

US-AEP Sri Lanka FY 2005 Work Plan

I. Country Strategy

A. Background and Operating Environment

The absence of a bilateral environmental and energy program in USAID/ Sri Lanka provides US-AEP an opportunity to conduct a complementary environmental and energy programs along with the SARI/Energy regional program. The Colombo Mission Performance Plan defines the role of US-AEP as “*Promotion of cleaner technologies and improving energy use efficiency.*” Most US-AEP activities fit in well with USAID/Sri Lanka economic growth Strategic Objective “*Foundation Set for Rapid and Sustainable Economic Growth.*” US-AEP work on urban governance complements the USAID/Sri Lanka democracy and governance SO “*Politics and Governance Made More Nonviolent and Inclusive.*” In addition US-AEP strengthens activities of the Economic and Commercial office of the US Embassy. Services of US-AEP Sri Lanka are well recognized by the GSL, private sector, ADB, World Bank, United Nations and NGOs. Experience in implementing successful programs in Asia, availability of strategic tools to promote partnerships between US and Asian entities and rapid access to environmental & energy best practices and technology resources and institutions in the United States have been our strength.

The USAID/Sri Lanka Natural Resources and Environmental Policy Project (NAREP) between 1992 and 1998 provided the initial momentum and foundation for most environmental management initiatives including the EIA process in Sri Lanka. Following NAREP, the World Bank took the lead in implementing environmental activities via its Environmental Action Plan 1 project (EAIP). Recently the Bank has decided to incorporate environment into its sector plans and terminate EAIP project. Meanwhile, ADB is in the process of expanding its assistance to environmental related activities with the Clean Air Initiative and water sector projects. However there is no clear indication from ADB on industry related programs. A number of programs has been conducted by the United Nations Development Program and Japan International Cooperation Agency to strengthen local authorities while the Netherlands Government is helping to improve regional regulatory structure. Less than satisfactory, enforcement of environmental regulations due to economic and political reasons and inadequate awareness of the health impacts by affected groups have negatively affected the environmental performance in the country. Sri Lanka reports an increased number of cases of asthma, upper respiratory diseases, dengue and numerous cases of surface water pollution due to human activities.

The agreement between GSL and the Liberation Tiger Tamil Eelam on non-aggression has changed Sri Lanka’s outlook, locally and internationally. Government of Sri Lanka advocates economic development as a mechanism to reduce poverty, reduce the geographic unevenness in resource distribution and create an enabling environment for trade and investment. However, the peace process has slowed down since November 2003 and GSL is facing difficulties to access the \$ 4.5 billion donors have pledged to help Sri Lanka at the donor forum in Japan in mid 2003. In 2004 the United States announced Sri Lanka as an eligible recipient for assistance under the Millennium Challenge Account (MCA) and offered Sri Lanka an opportunity to participate in the Tropical Forest Conservation Act (TFCA) programs. The US bilateral assistance to Sri Lanka is also on the rise.

GSL signed a free trade agreement between India and Sri Lanka four years ago and started negotiating a free trade agreement with the US, which has signed the framework agreement.. Sri Lanka is in the process of upgrading its ports, road and telecom networks, airports and other infrastructure essential for rapid economic growth. Sri Lanka’s geographical location, its friendliness with other South Asian countries could make Sri Lanka a regional hub for trade if the country utilizes its educated and healthy labor and strategically improves its competitiveness and governance. Country is showing signs of a

slow recovery with stock market and tourism industry showing marginal improvements. The country's GDP growth is about 5% presently. However the expected foreign direct investments are yet to come. Long-term sustainability and the competitiveness of industries, services and exports depend much on strong environmental performance, reliable supply of energy at an affordable cost along with improved energy efficiency. Urban centers in Sri Lanka are expanding rapidly and municipalities find it difficult to provide quality services. Except for Colombo, municipalities lack human resources to plan, implement and manage good programs. Political interventions in local authority management are significant and mostly negative.

Our Mission

"Promote sustainable economic growth and an improved quality of life in Sri Lanka by working to make Sri Lankan cities cleaner and more efficient, its industries less polluting and more competitive, and its laws and regulations better able to protect the environment. In doing so, US-AEP will help Sri Lanka to implement environmental best practices, technologies, services and knowledge both from the US and other US-AEP countries."

Objectives

Our objectives are to:

- Increase awareness on economic, social and health impacts due to pollution and improve dialogue among the government, private sector and general public to promote pollution prevention, energy efficiency and environmental management.
- Improve the capacity of the Government of Sri Lanka, private sector and civil society to manage air pollution, water pollution and municipal, medical and hazardous waste, primarily in urban areas.

The over all goal of the USAID/US-AEP regional program is to work towards “***Environmentally Sustainable Growth and Improved Quality of Life***.” Our Strategic Objective is “***Cleaner Cities and Industries in Asia***.” US-AEP program uses three Intermediate Results (IRs) for program management as follows:

IR1: Improved Environmental Governance

IR2: Improved Urban Environmental Management, Technologies and Resource Efficiency

IR3: Improved Industrial Management, Technologies and Resource Efficiency

B. Sri Lanka Country Strategy

In order to help Sri Lanka to achieve a high level of competitiveness in the global market place and better quality of life through sustainable economic growth and to create the enabling environment to reap the benefits of the new found peace, we will use the limited resources and staff in US-AEP program to:

- Identify critical areas of engagement based on host country and US mission priorities. US-AEP programs will complement the activities of USAID/Sri Lanka and the Economic and Commercial Section of the US Embassy;
- Use US-AEP's rapid response tools such as Technical Support Services Contract, Environmental Program for Sustainable Growth and The Asia Foundation to address and find solutions to urban and industrial environmental issues in the areas such as air quality management, waste (medical, municipal and hazardous) management, urban service delivery, pollution prevention, industrial and urban energy efficiency, surface water pollution and increased use of clean energy sources;
- Leverage resources of other development partners, primarily the World Bank, ADB and UN, and bring in innovative and appropriate programs through the Alliance to Save Energy, International

City/County Management Association, US companies and other US Institutions. US-AEP will match strong Sri Lanka partners with US partners to facilitate the transfer of best practices and technologies;

- Capitalizing on environmental management experience of USEPA, US-AEP will continue to provide exposure tours to Sri Lankans in order to improve the understanding of potential interventions for addressing environment and energy issues;
- Continue to look for the new partnerships between American and Sri Lankan institutions including private sector partnerships;
- Create enabling environment for effective enforcement of environmental law and regulations. US-AEP program will add emphasis on engaging citizens, policy makers and school children in the environmental dialogue;
- Increase program emphasis on surface and ground water conservation and improved access to water in the urban areas.

C. Relationship to USAID and Other Donor Programs

US Mission to Sri Lanka : In the newly USAID/Sri Lanka Strategy 2003- 2007, US-AEP Sri Lanka has placed its program under two SO's, namely, the SO4 on "*Foundation Set for Rapid and Sustainable Economic Growth*" and SO5 on "*Politics and Governance Made More Nonviolent and Inclusive.*" Most industry and energy activities will relate to the SO4 and urban service delivery and awareness activities have linkages to SO5. US-AEP provides technical inputs and program support to several USAID sponsored industry clusters created under "The Competitiveness Initiative", including the industry clusters on tourism, rubber, coir and ceramics. Currently, US-AEP is helping the tourism cluster to improve energy and water use efficiency through the ASE programs. US-AEP played a key role in securing two grants from the Mission Incentive Fund (MIF), namely, the "Alliance Supporting Environment and Community through Eco-tourism (SENCE) Grant and the "Sustainable Coastal Tourism in Asia (SCOTIA) Grant. These grants, which worth \$900,000 each, will be used to help tourism cluster and to introduce environmental best practices during the next two years. US-AEP is also in the final year of the \$215,000-Global Development Alliance grant on "Sri Lanka Clean Air Initiative". Some activities of these three grants are included in the FY05 workplan. US-AEP Country Program Manager assists the USAID/Sri Lanka Mission in the functions of the Mission Environmental Officer and the management of the SARI/Energy regional program. The Economic and Commercial office in the Embassy often uses US-AEP assistance on environment and energy related activities that include supporting energy and environment work in Maldives.

World Bank : The World Bank considers US-AEP as an entity that can deliver appropriate rapid response/support to development programs in Sri Lanka. Our key collaborations are through the air quality management and waste management programs. US-AEP catalyzed Sri Lanka programs on both sectors by creating alliances and encouraging private sector participation. City of Colombo municipal solid waste management program and the upcoming vehicle inspection and certifications program are two of the key examples of the public-private alliances we were instrumental in creating.

Asian Development Bank: The Asian Development Bank continues to collaborate with US-AEP on air quality management through the Clean Air Initiative for Asia (CAI). This year we will collaborate with the ADB-funded Business Development Program to promote renewable energy. In the future we may find niches in ADB Sri Lanka program through the SCOTIA on coastal zone management.

United Nations Programs (UNDP and UNIDO): The United Nations Industrial Development Organization in association with National Cleaner Production Center implements cleaner production activities in Sri Lanka. Country Manager of US-AEP is a member of the National Steering Committee of NCPC. US-AEP Manager also serves as a member of the National Committee for the Global Environmental Facility (GEF), a small grant program managed by UNDP that complements US-

AEP/TAF grant program. UN agencies are supporting the expansion of the usage of renewable energy and US-AEP shares information and coordinates through activities by US-AEP and SARI/Energy. This year US-AEP is proposing to develop a joint small grant program (about \$25,000) to support local research to promote air quality monitoring, modeling and health impact assessment.

Other Donors: In Sri Lanka, the European Union (EU), German Technical Corporation (GTZ), Japanese International Corporation Agency (JICA), the Norwegian Government and the Netherlands Government support limited number of environmental projects. In FY2005, US-AEP intends to improve coordination/interaction with other donors as we had collaborated with Japan BIC and GTZ on vehicle maintenance and capacity building in vehicle testing in the past. Some US-AEP activities conducted in FY03 and FY04 on developing energy efficiency-related plans for street lighting is being considered by JICA for implementation assistance along with the Sustainable Guarantee Facility for Energy Efficiency projects developed through SARI/Energy.

D. Strategy Development Process

Since 1999, US-AEP Sri Lanka strategy has evolved and the focus of the program has improved over time. We were able to better understand the priority areas of the country programs by other donors and the Government through close coordination. Regular contacts with GSL, donors and six years of working within the USAID Mission and the country's small geographic size helped US-AEP to adopt an ongoing strategy development process that can respond to country needs and to share our ideas with GSL and others on a continuing basis.

During the last two years, US-AEP programs were positioned to complement the activities of the USAID bilateral program. During the new strategy development period at USAID Sri Lanka, US-AEP Sri Lanka tried to complement the USAID bilateral programs on governance by expanding its activities in urban service delivery, increased environmental awareness and citizen participation. FY2005 US-AEP work plan strategy takes into account the country's needs for improved environmental dialogue, best practices and improved technologies to prevent pollution (e.g. air, water and soil) and the opportunity to improve urban services such as water, sanitation and management.

US-AEP is in the process of developing a new Strategic Objective that will be introduced in FY2006. Therefore our aim in FY2005 is to complete or sustain the on-going programs and document the program's lessons learned and best practices.

US-AEP Partners and Partner Tools

US-AEP mobilizes the expertise of a number of US agencies and employs a variety of tools designed and offered by US-AEP partners to implement. The Institute of International Education (IIE) manages the Environmental Exchange Program for Sustainable Growth (EPSG) that facilitates exposure visits and study tours to USA or within Asia for Sri Lankans and arranges travels of US experts to Sri Lanka. EPSG helps in transfer of technology, best practices and experience and to enhance the sustainability and visibility of our programs. The Council of State Government (CSG) operates the State Environmental Initiative (SEI) grants that facilitate partnering US states with counterparts in Asia to address environmental and efficiency issues. The Alliance to Save Energy (ASE) and the International City/County Management Association (ICMA) are two key professional partners conducting programs in Sri Lanka. US-AEP program management support is provided by the Technical Support Service Contract (TSSC), managed by the Louis Berger Inc. TSSC maintains its regional office in Bangkok, Thailand, in addition to the Washington D.C. offices. It has a resident Sri Lanka Country Program Coordinator to support US-AEP program implementation since August 2004.

FY 2005 US-AEP Sri Lanka Activity Summary

Table of Activities

Activity	Activity Purpose
1. Sri Lanka Clean Air Initiative	To minimize the health impacts associated with vehicular emissions, improved air quality monitoring and modeling to facilitate policy development and better understanding, increase enforcement of air quality standards and regulation and highlight the co-benefits of air pollution control on economic, health and social costs.
2. Improved Urban Governance and Service Delivery	To improve municipal service delivery through the public-private partnership, improve financial planning and management of local authorities, increase citizen participation in local authority management functions, engage citizens in environmental dialogue and decision making to promote transparency and good governance and improve understanding of causes and effects of human activities on the environment
3. Integrated Water Resource Management	To improve the water quality and access to water in urban settings using an integrated approach that include public awareness building, stakeholder involvement, public – private partnerships to ensure sustainability and technology development and transfer. The activity also includes improving the sanitation, solid waste management and efficiency in water pumping and use.

II. Activities

Activity 1: Sri Lanka Clean Air Initiative

Objective: To minimize the negative health, economic and social impacts due to emissions from mobile and industrial sources and open burning of waste.

Primary Program Areas:

IR1: Improved Environmental Governance

IR2: Improved Urban Environmental Management, Technologies and Resource Efficiency

Implementing Partners:

Sri Lanka Partners: Ministry of Environment and Natural Resources, Ministry of Transport, Air Resource Management Center (AirMac), Department of Motor Traffic, Sri Lanka Traffic Police, Three Wheeler Owners Association, Private Bus Owner Association, Central Environmental Authority (CEA), Industrial Services Bureau (ISB), Laugh Gas (Pvt.) Ltd., University of Moratuwa, Ceylon German Technical Training Institute, Environment and Management Lanka (Pvt.) Ltd. Burns Environmental Technologies (Pvt.) Ltd., University of Peradeniya and City of Colombo

International Partners: Environmental Systems Products (ESP), National Center for Vehicle Emission Control and Safety (NCVECS), University of Colorado, Asian Development Bank (ADB) and the World Bank (WB)

Background: Air quality in the City of Colombo and other major cities is deteriorating primarily due to mobile and industrial emissions. Mobile sources contribute up to 80% of the air pollution in Colombo. About 60% of the vehicles are registered in the Western Province, where 70% of the population resides. Open burning of municipal waste is also significant contributor to air pollution. Since FY 2000, US-AEP has provided training assistance, exposure tours, public and technical information and promoted collaboration of the various stakeholders (e.g. public, private and NGO's). In 1992, US-AEP helped revitalize the implementation of the government's CleanAir 2000 Action Plan, phased out leaded gasoline, designed fuel and mobile emission standards, introduced low sulfur diesel and import regulations for used vehicles. Sri Lanka is in the process of introducing vehicle testing and certification in FY05. In FY 2004, US-AEP helped the stakeholders to review the progress of the air quality improvement activities and develop the "Sri Lanka Clean Air Initiative 2007 Framework" that resulted in the broadening of the air quality management program in Sri Lanka to cover emission inventory, ambient air quality monitoring and modeling, co-benefit analysis and expanding the awareness work. The primary driver for this activity is the increased incidence of respiratory diseases in urban areas and the recognition of the problem by the public.

Implementation Activities

A: Establishment of vehicle testing centers

The purpose of this implementation activity is to create the enabling environment to conduct vehicle testing and certification. We have helped Sri Lanka to build the capacity, tender the contract and select private sector operators. Sri Lanka has 1.2 million vehicles of which about 50% are motor bikes and three wheelers. We have also started building the capacity of motor mechanics with technical assistance from the University of Colorado and local technical training institutions. Companies short listed for vehicle emission testing center establishment await the cabinet approval. However GSL is still not ready to approve the designed cabinet paper due to the fear of a public backlash on the vehicle testing costs, especially at the time when the country's cost of living is on a rise. We are left with the challenge to convince public and policy makers of the positive aspects of such a program by comparing the long-term health, economic and social benefits. Specific interventions include:

- Collect and assemble information and model results (e.g. health statistics, co-benefit model such as the USEPA developed “Integrated Environmental Strategies” that combines health, transport and economics factors and the World Bank work in Thailand to calculate the impact on GDP as a result of air pollution). This information on health and economic benefits will be provided to the policy makers and the public.
- Implement roadside mobile testing system by the traffic police. We will purchase smoke meters and gas analyzers to conduct an awareness campaign that will also generate data on the status of the fleet.
- Build the capacity of the institutions that are involved in the establishment of testing and certification such as the Department of Motor Vehicles, Central Environmental Authority, Private Sector Operators, Media and NGO’s.
- Improve data handling capabilities of the CEA.
- Improve DMV’s capabilities to effectively link the vehicle test data, vehicle information with other relevant statistics.

Expected Results:

- Co-benefits analysis of vehicle emission testing documented and disseminated by May 2005.
- Implementation of road side testing by traffic police by February 2005.
- Cabinet paper on vehicle testing centers approved by December 2004; work to establish testing centers begins by April 2005 and the training by Colorado State University completed by June 2005.

B: Air quality monitoring, inventory, modeling and research

Air quality monitoring (ambient, stationary and indoor) is critical for policy formulation and to target assistance. Sri Lanka Clean Air Initiative 2007 recommends development of emission inventory, modeling capabilities and interventions to characterize emission levels at different scenarios. In the absence of a systematic ambience air quality program, it is difficult to assess the impact of air quality improvement efforts. In the past, US-AEP helped scientists in Sri Lanka to adopt a low cost passive air quality monitoring with the help of the California Air Resource Board. Understanding carbon trading mechanisms and building capacity of the GSL and private sector is expected to reduce the cost of development programs where reduction of green house gases will result. We will also support indoor air pollution and noise pollution activities as proposed in the Clean Air Initiative 2007. Specific interventions of US-AEP in FY 2005 include:

- Create a sub-committee under the AirMac to facilitate monitoring, inventorying and modeling. Collect the data available in country through a National Symposium on Air quality management.
- Strengthen local capacity for modeling and research to establish linkage between air pollution, health and socio-economics. Collaborate with air quality inventory and modeling work done in Pune, India by USEPA.

Expected Results:

- Compiled information on air quality research conducted in Sri Lanka highlighting the health and pollution nexus.
- Data gap analysis for modeling identified by January 2005; the framework to collect data for air quality modeling established by May 2005 and probable models to use in Sri Lanka identified August 2005.
- Project to monitor health aspects related to air quality established and preliminary results released by May 2005.

C: Clean energy development

Sri Lanka energy supply, on the average, is 50% hydro and 50% thermal. The dependency on the thermal energy is increasing. The country imports oil and gas. About 40% of the population is not connected to the national grid as the primary source of energy is fuel wood and kerosene, both having noted adverse health impacts. Opportunity exists to promote wind, solar, biogas and mini/micro hydro-based energy sources and hybrids. In FY03 and FY04, US-AEP worked with USAID SARI/Energy program and the National Renewable Energy Laboratory to develop wind and solar potential maps for Sri Lanka and in the process of characterizing the mini hydro potential. US-AEP assisted the establishment of the first pilot off-grid wind facility based on the wind map and the model is proven to be a success for improving economic and social life in an off-grid situations. We also supported a leading brewery to generate methane gas using industrial wastewater.

Contribution of open burning at the City of Colombo's old waste dump site is negatively impacting the air quality in the city. Open burning is also practiced in other towns as a way of disposing waste. In addition to smoke, generation of methane and other green house gases in these landfill sites is a common occurrence that needs increased awareness and a scientific approach to handle it. Specific US-AEP's interventions in these areas in FY 2005 include:

- Develop a mechanism in consultation with stakeholders to mitigate GHG emissions at the City of Colombo dump site and develop the project as a GHG project. Propagate the best practices developed to other cities.
- Collaborate with the ADB-sponsored business development project and other agencies to replicate the off-grid wind model in other off-grid locations and eco-tourism destinations.
- Refine on-site waste treatment and wastewater-to-energy technologies in hotel and food industries to reduce waste loads in surface water bodies.

Expected Results:

- Baseline developed for the open burning in City of Colombo by April 2005; potential benefits of mitigation assessed and approach developed by July 2005.
- Three off-grid hybrid renewable energy facilities by August 2005
- Wastewater-to-energy technology at the brewery ready for replication and a model extended as a GHG project by April 2005

D: Noise pollution management

In FY04, US-AEP facilitated participation of four Sri Lankans from the government and private sectors to attend the NoiseCon2004 in Baltimore. Following the approaches to establish Air Resources Management Center and Partnership for Clean Air for air quality work, the noise group is in the process of establishing a stakeholder group for noise pollution control in Sri Lanka. Specific US-AEP activities in FY 2005 include:

Based on the experience at NoiseCon2004 visit a GDA grant will be given to Central Environmental Authority to develop a noise map in Dehiwala- Mount Lavine urban area to better understand the urban sources of ambient noise with the objective of formulating ambient noise standards and policy for urban areas.

Expected Results:

- Working group on noise pollution control established by March 2005.
- Sources of ambient noise in urban settings identified and documented by May 2005.
- Initial work to characterize (screen) local materials suitable for noise barriers by April 2005 and
- Initiation of the process to develop noise pollution policies and standards in Sri Lanka and a model approach developed by March 2005.

Activity 2: Improving Urban Governance and Service Delivery

Objective: To create enabling environment for efficient urban service delivery by Local Authorities

Primary Program Areas:

IR1: Improved Urban Governance

IR3 Improved Urban Environmental Management, Technologies and Resource Efficiency

Implementing Partners

Sri Lanka Partners: Ministry of Local Government, City of Colombo, City of Sri Jayawardenapura Kotte, Waste Management Authority of the Western Province, Cities and Association of Mayors, Sevanatha (NGO) and Arthacharya Foundation (NGO), Burns Environmental Technologies (Pvt.) Ltd., EML Consultants and Wayamba Integration for Growth and Sustainability (WINGS).

International Partners: ICMA, Institute of International Education (IIE), GLOBE project, WB/GEF and TAF.

Background: As Sri Lankans move beyond the era of conflict that has challenged the country for the last two decades, local government units will become critical and legitimate partners in the overall governing of the country. Urban service delivery faces a major challenge to keep pace with the anticipated rapid growth and could be benefited much by adopting improved management practices and use of modern financial, mapping and governance tools. Our intervention is expected to build the capacity of local authorities, create innovative public-private partnerships and promote the use of modern management and technologies to improve service delivery and governance.

We helped the City of Colombo and Private Sector to adopt a new legal framework to collect and process MSW (900 tons/day) through a public-private partnership. At present, a private company, Burns Environmental Technologies (BETL) receives the City of Colombo's waste for composting. US-AEP has helped in technology improvements and methods to enhance the quality and marketability of MSW-based compost. Experts from the University of Minnesota and the Minnesota Extension Service worked with BETL to improve the process and instrumentation and helped draft Sri Lanka Standards for Composting by working with the Sri Lanka Standards Institution and National Fertilizer Secretariat. During FY04, the solid waste management authority of Western Province was established and US-AEP is planning to provide support to the authority in replicating the models US-AEP had helped in the past to other cities.

On a small scale, US-AEP found a system introduced by the NGO "Arthacharya Foundation" in the city of Galle as extremely effective to reduce waste into the municipal disposal stream. This model includes a community-based micro-financing scheme to improve income level, nutrition and health status of families and information transfer process on health, and so forth. We have strengthened the Arthacharya Foundation project by helping it establish a plastic palletizing facility and added a waste-to-energy biogas system at the Galle hospital through a TAF Grant. US-AEP intends to help replicate this experience in other urban environments during FY05.

During FY04, we have strengthened our relationships with the Sri Lanka Institute of Local Governance (SLILG) and helped USAID/India Regional Urban Environmental Policy and Management Support Program (RUPEOMAN) program to develop a regional network for "Environmental Urban Governance" that covers Nepal, Bangladesh, Sri Lanka and India. This year US-AEP Sri Lanka and the Democracy and Governance Program in USAID/Sri Lanka will work to enhance the capacity of SLILG and continue the activities initiated by the RUPEOMAN program.

Implementation Activities

A: Large Scale Municipal Solid Waste Management

In FY05, US-AEP will work with the City of Colombo's MSW project to ensure the quality of the compost and expand the concepts to other larger cities. We will also work on processing and disposal of plastic and medical waste. Specific interventions include:

- Apply the University of Minnesota's technical assistance to Colombo facility and initially help other cities to develop compost facilities.
- Assist BETL and Western Provincial Council Waste Management Authority to develop and implement a compost quality assurance program that includes a community outreach program on waste sorting and promoting environmental, economical and social benefits of using compost as a soil conditioner.
- Support the initiative by BETL to design and implement systems to dispose medical waste and coordinate with WB to develop investment support for medical waste management.

Expected Results:

- Model joint program by private sector and government to enhance the quality of compost by December 2004 and creation of enabling environment to market MSW-derived compost by May 2005, at least to ensure 100% sales of the Colombo waste project.
- Replication of the Colombo model of composting at two major cities completed by June 2005.
- Large scale medical waste disposal facility in Colombo operated by the private sector by May 2005.

B: Community Based Municipal Solid Waste Management

Based on the successful program by the NGO "Arthacharya Foundation" in the city of Galle, US-AEP will help a consortium of NGO's to replicate the model in FY2005. Specific interventions include:

- Develop materials on compost making using the information from the University of Minnesota and USAEP Urban Advisor
- Purchase of equipment to measure oxygen content, temperature and moisture levels in compost systems to help optimize the conditions for composting in community projects.
- Develop linkages with the USAID/USAEP-sponsored compost testing lab at BETL and research communities.
- Develop and implement program to popularize the waste recycling, and composting plan and use among urban populations that include separation of hazardous materials such as used batteries and computer components.

Expected Results:

- Guide book and extension materials developed on site selection, methods of waste segregation, optimum conditions for processing waste including plastic, bio gas and compost. Activities to be completed by May 2005.
- Material on waste sorting, markets and recycling options developed and distributed among local authorities by May 2005.
- Programs to help at least five municipalities to develop waste reduction programs with NGO's playing a catalytic role by June 2005.

C: Capacity building of local authorities on municipal services and financial management

In FY04, the City of Austin, Texas developed a technical collaboration program with the City of Kotte Sri Jayawardenapura, Kotte in Sri Lanka. Two officials of the City of Austin worked with city of Kotte staff for a week to identify the potential management improvements, in financial systems, collection of taxes and revenues, community participation in decision making, and capacity building. Meanwhile UNDP expressed the desire to collaborate with US-AEP and to incorporate the model into its Sustainable Cities Program (SCP) being implemented in a number of Sri Lankan cities. In FY05, US-AEP will mobilize the partnership between the City of Kotte, EML Consultants (a company with accounting and GIS background) and Sevanatha (NGO with strong community program experience) to work on management improvements in Kotte. City of Austin may provide technical assistance through ICMA.

US-AEP will assist the Sri Lanka Institute of Local Governance (SLILG) to work with local authorities to implement the RUPEOMAN program of USAID in India. The assistance will help Sri Lanka to have the municipal performance measurement system that will enhance good governance. We would also like to pursue the possibility of facilitating the transfer of a behavior change models used in Chennai, India to be used in Sri Lanka. Specific tasks include:

- Assist the partnership between EML, Sevanatha and City of Kotte to improve and adopt management systems and practices that can be replicated
- Provide a model for the use by UNDP program on Sustainable Cities using Kotte experience
- Print the best practices that are being developed by SLILG and the popularization of the REPEOMAN developed municipal performance measurement system.

Expected Results:

- Digital databases, financial systems and a model approach developed for Kotte for improved city management and service delivery by July 2005.
- Acceptance for adoption of the best practices developed in Kotte by the Mayors Forum and other donors by August 2004.
- Municipal performance system for Sri Lanka local authorities evaluated and tested by August 2005.

D : Increased environmental awareness and public participation

Increasing public awareness on the relationships between pollution, health, quality of life and economics and involving policy makers and citizens on the environmental dialogue is one of US-AEP program strategies to improve urban environmental governance. Target groups include, school children, public policy makers and enforcement officers. US-AEP works towards engaging private sector in environment awareness program sponsorship and integrating the experience of programs in Sri Lanka, India, USA and elsewhere. There is a need in Sri Lanka to have electronic and printed materials and test kits to use in education and awareness programs. US-AEP has identified a number of organizations in the US that are involved in developing program materials on environment and energy (posters, leaflets, CD-Roms and instructions to design programs at community levels etc.) . In order to use the material in Sri Lanka we need to collect, review and modify materials to suit the local context. In FY 2005, US-AEP plans a number of interventions for this issue as follows:

- Continue using the CLEAN project to measure air, water, and noise quality in four cities, namely, Colombo, Kandy, Kurunegala and Nuwara Eliya with school children and conduct programs with other stakeholders.
- Develop materials to be used in environmental awareness and for the proposed resource centers in Sri Lanka.

F I N A L V E R S I O N

- Use the Information Technology and Wireless technologies to reach the students and communities.
- Target a wide range of different communities such as vehicle owners, motor mechanics, three wheeler operators and so forth on air, water and noise quality issues.

Expected Results:

- Air and water quality in more than five urban locations characterized by May 2005.
- Number of resource materials that are useful in education and awareness made available for programs by April 2005. Impacts of the awareness programs measured and documented
- Notable environmental best practices adopted by communities documented by August 2005.
- Increased public participation and awareness on air, water and noise quality issues?

Activity 3: Integrated Water Resource Management

Objective: To improve the water quality and improve the efficiency in water supply and use.

Primary Program Areas:

IR1: Improved Environmental Governance

IR2 Improved Urban Environmental Management, Technologies and Resource Efficiency

IR3 Improved Industrial Environmental Management, Technologies and Resource Efficiency

Implementing Partners:

Sri Lanka Partners : National Cleaner Production Center (NCPC), Sri Lanka Tourism Cluster, CEA, ISB, Board of Investment (BOI), National Water Supply and Drainage Board (NWSDB), Sri Lanka Energy Managers Association and Citizen Led Environmental Awareness Network (CLEAN).

International Partners: Alliance to Save Energy, University of Minnesota, IUCN, World Bank, UN International Water Management Institute and UNDP

Background: The continuation of the cease fire, government’s desire to reduce poverty by increasing economic development along with regulatory enforcement, inadequate awareness of health impacts related to environment degradation, and the traditional pressure to “grow now, pay later” may put Sri Lanka in a position to fall victim to the same environmental woes that have plagued a number of nations as they develop. Both public and private sectors need to appreciate and be informed about the benefits of environmental protection to improve the industrial competitiveness. Environmental pollution directly affects the water quality and the signs of pollution are very evident in a number of surface water bodies in Sri Lanka.

US-AEP/Sri Lanka recognizes and has begun to work on a selected set of industrial development obstacles related to solid waste, wastewater and energy and has made progress in promoting cleaner production and energy efficiency programs. In Sri Lanka, there are about 2,300 industries in category of “high polluting.” More than 2,000 service stations in the country discharge untreated or improperly treated wastewater into the public water ways. US-AEP/Sri Lanka is in the process of supporting a number of USAID/Sri Lanka-sponsored industry clusters, namely, the industry clusters for tourism, rubber, coir and ceramic on improving environmental and energy best practices. US-AEP provides support for the National Water Supply and Drainage Board, the GSL owned monopoly for water supply to improve the management and reduce its costs. This year, US-AEP is introducing integrated environmental management on sanitation, solid waste, waste water with the objective of improving water quality and access to clean water by urban communities. As a start, US-AEP will work with the Kelani River basin and one urban lake.

Implementation Actions

A: Kelani River Basin Environmental Initiative

Industrial, agricultural and urban activities in the Kelani River basin directly affect the urban lives in Sri Lanka in a number of ways. Most of the industries (food processing, beverage, brewery, rubber and garment etc.) are located in the Kelani River Basin, primarily due to the availability of water and relatively better infrastructure. Kalani River provides about 120 million gallons a day of drinking water to Greater Colombo. Urban service delivery (i.e.,solid waste and waste water management) of 32 municipalities directly influences the water quality and health of the river. Two industrial parks, namely, the Sethawake and Lindel are located in the upstream of the river with two large export promotion zones located in the lower watershed. GSL implemented a program to move the tannery industry out of the Kelani Basin and has shown keen interest to implement programs that control

industrial discharges. Therefore, an integrated approach is necessary to address the pollution affecting the urban populations as the geographic coverage of the programs may extend beyond the urban boundaries.

The World Bank-assisted Environment Action One Plan project which established mechanisms to charge industries based on the pollution load discharged has ended in September 2004 with a number of recommendations. There is no indication that the Bank will implement a follow-up program soon. Opportunity exists for USAID, USAEP and other donors to help the Government of Sri Lanka, the CEA in particular, to adopt an environmental management system in the Kelani Basin. In FY2004, USAEP mobilized TSSC staff and the fact finding team associated with the CSG grant to Minnesota and Wyoming to evaluate the potential interventions to improve water quality management in the Kelani Basin. In FY 2005, US-AEP plans specific interventions as follows:

- Bring the State of Minnesota program on waste minimization (MnTap) to work with CEA, NCPC and other stakeholders to develop a waste minimization and waste exchange program.
- Collect materials (reports and data) and characterize Kelani River Basin for its water quality and factors (industrial, urban and other) influencing surface water. University of Minnesota and University of Peradeniya land use and water quality groups will work on the data and develop several joint research programs. This work will follow the University of Minnesota work in the Minnesota River Basin.
- Develop the awareness and education programs (e.g. community programs and walk your watershed-type programs) to encourage the conservation of the Kelani River Watershed. The activity will be implemented by the Sri Lanka stakeholders group and the CLEAN project that will mobilize a group of trained University and School volunteers
- Develop the industry-community linkage program to create enabling environment for recognizing and finding solutions to address environmental, economics and social issues associated with the industrial development.
- Develop a model data storage and retrieval system for environmental information after the USEPA approaches such as the Storage and Retrieval (STORET) database.

Expected Results:

- Material exchange system designed and introduced by August 2005.
- Better understanding of impacts on surface water for the Kelani River basin through GIS-based Urban and watershed characterization system to be developed and installed in an internet site by May 2005
- Improved capacity of volunteers (College and School students) to conduct environmental awareness programs. A network of watershed groups, mostly urban, equipped with information and supported by public and private sector agencies by July 2005.
- Effective community and industry participation in environmental governance a system established by August 2005.
- Model data storage and retrieval system for CEA established by August 2005.

B: Pollution prevention in urban surface water bodies

Urban surface water bodies in a number of cities in Sri Lanka have been polluted due to additions of hotel and residential waste water, seepage of sewerage from septic tanks, storm water with oil, fecal matter and other pollutants, discharges from urban solid waste dumps etc. As a result, the lake providing drinking water to Kurunegala, the fastest growing city in Sri Lanka, had to be drained. The lakes in the cities of Kandy, Nuwara Eliya and Anuradhapura are threatened as a result of human-induced water pollution. In order to address these issues, an approach that includes increased awareness, enforcement of regulation, public investment, technology development and transfer and sustainable mechanisms is needed. In FY2005, US-AEP/Sri Lanka will establish at least one model

program around a selected lake, most probably the Kandy Lake. US-AEP's specific interventions include:

- Identify the sources of pollution and summary of available information.
- Establish a stakeholder group and develop a strategy for pollution prevention and clean up that includes technology development, testing and transfer.
- Conduct an awareness campaign and a fund raising effort to ensure sustainability.
- Build the local capacity to undertake similar projects in other cities.

Expected Results:

- Summary of literature, an internet web site and a stakeholder group to address the issue formed by February 2005.
- Trials for pollution control commenced and data collected by May 2005.
- Program in place and operation commenced to restore the urban water body and future management planned defined by September 2005.
- Improved public awareness and understanding on the issue?
- Improved cooperation by different stakeholders?

C: Energy efficiency in water pumping and hotel services

Energy costs account for a considerable share of recurrent costs in water pumping. Studies have shown that implementation of proper energy management practices can save at least 10% to 20% of the energy bill. In the NWSDB it translates to a saving of US\$ 1 million a year. In FY05, US-AEP, in collaboration with the Alliance to Save Energy, plans to work on two key projects, namely, the energy efficiency at the NWSDB and hotel industry. Hotel project is co-ordinated by the USAID/Sri Lanka sponsored tourism cluster and ASE India and the NWSDB project is co-ordinated by the ASE and Sri Lanka Energy Managers Association (SLEMA). Specific activities include:

- Tourist Hotel Association of Sri Lanka and USAID Tourism Cluster to create an energy database for hotels to establish energy consumption norms, share common energy saving opportunities, identify best practice technologies and expertise and identify energy conservation targets
- Collaborate with Orchid Hotel India to transfer energy management best practices to Sri Lanka.
- Conduct a series of energy and water pumping related training by The Energy Research Institute (TERI) and Sri Lanka Energy Managers Association at the NWSDB locations.
- Work with South Asia Regional Initiative on Energy on the establishment of Energy Efficiency Trust Fund that can be used by energy services companies.

Expected Results:

- Development of the energy database and a bench marking system for a selected set (about 30) of Sri Lanka hotels by June 2005.
- Transfer of the management of the database to the tourism cluster to sustain the efforts by August 2005.
- Establish private sector led energy efficiency advisory mechanism/services to the hotel industry by August 2005.
- Building capacity of the engineers and technical officers at the NWSDB and establishment of an "Energy Management Unit" within NWSDB by May 2005.
- Policy changes identified on energy efficiency projects of Alliance to Save Energy adopted by the NWSDB by August 2005.
- Quantification of energy saving at the NWSDB due to USAEP and ASE programs by August 2005.