least one improved wastewater legal framework approved in each CAFTA-DR country.</li> <li>• At least three improved environmental impact legal frameworks approved in CAFTA-DR countries.</li> </ul>
Wastewater management: Environmental laboratory capacity				X	Support EPA to increase capacity of at least four environmental laboratories in CAFTA-DR countries to analyze wastewater and other parameters.	<ul style="list-style-type: none"> <li>• One environmental laboratory in two CAFTA-DR countries has implemented a Quality Assurance System in accordance with the International Organization of Standardization/ International Electro-technical Commission ISO/IEC 17025:2005 (emphasis will be placed on Honduras and Dominican Republic).</li> <li>• Trainings delivered on sampling and</li> </ul>

Chemical and hazardous substances						X	At least one regulation, policy or procedure in chemical or hazardous substances developed or improved	<ul style="list-style-type: none"> <li>• Developed or improved regulation, policy or procedure in chemical or hazardous substances presented to legal authority</li> </ul>
		X					Continuity work with national governments to develop the main elements needed for a national PRTR system and design and implement a national PRTR pilot program in two CAFTA-DR countries: assesment, legal framework, national committe, collect information and report	National Information about Sectorial polluted or chemical substances
Administrative procedures		X		X			At least three CAFTA-DR countries have adopted administrative procedures to facilitate environmental compliance of environmental laws. Develop national administrative environmental violation monitoring systems in at least three CAFTA-DR countries. At least four inter-institutional agreements developed and adopted in CAFTA-DR countries.	<ul style="list-style-type: none"> <li>• Three administrative procedures adopted</li> <li>• Three environmental violation monitoring systems implemented</li> <li>• Inter-institutional agreements developed and adopted for wastewater, solid waste and hazardous chemicals</li> </ul>
Solid waste policies and regulations		X					Development of the Landfill construction specifications and operation inspection protocol.	<ul style="list-style-type: none"> <li>• At least two landfill construction specifications adopted</li> <li>• Two national operation inspection protocols for landfills implemented</li> </ul>
<b>Strengthen Environmental Law Enforcement</b>								
Increased knowledge in environmental legislation and jurisprudence						X	New or improved environmental law course developed and offered by at least three judicial training institutes or universities in a CAFTA-DR country	<ul style="list-style-type: none"> <li>• Three training institutions or universities offering environmental legislation courses</li> <li>• 300 judges and environmental officials trained in environmental legislation and jurisprudence</li> </ul>
Increased capacity in the investigation, prosecution and sentencing of environmental crimes						X	Investigators, prosecutors and judges trained in the investigation, prosecution and sentencing of environmental crimes	<ul style="list-style-type: none"> <li>• 300 investigators, prosecutors and judges trained in the CAFTA-DR region</li> <li>• Technical manuals/instruments made available</li> </ul>
Environmental Compliance and Enforcement (ECE) Indicators		X		X			Expand development and use of compliance indicators to the region to help improve program management and public accountability	Number of additional ECE indicator system established and in use in CAFTA-DR countries

Environmental Impact Assessment (EIA)							
Increased capacity in EIA						<p><b>X</b></p> <ul style="list-style-type: none"> <li>EIA authority and private sector professionals have increased knowledge and capacity to conduct EIAs and EIA reviews</li> <li>EIA training provided by universities and recognized by EIA authorities for certification</li> </ul>	<ul style="list-style-type: none"> <li>EIA training courses delivered in each CAFTA-DR country</li> <li>EIA training and guidance materials adopted and integrated by not less than five (5) universities or training institutes in CAFTA-DR countries.</li> <li>Agreements established between universities and EIA authorities for EIA authorities to endorse EIA course offered by university</li> </ul>
Improve EIA legal framework		<b>X</b>				<p><b>X</b></p> <p>Support EIA legal framework modification required to strengthen EIA regulations.</p> <p>Model elements in EIA sanctions and administrative procedures developed to incorporate in modification of legal framework.</p>	<ul style="list-style-type: none"> <li>CCAD indicators?</li> <li>Model regulation in EIA sanctions and administrative procedures developed (ELE)</li> </ul>
Technical EIA guidelines in mining, energy and tourism sectors with follow-on training		<b>X</b>		<b>X</b>		<p><b>X</b></p> <ul style="list-style-type: none"> <li>Support EPA with the drafting of technical EIA review guidelines in mining, energy and tourism. (ELE)</li> <li>Government officials trained in the use of technical EIA review guidelines in mining, energy and tourism (CCAD)</li> </ul>	<ul style="list-style-type: none"> <li>Three technical guidelines (mining, energy and tourism) developed (ELE)</li> <li>Three technical guidelines (mining, energy and tourism) disseminated in all CAFTA-DR countries (CCAD)</li> <li>At least one workshop for each guideline held in CAFTA-DR countries</li> </ul>
Administrative EIA tracking systems						<p><b>X</b></p> <p>At least four CAFTA-DR countries with improved or new Administrative EIA Tracking Systems in place and operative, and preferably available to the public via the internet</p>	<p>A total of at least four CAFTA-DR countries with improved or new Administrative EIA Tracking Systems in place and operative by the end of the ELE Program</p>
EIA GIS NEPAAssist				<b>X</b>		<p><b>X</b></p> <p>Deployment of NEPAAssist Tool in at least four CAFTA-DR countries</p>	<ul style="list-style-type: none"> <li>Web-based GIS EIA review tools (NEPA Assist) deployed and operative in at least four CAFTA-DR countries</li> </ul>

Improved Accessibility and Quality of Environmental Information								
Air quality monitoring systems		X		X		<p>An Air Quality Monitoring program in Dominican Republic implemented by providing training, technical assistance, and equipment.</p> <p>Emissions inventory methodology workshops conducted in each CAFTA-DR country.</p> <p>Regional technical exchange on QA/QC finished.</p>	<ul style="list-style-type: none"> <li>• At least one CAFTA-DR country monitoring air quality for a particulate matter.</li> <li>• At least one country conducting real time air quality monitoring.</li> <li>• Two technical exchanges conducted on QA /QC.</li> <li>• At least three emission inventory methodology workshops conducted.</li> </ul>	
Environmental complaints, public participation and access to information					X	<p>Strengthened capacity to manage environmental complaints through the adoption of selected elements from the model complaints system by environmental authorities</p>	<ul style="list-style-type: none"> <li>• Model complaints system developed</li> <li>• Relevant elements of the model complaint system applied in at least two CAFTA-DR countries</li> </ul>	
Improved Private Sector Environmental Performance								
Increase of use of clean production technologies		X				X	<ul style="list-style-type: none"> <li>• Increased private sector knowledge and adoption of clean production and energy efficiency best management practices and technologies in priority sectors in CAFTA-DR countries.</li> <li>• Conformity Assessment Procedures (CAS), adopted for energy efficient equipments that contribute to change technology and consumption trends.</li> </ul>	<ul style="list-style-type: none"> <li>• Thirty new companies in CAFTA-DR countries adopting cleaner production and clean energy technologies by the end of the extension period.</li> <li>• Overall energy, water, and solid waste use reduced by 10%.</li> <li>• Conformity Assessment Procedures (CAS), adopted for energy efficient equipments that contribute to change technology and consumption trends in compact fluorescent lamp, air conditioners, motors, and refrigeration.</li> </ul>
Increased training in cleaner production and EMS						X	<ul style="list-style-type: none"> <li>• Environmental science curricula and programs in the area of clean production, EMS and EIA improved in at least five universities in CAFTA-DR countries.</li> <li>• At least one course using this curricula offered to undergraduate students.</li> <li>• Practical trainings in cleaner</li> </ul>	<ul style="list-style-type: none"> <li>• At least 150 undergraduate students have taken this course</li> <li>• At least 100 undergraduate students have completed a practical training in cleaner production, EMS and/or EIA</li> </ul>

<p>Private alliances between buyers and producers/processors for the adoption of environmental and labor standards</p>						<p><b>X</b></p> <ul style="list-style-type: none"> <li>• At least four (4) private sector alliance partnerships developed promoting voluntary labor and environmental standards or certification schemes through their supply chains.</li> <li>• At least six (6) producers in each CAFTA-DR country newly compliant with alliance voluntary environmental and labor standards or certification schemes as agreed to between major buyers and sellers.</li> <li>• At least two new voluntary labor and environment standards or certification schemes adopted (e.g. horticulture and fisheries) by national, regional and international supermarkets and/or other major buyers and applied to their suppliers in CAFTA-DR countries.</li> </ul>	<p>At least 24 companies in CAFTA-DR countries selling products made under standards as a result of the alliances established</p> <p>Two new voluntary labor and/or environment standards or certification schemes agreed to by national, regional or international buyers</p> <p>4000 workers benefitting from improved working conditions from their employers adopting voluntary standards under new alliances</p> <p>Increase of total sales of products made under newly adopted standards, certification schemes and alliances</p> <p>Change in profitability due to reduced costs and/or increased revenue as a result of alliances</p>
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**ELE-Chemonicsinfo. “Resultados Universidades” August 16**

País	Universidad
Guatemala	Facultad de Ingeniería de la Universidad de San Carlos de Guatemala –USAC-
	Facultad de Veterinaria y Zootecnia –USAC-
El Salvador	Universidad del Salvador –UES-
	Universidad Don Bosco -UDB-
Nicaragua	Universidad Thomas More -UTM-
	Universidad Nacional de Ingeniería -UNI-
República Dominicana	Universidad Autónoma de Santo Domingo -UASD-
	Pontificia Universidad Católica Madre y Maestra -PUCMM-
Costa Rica	Universidad de Costa Rica –UCR-
	Instituto Tecnológico de Costa Rica –ITCR-
Honduras	Comité Interinstitucional de Ciencias Ambientales –CICA-
	Universidad Nacional Autónoma de Honduras –UNAH-
	Universidad José Cecilio del Valle –UJCV-

<b>Pais</b>	<b>Universidad</b>	<b>Docentes capacitados</b>	<b>Alumnos con conocimiento</b>	<b>Curso integrado</b>	<b>Práctica de PML</b>
Guatemala	USAC, Facultad de Ingeniería	21 julio, 2010	30 estudiantes de Ingeniería Industrial, Química y Mecánica	Está en proceso la propuesta ante la Junta Directiva de la Facultad para la apertura de un curso optativo con carga de créditos.	10 Estudiantes desarrollando SGA y Diagnósticos de PML en la facultad y el CGPL. 31 Estudiantes realizando Estudio Profesional Privado de Graduación en PML y SGA.
El Salvador	UDB, Facultad de Ingeniería	19 docentes de ambas universidades, junio, 2010	122 Ingeniería	Se ha cambiado el programa de estudios con el contenido propuesto en el curso de Desarrollo Sostenible	
	UES, Facultad de Ingeniería		En proceso	Se abre un curso con el contenido total de la propuesta dentro del proyecto Tecnologías Limpias.	30 Estudiantes realizado tesis en PML.
Nicaragua	UNI, Escuela de Ingeniería Industrial	18 docentes de ambas universidades, junio 2010	118 Ingeniería Industrial	Se incluyó SGA como parte de la temática de PML que ya se ha realizado desde 2007 de forma transversal.	
	UTM, Facultad de Ingeniería		47 Ingeniería	Se incluyó los módulos de la propuesta a cursos relacionados de forma transversal.	5 estudiantes haciendo tesis en PML
República Dominicana	PUCMM, Ingeniería	22 docentes, junio 2010	40 Ingeniería Industrial y		

	UASD, Ingeniería		Química de ambas universidades	En la UASD Se ha desarrollado los esfuerzos para que PML sea un módulo dentro del curso preparatorio de monografías a estudiantes que han cerrado el pensum de estudios.	La UASD integró a 8 Estudiantes para practicar PML en el proyecto territorial desarrollado en la Bahía de Hiana realizado por el CNPML de Nicaragua.
Costa Rica	UCR, Facultad de Agronomía		15 estudiantes de ambas universidades de las facultades de Ingeniería, Agro negocios.	Ambas Universidades generarán Plan de Acción que incluya la teoría y práctica Junio 2011.	
	UTM, Facultad de de Ingeniería.	27 docentes de ambas universidades , marzo 2011			
Honduras	CICA	32 docentes de los recintos universitarios que firmaron el convenio, mayo 2011	30 Ingeniería	Las tres instituciones generaran Plan de Acción que incluya la teoría y práctica Junio 2011.	
	UJCV, todas las facultades				
	UAHN, Facultad de Ingeniería				
<b>Total</b>		<b>139 docentes</b>	<b>402 estudiantes</b>	<b>84 estudiantes practicando.</b>	