CASE STUDY
Chemical Accident Prevention and Preparedness Programme Project in Sri Lanka (CAPP-SL)
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Executive Summary

Most of the severe chemical accidents have been due to the failure of not recognising and addressing the range of risks which are susceptible to occur in the chemical industry. In addition, the industry’s ever-present financial pressure to reduce costs has resulted in decreasing expenditure on safety and training. A devastating chemical accident can have a great impact to lives, property and the surrounding environment, which can also potentially affect a national economy.

In 2007, the United Nations Environment Programme (UNEP) launched the Flexible Framework Initiative for addressing Chemical Accident Prevention and Preparedness (CAPP) to improve the capacity of governments, technical institutions, and national experts on how to address the risks of chemical accidents, and help them to develop an appropriate CAPP programme for their respective countries. As part of this initiative, CAPP Programme Projects were initiated by UNEP with interested countries and technical support partners in order to kick start national programmes and/or activities on CAPP.

The project titled as “Chemical Accident Prevention and Preparedness Programme for Sri Lanka” (CAPP-SL) was implemented by the Central Environmental Authority (CEA) of Sri Lanka from July 2012 – November 2013. The United Nations Environment Programme (UNEP) was the Executing Agency and the Asian Disaster Preparedness Center (ADPC) was the Technical Support Partner. The project was funded by the Strategic Approach to International Chemicals Management (SAICM)’s Quick Start Programme Trust Fund.

The case study provides an interesting insight to other countries or organisations who are interested in developing a CAPP Programme via UNEP Flexible Framework Initiative. It captures the CAPP-SL project experience by describing its activities, outcomes, and the way forward for implementation of a CAPP Programme in Sri Lanka. Furthermore, background information on UNEP Flexible Framework Initiative and as well as Sri Lanka’s current situation with respect to chemical accident prevention and preparedness are included. This case study also showcases the achievements and learned lessons or challenges faced during project implementation in Sri Lanka.

The case study highlights the importance of establishing a national multi-stakeholder steering committee (Task Force) for successful implementation of the project. Therefore, the selection of Task Force members is a crucial activity for the national focal agency to ensure that competent and relevant institutions or organisations are appointed. The main task of the Sri Lankan Task Force was to collaboratively assess the current situation of Sri Lanka for CAPP and identify the priorities that need to be addressed for the short and long term during implementation of a CAPP Programme. The establishment of the Task Force has improved inter-agency coordination regarding CAPP in Sri Lanka by enabling an opportunity for relevant stakeholders to work together. The inter-agency coordination has also contributed towards strengthening the political will for a CAPP Programme implementation in the country. All members of the Sri Lankan Task Force have acknowledged that their commitment is required to retain the momentum beyond the project timeline. They have agreed to continue activities in order to lead towards progressive implementation of a comprehensive CAPP Programme in built within the national policy and institutional framework of the country.
1 Introduction

The chemical industry is of strategic importance to the sustainable development of national economies.\(^1\) It produces various products with beneficial uses for the modern society. However, the production, storage, handling, transport, disposal and use of chemicals are susceptible to risks that may lead to accidents which can cause extensive harm to people, the environment, and local or even national economies.\(^2\) Due to rapid growth of the chemical industry, especially in the developing countries, chemicals safety and risk management are often not sufficiently addressed.

The United Nations Environment Programme (UNEP) conducts a number of capacity building activities for improved chemicals management, particularly with respect to prevention of, and preparedness for, chemical accidents. The *Flexible Framework Initiative for Addressing Chemical Accident Prevention and Preparedness* is one of UNEP aforementioned activities, which aims to assist governments in developing, reviewing, revising, and implementing chemical accident prevention and preparedness (CAPP) programmes. Under this Initiative, CAPP Programme implementation projects are organised in individual countries.

The project titled “Chemical Accident Prevention and Preparedness Programme for Sri Lanka” (CAPP-SL) was carried out from July 2012 to November 2013. The national focal point of the CAPP-SL Project was the Central Environmental Authority (CEA) of Sri Lanka. The Project was funded by Strategic Approach to International Chemicals Management (SAICM)’s Quick Start Programme Trust Fund. UNEP was the Executing Agency and Asian Disaster Preparedness Center (ADPC) served as the Technical Support Partner.

The purpose of this Project was to build the capacity of relevant institutions in Sri Lanka to develop systems addressing chemical accident prevention and preparedness. The project consisted of identifying the country’s situation with respect to chemical accident risks, defining the needs and priorities for improved management of chemical accident risks, and building capacity of various stakeholders through training.

2 UNEP Flexible Framework Initiative

The *Flexible Framework Initiative* is part of UNEP continuing work to build capacities and develop technical tools, methodologies and strategic frameworks for improved chemical accident prevention and preparedness, particularly in fast-growing economies and developing countries where rapid industrialisation creates the need to address the increased risks of chemical accidents. The Initiative was established in light of a point of action from the SAICM Global Plan of Action (GPA), which calls for the

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development of collaborative practically-oriented tools for CAPP.

The purposes of the *Flexible Framework Initiative* are to:
- increase countries’ understanding of issues related to chemical accident prevention and preparedness (CAPP);
- improve the capacity of relevant institutions, agencies and experts to address the risks of chemical accidents; and
- help countries to develop and implement an appropriate CAPP Programme.

As part of the Initiative, an Expert Working Group consisting of selected experts in the fields of chemical safety and industrial accident prevention and preparedness was established. The Expert Working Group included representatives from relevant United Nations agencies (UNEP, United Nations Industrial Development Organisation (UNIDO), International Labour Organisation (ILO), United Nations Economic Commission for Europe (UNECE), United Nations Institute for Training and Research (UNITAR), World Health Organisation (WHO), Joint UNEP/Office for the Coordination of Humanitarian Affairs (OCHA) Environment Unit) as well as from the European Commission (DG Environment and the Joint Research Centre, Major Accident Hazards Bureau), the Organisation for Economic Co-operation and Development (OECD), the United States Environmental Protection Agency (US EPA), the Swedish Civil Contingencies Agency (MSB), the Asian Disaster Preparedness Centre (ADPC), selected countries, industrial associations, as well as independent experts.


The *Flexible Framework* focuses on prevention and preparedness of chemical accidents at fixed installations and is designed to help countries establish a CAPP Programme that is appropriate for their particular circumstances, including the level and nature of risks, the available resources, and the legal and cultural context. It is titled as “Flexible Framework” reflecting the fact that it is developed to be used by any country, irrespective of location, size, or level of industrialisation, with the expectation that each country would design its own Programme. Furthermore, it is recognised that many countries will start with a small, limited Programme and expand as experience and resources allow.

Thus, by using the *Flexible Framework Guidance* as a basis for this project, Sri Lanka has focused on those elements that are relevant to its legal, institutional and cultural context and defined its actions based on national priorities, resources, experience and expertise.

To supplement the *Flexible Framework Guidance*, in order to provide further support to CAPP Programme Projects, an *Implementation Support Package* (ISP) was developed in 2012. The ISP includes
guidance and materials, capturing the experience from earlier CAPP projects, to support implementing countries as well as external organisations and experts (Technical Support Partners) helping these countries by providing training or other technical support. The ISP is intended to be used to the extent that it is helpful, adapted to the needs and objectives of each implementing country.

3 Background of Sri Lanka

The key economic sectors in Sri Lanka are agriculture, industry and services. The industry sector contributes about 29% to the GDP. Those companies that use, handle or store chemicals tend to import, rather than produce, chemicals. Production of hazardous chemicals is done in only a few industries including the Ceylon Petroleum Corporation, one of the major producers of hazardous chemicals. Some Board of Investment (BOI) certified companies export chemical substances such as lead ash, lead monoxide and lead oxide. The agriculture sector is involved in importing chemicals including fertilizers, insecticides, herbicides, and fungicides. There are installations where these substances are handled, used and stored. One of the major plans for future chemical industrial development includes a Polyethylene Terephthalate (PET) plant in Hambantota.

Accident case history in Sri Lanka indicates that there have been accidents related to oil spillages and leaks in oil refineries and crude oil storage tanks. Several incidents of fires and explosions have occurred when cutting sealed empty chemical barrels with oxy acetylene welding and while mixing gunpowder in fireworks manufacturing factories. Other accidents experienced in Sri Lanka include chlorine and chemical leaks, chemical fires in the Colombo port, a fire in a boat manufacturing chemical supplier’s installation, and oil and chemical spillage in ships.

There are several government organisations that have responsibilities related to CAPP. The Ceylon Petroleum Corporation have responsibilities and activities related to production, storage, importation, transportation, use, labour safety and fire protection of oil.

The Registrar of Pesticides, Ministry of Health, Ministry of Industry and Commerce, National Authority for Chemical Weapons Convention, Department of Labour, the Board of Investment and the Central Environmental Authority are other national organisations involved in CAPP-related activities. The Ministry of Defence and Urban Development has responsibilities related to commercial explosives.

The legal instruments in Sri Lanka related to CAPP activities are the: National Environmental Act; Factories Ordinance; Control of Pesticides Act; Regulation of Fertilizer Act; Petroleum Ordinance; Ceylon Petroleum Corporation Act; Chemical Weapons Act; Explosives Act; Cosmetics, Devices and Drugs Act; Board of Investment Law; and Mines and Minerals Act. Non-regulatory mechanisms, such as the

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National Safety Awards and National Safety and Health Week, promote improvement of safety in industries.

Non-governmental activities related to CAPP include disposal solutions provided by Holcim-Geocycle, which is part of the multinational company Holcim group, for hazardous wastes and promotion of safer workplace, and protection of environment through safer management of chemicals done by Lanka Responsible Care Council, hosted by the National Cleaner Production Centre. Universities such as the University of Colombo, University of Peradeniya and the University of Moratuwa are engaged in activities such as training programmes and research related to CAPP. Awareness programmes and activities related to CAPP are implemented by governmental as well as non-governmental organisations such as the Disaster Management Centre, National Cleaner Production Centre, Ministry of Industry and Commerce, National Authority for the Implementation of Chemical Weapons Convention and the Central Environmental Authority. The resources available to address chemical accident prevention and preparedness include staff that can be trained and assigned CAPP related responsibilities, as well as relevant equipment and sources of data.

In summary, the data available on the types and quantities of hazardous chemicals show that hazardous chemical installations do exist in Sri Lanka. There are government organisations having some involvement in implementation and enforcement of chemical accident prevention and preparedness related activities. The legal instruments in this country have certain regulations related to CAPP. However, in order to have an effective CAPP Programme in SL, new regulations or legal instrument is needed. The resources currently available are not sufficient to implement a CAPP Programme. Training of staff, sources of funding, equipment and databases related to CAPP are required.

4 Project Initiation

The project was launched through discussions between the Central Environmental Authority (CEA), who is responsible for establishing rules, regulations, and programmes for controlling chemical substances and hazardous wastes in Sri Lanka, and UNEP regarding the possibility for coordinated activities aimed at improving chemical management in Sri Lanka. On-going interaction between CEA and UNEP indicated that both parties shared a commitment to improving CAPP in Sri Lanka.

They recognised that Sri Lanka’s chemical industry is emerging as one of the main industries driving economic growth, since the end of a thirty years long civil war. Therefore, they agreed that this project was timely in order to address the most critical aspect of industrialisation, ensuring sustainable growth, public safety, health and security. Following these discussions between CEA and UNEP, a focal point within CEA was appointed to coordinate activities, and additional national and international partners were contacted to participate in the project.

Asian Disaster Preparedness Center (ADPC) was selected as the Technical Support Partner to support UNEP and CEA with the project implementation. ADPC is a leading regional resource center and works
towards the realization of disaster reduction for safer communities and sustainable development in Asia and the Pacific. ADPC has previously partnered with UNEP for both its pilot projects on CAPP in Cambodia and the Philippines.

The project proposal was approved by the Strategic Approach to International Chemicals Management (SAICM)’s Quick Start Programme Trust Fund for an overall budget of US$ 224,834.

5 Stakeholders Involved

In Sri Lanka, the Central Environmental Authority (CEA) under the Ministry of Environment was the national implementing agency for the project. The focal point within the country was the Director General of the CEA. The project benefited greatly from the support and commitment of Mr. Muthukudaarachchi (Deputy Director General, CEA-environment pollution control unit (EPC)), Dr. Sanjaya Ratnayake (Director, CEA-EPC) and Ms. Nelka Perera (Assistant Director, CEA-EPC). The CEA appointed Prof. Ajith De Alwis (Department of Process & Chemical Engineering, University of Moratuwa) as the National Expert for advisory support and technical advice during the course of the project. CEA also contracted the support of Dr. Manisha Gunasekara (Department of Process & Chemical Engineering, University of Moratuwa) as the National Consultant to provide technical input to the project and to develop project deliverables (the Country Situation Report, Needs Assessment, and Roadmap).

The CEA was supported by a number of national institutions and international partners. UNEP participation was coordinated by Ms. Johanna Suikkanen (CAPP-SL Project Focal Point, UNEP) and Ms. Sanja Ursanic (CAPP-SL Project Coordinator, UNEP) through the Division of Technology, Industry and Economics (DTIE) – Business and Industry Unit, in close partnership with UNEP DTIE Chemicals Branch. The Asian Disaster Preparedness Center (ADPC) provided extensive support in their role as a regional technical partner through the input of Mr. Sisira Kumara (CAPP-SL Project Manager, ADPC) and Ms. Vijitha Vivekanantharajah (Consultant, ADPC). Additionally, the following international experts provided advisory support, developed country-specific training materials and participated as resource persons in inception and training workshops and key Task Force meetings: Mr. Jan Slijpen (Labour Inspectorate, Netherlands), Ms. Amanda Cockton (Health and Safety Executive, United Kingdom) and Mr. Mark Hailwood (Chair of the OECD Working Group on Chemical Accidents, State Institute for Environment (LUBW) Germany) (participating as an independent expert in this project).

Since the Flexible Framework Guidance promotes a multi-stakeholder approach that requires coordination and cooperation between different government authorities and other relevant organisations, a number of other ministries and non-governmental stakeholders also participated in project activities. A multi-stakeholder, multiagency Task Force was established by CEA to deal with CAPP-related issues and drive project activities. The list of organisations that were members of the Task Force is included in Section 6.2: Establishment of Task Force.
6 Project Activities

6.1 Inception Workshop

The project was officially launched through a National Inception Workshop, which was conducted during 16th to 17th January 2013. It was hosted by the CEA, and it was jointly organised by the CEA, UNEP, ADPC and international experts.

The Workshop was attended by representatives from various agencies, institutions, academia, NGOs and the private sector. CEA’s main objectives for the Inception Workshop were as the following:

- Raise awareness on chemical accident prevention and preparedness (CAPP) through the presentation of experiences of certain Asian and European countries in the evolution, development and implementation of CAPP programmes;
- Provide a forum for participants to discuss and raise key issues relevant to chemical accident prevention and preparedness in Sri Lanka, including the main objectives of a potential CAPP Programme in Sri Lanka, as well as possible advantages and obstacles; and
- Establish a multi-stakeholder Task Force through identification of important stakeholders related to chemical accident prevention and preparedness in Sri Lanka.

The Workshop agenda was developed by CEA with assistance from UNEP, ADPC, and international experts. Representatives from partner organisations gave presentations on: the SAICM context for international chemicals management: characteristics, consequences, and examples of chemical accidents; an overview of the Flexible Framework Guidance; and CAPP implementation project activities and expected outcomes. Representatives from CEA and the University of Moratuwa (Department of Chemical and Process Engineering) presented an overview of existing legal systems related to management of hazardous chemicals and the current situation and experience with CAPP in Sri Lanka respectively. Additionally, group discussions and working sessions were held to identify possible objectives of a CAPP Programme in Sri Lanka and the challenges and opportunities associated with its implementation. Potential institutions that need to be included in the multi-stakeholder Task Force were also suggested.
6.2 Establishment of the Task Force

Following the Inception Workshop, CEA established a multi-stakeholder Task Force to allow relevant competent authorities and academia to work together in developing a sustainable system for chemical accident prevention and preparedness in Sri Lanka. The terms of reference of the Task Force mandate are to:

- develop a calendar of project events with key milestones;
- guide the development of the Country Situation Report, Needs Assessment and Roadmap documents (discussed in further detail in the section “Project Reports and Outcomes” below);
- guide, review and support the development of training curricula;
- update past work done by the Government of Sri Lanka to operationalise and implement programmes related to chemical accident prevention and preparedness; and

The following Task Force members, along with assistance from UNEP and ADPC, acted as the main driving force for project activities within the country:

1. Central Environmental Authority
2. Department of Labour
3. Board of Investment (BOI)
4. Ministry of Health
5. Ministry of Industry & Commerce
6. Disaster Management Center
7. Ceylon Petroleum Corporation
8. Ministry of Agriculture
9. Ministry of Defence and Urban development
10. Sri Lanka Customs
11. Department of Motor Traffic
12. Ministry of Economic Development
13. National Cleaner Production Center- Sri Lanka

6.3 Training/Capacity Building

Based on the meetings held by the Task Force and the expectations of the CAPP-SL Project, it was expected to have two training activities to build the capacity of relevant government agencies, private sector representatives and local authorities on the key concepts related to chemical accident prevention and preparedness including elements of a CAPP Programme. The first introductory training was held from 7th – 10th May 2013 in Thailand and was targeted to the national Task Force members. The second training workshop, held from 16th -18th September 2013 in Colombo, Sri Lanka, was targeted to government inspectors and representatives from the chemical industry.

1st Training Workshop

After the end of the CAPP-SL Project, the Task Force is expected to continue playing a major role in working towards implementing the CAPP Programme for Sri Lanka, anchored in policy and institutional capacity. Therefore, it was decided that an introductory training session will be provided to build the capacity of the National Task Force members to develop a national programme for CAPP.

To be most effective, the Task Force recommended that the training be held in a neighbouring country, in particular one that has experience with effective private-public partnerships and well-developed industrial estates with robust safety management systems in place for CAPP. While both India and Thailand were proposed, Thailand was chosen in light of its comparatively better adherence to regulatory enforcement and its strategic approaches. In addition, Thailand provided the additional benefit of having present other stakeholders such as UNEP Regional Office for Asia Pacific, ADPC, Mahidol University, and the Department of Industrial Works. Thailand also has valuable experience in implementing UNEP ‘Awareness and Preparedness of Emergencies at Local Level’ (APELL) Programme in its industrial estates.
The 1st Training Workshop was successfully organised by ADPC with support from UNEP, Thai representatives and CEA. The training curriculum was coordinated by UNEP and its content was developed with appreciated support of the international experts, ADPC, CEA and resource persons from Thailand’s government and non-government organisations.

This Workshop improved the understanding of the following two key elements of the CAPP Programme: role of competent authorities; and requirements of the industry.

Organising this training activity in Thailand proved to be successful with respect to three aspects:

- Valuable experience and lessons learned from Thai resource persons in the implementation of CAPP mechanisms in Thailand and best practices of its chemical industry (site visit to Map Ta Phut Industrial Estate Authority and PTT GC Company, Rayong) were shared with the Sri Lankan participants;

- Regional cooperation on CAPP between the two countries was promoted, due to the following similarities: regional flavour and political interests among the member governments of the region, similar scale of production and industries, supply chain neighbours, and cost effectiveness;

- The dynamics of the Task Force team was improved and the location provided an opportunity for participants to focus their full attention on the training course.
Key recommendations from the International Experts and Thai representatives and the outcomes of the Training Workshop were used as a starting point for the Task Force in executing the next steps of the CAPP-SL Project: Needs Assessment and development of the Roadmap.

2nd Training Workshop

The 2nd Training Workshop was organised by CEA with support from UNEP and ADPC. The training curriculum was coordinated by UNEP and its content was developed with appreciated support of international experts, ADPC, CEA and local resource persons.

This Training Workshop effectively strengthened the capacity of the participants (government inspectors and industry representatives) with respect to key concepts related to CAPP. Specifically it focused on building the knowledge related to requirements of the industry and to CAPP inspections. This Workshop also provided an opportunity for the participating government authorities and industry stakeholders to cooperate and share each other’s valuable experience and knowledge. The site visits to Sapugaskanda Oil Refinery and Paint Factory Site were a valuable experience for all participants and the resource persons, since they were able to observe examples from the Sri Lankan industry of the current situation in terms of CAPP.

6.4 Project Closure and CAPP Programme Launching Workshop

The aim of the Project Closure and CAPP Programme Launching Workshop was to share and review the achieved outputs, lessons learned and the Roadmap for CAPP Programme developed by the Task Force. The Workshop reached a general consensus to further develop and implement the CAPP Programme for Sri Lanka.
The Workshop took place on November 19, 2013 in Colombo, Sri Lanka and the participants include policy makers and technical staff from relevant ministries and departments as well as representatives from academia, industrial sector organisations and other key decision-makers. The Workshop agenda was developed by UNEP with support from ADPC, CEA and international experts. An opening presentation was given by CEA on CAPP-SL Project overview and on the purpose, content and expected outcomes of the Workshop. One of the Task Force members presented past chemical accidents in the country and their impacts to highlight the need for a CAPP Programme in Sri Lanka. This was followed by a briefing by the National Consultant about the achievements and milestones of the Project. UNEP provided an overview of the Flexible Framework Initiative, and its past activities and future plans in Asia Pacific region. Additionally, the Workshop included group work and plenary discussions on lessons learned during the course of the project and endorsement of key priorities for the short and long-term.

As part of the process of reviewing the Roadmap, Sri Lankan stakeholders had an opportunity to address key aspects for the future development and implementation of the CAPP Programme, such as:

1. endorsement of short and long term goals and priorities;
2. assignment of role and responsibilities;
3. an estimation of resources needed;
4. CAPP-related performance indicators; and
5. steps for the way forward;

7 Project Outcomes

As part of the project, three key deliverables - a Country Situation Report, a Needs Assessment, and a Roadmap - were prepared by the National Consultant appointed by CEA with periodic reviews of successive drafts and input from the Task Force members, as well as technical support by ADPC, UNEP and the international experts involved in the project.

The Country Situation Report presents an overview of the nature and extent of chemical accident risks within Sri Lanka, as well as the existing legal structures and responsibilities related to the management of chemical accident risks. It was prepared by gathering information from consultations, stakeholder records, media reports, and other sources. The goal of the Country Situation Report was to develop an overview of Sri Lanka’s situation with respect to chemical hazards in order to identify priorities for CAPP Programme implementation.

The Needs Assessment summarises the main requirements and priorities of Sri Lanka to improve its management of chemical accident risks. It includes a review of the status of CAPP Programme elements in Sri Lanka, resource and capacity building needs for CAPP Programme development, possible sources of funding, and recommendations. The Needs Assessment can be used as a tool to determine which possible elements are the most applicable and valuable in Sri Lanka.
The Roadmap provides an outline of the necessary steps for the implementation of elements of a CAPP Programme to address the priorities identified in the Needs Assessment. It includes a schedule of milestones for development and implementation of a CAPP Programme, as well as a summary of high-priority actions and needs that need to be addressed in the immediate future.

8 Project Accomplishments

The overall objective of the Project was to enhance the capacity of relevant institutions in Sri Lanka to manage and respond to chemical accident risks, with a long-term view of developing a comprehensive CAPP Programme building upon existing legislation. To meet this objective, a multi-stakeholder Task Force was created to serve as the main driving force for Project activities and to allow for continuing activities related to CAPP beyond the lifetime of the Project. Monthly Task Force meetings were held over the course of the Project, which contributed to improved coordination and communication among government agencies, key industrial representatives, and other key stakeholders. To sustain Project activities in the future, the Task Force is expected to be made into an official entity through a public policy statement (cabinet paper approval) endorsing its terms of reference.

In addition to the establishment of a Task Force, the deliverables developed as part of the project will be useful towards addressing chemical accident risks within the country. The Country Situation Report incorporated data and information from a wide variety of sources into one document, creating a valuable resource for future activities related to chemical accidents or general management of hazardous chemicals. The Needs Assessment and Roadmap outline the steps that Sri Lanka should take to implement a CAPP Programme, providing a clear framework and timeline for future activities.

The capacity building training activities resulted in the improved awareness and ability of authorities, industries and other stakeholders in Sri Lanka to understand key elements required for chemical accident prevention and preparedness. Industrial site visits were successfully organised and conducted as part of the training curriculum for both training workshops. These site visits provided a beneficial opportunity for the participants to witness examples of best practices and also to identify any missing elements regarding safety management systems and risk control measures in place, which prevent or mitigate consequences of chemical accidents.

UNEP’s Flexible Framework Guidance document has been translated into Sri Lanka’s local languages (Sinhala and Tamil). These translated versions will enable wider access of the document by all stakeholders in Sri Lanka, and facilitate awareness raising about the importance of addressing prevention of, and preparedness for, chemical accidents.

At the initial stage of the Project, a cabinet paper (mandate) was submitted by the Ministry of Environment, and was successfully approved by the Cabinet of Ministers for official recognition of the CAPP-SL project and approval for implementation by the Central Environmental Authority. The presence of the Hon. Minister of Environment, Mr. Susil Premajayantha, at the opening ceremony of 2nd
Training Workshop further strengthened the political commitment, which is a key success factor towards sustaining the CAPP Programme development in Sri Lanka.

9 Key Priorities

In developing a Roadmap for CAPP Programme implementation, the Task Force carried out a Needs Assessment to identify the gaps in the existing system for CAPP in Sri Lanka. A comparison between the CAPP Programme elements outlined in UNEP Flexible Framework Guidance and those existing mechanisms in Sri Lanka showed that certain aspects in each element were already in place. However, it was acknowledged that the existing legal framework and their related mechanisms for CAPP are not yet robust enough to meet the requirements of the growing chemical industry in Sri Lanka. Certain needs which were identified as key priorities are listed below:

- The scope of the CAPP Programme needs to be defined, in a way that is relevant to Sri Lankan context. Subsequently, the improvement or development of policies and legal instruments to address different aspects of CAPP need to be addressed. In addition, enforcement measures indicated in these policies and legal instruments must be strengthened.

- A file-sharing database containing information on enterprises (hazardous installations) that handle hazardous substances in the country needs to be developed.

- A uniform system for classification and labelling of chemical substances needs to be adopted as part of the national legislation e.g. UN Globally Harmonised System (GHS).

- Development of an effective inspection programme, with competent inspectors to check CAPP installations for compliance with requirements and ensure proper safety practices has been identified as another key priority.

- Siting and land-use planning of CAPP facilities in safe locations (industrial zones) to minimise adverse effects to the community in the event of an accident need to be addressed.

- Activities related to CAPP in Sri Lanka are carried out by several authorities using the infrastructure available in their respective authorities. In order to implement a CAPP Programme, the following types of infrastructure will be required with an effective mechanism for inter-agency coordination:
  - Infrastructure to manage information systems required for a CAPP Programme;
  - Infrastructure to facilitate inspections of hazardous installations (preferably joint inspections by key-competent authorities);
  - Infrastructure for siting and land-use planning for hazardous installations;
  - Infrastructure to ensure on-site and off-site preparedness for chemical accidents at local level.
• Further training and capacity building programmes need to be provided for personnel in competent authorities and also in industry. The priority will be placed on “training of trainers” to increase training capabilities within the country. Subsequently, the institutional or organisational structure for CAPP Programme implementation must be strengthened.

• A coordination mechanism for monitoring progress and continuous improvement (plan-do-check-act cycle) is required in order to implement and maintain a robust CAPP Programme.

10 Lessons Learned

Project participants have identified the following lessons learned from the CAPP-SL Project that can be considered when conducting country-level implementation projects in the future. Since the Flexible Framework Guidance and its Implementation Support Package is intended to be used in countries with varying degrees of industrial development and chemical accident risks, the Project in Sri Lanka provides important insights into the success factors and obstacles that can arise when implementing a CAPP Programme in a country with certain existing mechanisms for management of chemical accident risks and a rapidly developing industry.

Task Force - After careful consideration of various institutions’ relevancy towards CAPP in Sri Lanka, the CEA selectively chose fourteen key competent institutions as Task Force members to cooperate and actively support achieving the long term vision for establishment of a robust CAPP Programme in Sri Lanka. However, the coordination of such a large group posed certain challenges, which required consideration of their obligations and work duties other than their support for the CAPP-SL Project.

As a recommendation, the efficiency of this multi-stakeholder committee could have been improved if a sub-working group was established to provide more support to CEA and the National Consultant in delivering the project outcomes (Country Situation Report, Needs Assessment and Roadmap), while the rest of the Task Force provides advisory support during the monthly Task Force meetings.

In addition, it would have been useful to consider including a few key private sector representatives as part of the Task Force to incorporate their valuable input for the development of the Country Situation Report and Roadmap.

In general, when identifying the representatives to participate in the Task Force, care should be taken to choose individuals who have the appropriate responsibilities in their respective institutions, to facilitate the implementation of Task Force decisions.

Furthermore, the members of the Task Force, and any other officials assigned to a CAPP Programme Project should be allocated the time necessary to complete the tasks (i.e. being relieved from some of
their regular duties). It cannot be expected that officials/employees can undertake the tasks in addition to an already full-time jobs.

**1st Training Workshop** - Within the allocated project budget, the 1st Training Workshop was successfully conducted in Thailand. This promoted south-south cooperation by enabling representatives of Thailand authorities and industry to participate, and share their country’s CAPP-related experience and lessons learned with the Sri Lankan Task Force.

Since the Training Workshop was held as a residential course, there were many opportunities for trainers and participants to ask questions, discuss concerns, and clarify issues that were presented during the Workshop sessions. This created a positive and cooperative dynamic for the training that greatly contributed to its success. Participants also identified this interaction as something that should be further promoted in future CAPP Project training activities.

Due to time constraints during the site visit to PTT GC Company, the site representatives were unable to provide a walking tour of their refinery site, which limited the learning experience of the Task Force to gain a better understanding of CAPP requirements of industry in practice. In order to prevent the same situation occurring for the 2nd Training Workshop, communication with the site visit representatives was improved and a Terms of Reference for each site was prepared to ensure that the time allocation and agenda for site visits will meet the expected outcomes of the training curriculum.

**2nd Training Workshop** - As recommended by the Task force, government inspectors representing their competent authorities and industry representatives with a technical background were selectively invited as participants for this Workshop. The training curriculum was prepared in order to allow both groups of participants to gain awareness of each other’s responsibilities and requirements for CAPP and also to share their experiences. Although this was a good opportunity to train both groups together, the time
schedule was tight to deliver all training modules in 2.5 days. This was also highlighted in the Workshop evaluation questionnaires, which reflected the fact that insufficient time was spent on the technical modules for better understanding of its contents. Certain module sessions had to be skipped due to time constraints. Therefore, for a short period (2.5 days) of time, it would have been better suited to narrow the target audience to participants with similar responsibilities, and to focus on delivering a thorough training on one of the CAPP elements with site visits. For example, inspectors on role of competent authorities (inspections) or industry representatives on requirements of industry (risk management)).

Site Visits (Training Workshops) - The organised site visits during both training workshops were acknowledged by all the participants as a good learning experience that showed real conditions at an industrial facility. It was suggested that similar types of site visits should be included in future training programmes, to the extent possible. It was also noted that an effort should be made to achieve the highest standard of safety during site visits by encouraging the use of personal protective equipment, both as an effort to prevent any harm to participants but also as a lesson on how to conduct inspections safely.
CASE STUDY: CHEMICAL ACCIDENT PREVENTION AND PREPAREDNESS PROGRAMME OF SRI LANKA

Sharing of Experience from Other International Projects and Activities in Sri Lanka related to CAPP -

During the course of the Project, there were opportunities to share experience, and to raise awareness of other CAPP-related projects and activities (on-going and past) in Sri Lanka, by the respective representatives, for example:

- On-going activities on Responsible Care and UNEP’s Responsible Production by the National Cleaner Production Center, Sri Lanka (Inception Workshop presentation, Task Force meeting discussion);
- UNEP’s APELL project’s experience and achievements by CEA’s project representative (Task Force meeting presentation);
- Technical assistance to strengthening national capacities for sound management of priority industrial chemicals - SAICM Project jointly carried out by CEA and Ministry of Health (Task Force meeting presentation);
- Activities by the National Authority for the Implementation of Chemical Weapons Convention regarding industrial chemicals safety (Inception Workshop presentation, Task Force meeting discussion).

The above information was particularly useful for the Task Force and National Consultant during the development of the Country Situation Report. During the next phases of the CAPP Programme, cooperation with the above-mentioned activities/representatives should be considered in order to ensure that all relevant activities and past experience are captured and that redundant, overlapping, or conflicting programmes are avoided.

Prevention/preparedness vs. Response - Regarding chemical accidents in Sri Lanka, it was noticed by the International Experts that the focus of the country’s stakeholders has been mostly on response planning for chemical accidents and repressive risk control measures, used to control/mitigate a risk in a hazardous installation after it occurs, to mitigate such consequences in the event of an accident. Therefore, this Project enabled participants to distinguish between prevention/preparedness and response to chemical accidents. In addition, the importance of process safety, which deals with safety of
process operations taking place at a hazardous installation, over occupational safety, which is about is about the safety of people at work, towards prevention of chemical accidents was highlighted during the Inception and Training Workshops. Hence it is important to ensure that the above-mentioned key concepts are well understood by other country stakeholders in future CAPP Projects.

**Sustainability of the CAPP Programme** it is extremely valuable to have a "champion" for the CAPP Programme Project and subsequent activities - someone willing to do what it takes to help make sure that activities are being carried out in a timely way and who is willing to find solutions when difficulties arise.

In addition, it can be extremely valuable to involve national experts in the development and implementation of CAPP Programmes.

Lastly, the way forward prospects of the CAPP Project in a country must be considered from its initial stage to ensure sustainability of the CAPP Programme particularly regarding political commitment for its continuation beyond the Project’s timeline. With regard to the CAPP-SL Project, this key message was addressed by the International Experts during the Task Force meeting which took place after the 1st Training Workshop in Thailand. This provided the Task Force with enough time within the Project timeline, in order to identify the next steps with respect to development of the CAPP Programme in Sri Lanka.

### 11 The Way Forward for CAPP Programme – Sri Lanka

The overall vision of the CAPP Programme in Sri Lanka was specified in the Roadmap as: safe use of chemicals for enhanced quality of life in a zero incident environment. Additionally, the following overall goals for chemical accident prevention and preparedness in the country were identified:

- governance on CAPP should be supported by appropriate legislation, resources, infrastructure and programmes;
- well-functioning management systems for CAPP should be in place for hazardous installations; and
- appropriate mechanisms for effective on-site and off-site coordination related to preparedness for chemical accidents between operators of hazardous installations, concerned authorities, and expert agencies should be in place.

The Task Force identified the following next steps to build upon existing activities and structures to sustain the CAPP Programme implementation, based on availability of funding:

- The Project recognised the benefit of inter-agency coordination (Task Force), the resulting dialogue and the spirit of trust that was established through periodic discussions and joint decision making. Therefore, the Task Force mandate will be extended beyond the life of the
Project through a Cabinet Approval. On successfully receiving the Cabinet Approval, the Task Force agreed to continue their monthly meetings to maintain momentum for CAPP Programme implementation.

- The Central Environmental Authority will be considered as the focal agency in Sri Lanka for coordination of overall future activities of the CAPP Programme. As a next step, the Task Force agreed to establish a coordination (technical) unit at CEA to implement and monitor overall activities of the CAPP Programme.

- In the short term, the preparation and activities for defining the scope for the CAPP Programme and adoption of Globally Harmonised System (GHS) for classification and labelling of chemicals will be considered as the way forward to initiate the implementation of the roadmap.

In conclusion, the above mentioned achievements and activities of the Project have effectively contributed towards providing strategic direction to relevant stakeholders and the Government of Sri Lanka in order to reduce the likelihood of chemical accidents and minimise any impacts on people, communities, the environment and property, should an accident occur. The Project benefited greatly by recognising and building upon Sri Lanka’s existing legislation and initiatives related to managing chemical hazards and preparedness for chemical accidents. However, it must be emphasised that the focus in Sri Lanka should shift from response to prevention and/or preparedness of chemical accidents.