

# PROJECT DOCUMENT 9

## PORTS AND TERMINALS

<b>TITLE</b>	Emergency and Oil Spill Response in Ports and Terminals
<b>PROJECT TYPE</b>	National with Cross-Border Impacts
<b>COUNTRY</b>	Lao PDR
<b>DURATION</b>	2 years

### ABSTRACT

Navigation of waterways has improved and Lao PDR already has more than 29 river ports that have been built to ensure loading and discharging between vessels and trucks. With growing demand for river transport, the storage and handling of dangerous goods is also expected to grow. Dangerous goods transported are currently limited to fuel products. Growing demand will result in the construction of new ports to store and handle these products. If not carefully managed, the growing demand for storing and handling of dangerous goods will pose a serious threat to public health, welfare, safety and the environment.

Although much improvement has been made in preventive measures, there will never be a guarantee that a major incident will not occur. It is therefore essential that Lao ports and terminals handling dangerous goods and oil products have in place effective mitigation measures in case of an emergency. Lao ports should have an effective Emergency Response Plan (ERP) containing documented emergency procedures, organizational roles/responsibilities and facilities to ensure the port or terminal is capable of effectively managing an incident.

The project will address the existing legal situation, draft guidelines to improve emergency and/or oil spill response, train facility personnel, prepare reporting procedures for incidents, address financial responsibility, provide safety requirements and propose minimum emergency and oil spill equipment. The project will look at strengthening cross-border cooperation with Thailand.

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# ABBREVIATIONS

ATM	ASEAN Transport Ministers Meeting
ERP	Emergency Response Plan
MRC	Mekong River Commission
PPE	Personal Protective Equipment
SCBA	Self-Contained Breathing Apparatus
VTS	Vessel Traffic Services

# DEFINITIONS

## EMERGENCY PROCEDURES

Emergency procedures refer to a plan of actions to be conducted in a certain order or manner in response to an emergency.

## EVIDENCE OF FINANCIAL RESPONSIBILITY

Owners and operators of ports and terminals handling dangerous goods need to demonstrate that they have the financial resources to pay for the costs of corrective action and third-party compensation resulting from an accident /oil spill.

## MITIGATION MEASURES

Mitigation measures are intended to reduce the severity of the consequences of an incident/accident. These measures are taken after an incident or emergency has occurred. Examples include fire suppression systems, fire detection systems and emergency response plans.

## PORT

For the purpose of this document a port refers to any place on a waterway with loading, discharging, and/or transfer and storage facilities for solid dangerous goods in bulk or packaged dangerous goods.

## PREVENTIVE MEASURES

Preventive measures are intended to remove the cause of incidents/accidents or reduce the likelihood/frequency of an incident occurring. These measures are taken to prevent an incident, emergency or problem from occurring. Examples include safety relief valves, tank overfill protection and safe work practices.

## RESUSCITATION EQUIPMENT

Resuscitation equipment refers to respiratory assistance devices such as bag-valve masks, oxygen demand valve resuscitators, pocket masks and other ventilation devices designed to provide artificial respiration or assist with ventilation of a patient.

## SELF-CONTAINED BREATHING APPARATUS

A Self Contained Breathing Apparatus (SCBA) is a device worn by rescue workers, firefighters and others to provide breathable air where there is a threat of toxic fumes or an oxygen-deficient atmosphere. The term "self-contained" means that the breathing set is not dependent on a remote supply (e.g., through a long hose). An SCBA set typically has three main components: a high-pressure tank (e.g., 2,200 psi to 4,500 psi), a pressure regulator and an inhalation connection (mouthpiece, mouth mask or face mask) connected together and mounted to a carrying frame.

## TERMINAL

For the purpose of this document a terminal refers to any place on a waterway with loading, discharging transfer or storage facilities for liquid dangerous goods in bulk.

# 1 BACKGROUND AND RATIONALE

Although much improvement has been made in preventive measures, there will never be a guarantee that a major incident will not occur. It is essential for ports and terminals handling dangerous goods and oil products in Lao PDR to have in place effective mitigation measures in case of emergency. Lao ports should have an effective Emergency Response Plan (ERP) containing documented emergency procedures, organizational roles/responsibilities and facilities to ensure the port or terminal is capable of effectively managing an incident.

The main objective of an Emergency Response Plan and Oil Spill Response Plan is to protect people, minimize damage to property and the environment and reduce disruption to business operations in the event of an emergency.

## 1.1 NATIONAL LEGISLATION

### 1.1.1 Environmental Protection Law, 17 January, 2013

#### **Part II, Chapter 1: Prevention of Environmental Degradation**

**Article 5**, Basic Principles of Environmental Protection reads:

*“The basic principles of environmental protection are:*

*... 4. Whoever causes damage to the environment is liable under the laws for such damage.”*

#### **Part III, Chapter 3: Preventing and Countering Disasters**

**Article 17**, Disasters, reads:

*“Disasters are phenomena or events caused by nature or humans that affect the health, life and property of the people, and the environment. Disasters include floods, droughts, fires, land slides and erosion, insect infestation, epidemics, earthquakes, oil spills or others.”*

**Article 19**, National Disaster Prevention Committee, reads:

*“The government establishes a National Disaster Prevention Committee. The National Disaster Prevention Committee shall cooperate with agencies and concerned local administrations in areas where disasters will occur, are occurring or have occurred, in order to develop plans and determine measures to prevent and counter disasters, and to restore the area suffering from such disasters. At the same time they shall regularly monitor vulnerable areas or locations in anticipation of future disasters.”*

#### **Part VI, Chapter 2: Restoration of the Environment**

**Article 28**, Restoration of Areas Destroyed by Disasters, reads:

*“Any person or organisation engaged in production, business, services or other operation that cause disaster is obligated to remediate the damage and to restore the affected area under the supervision of the local administration or the concerned sectoral agency.”*

## 1.1.2 Nineteenth ASEAN Transport Ministers Meeting

The Nineteenth ASEAN Transport Ministers Meeting (ATM) was held on 19 December 2013 in Pakxe, Champassak Province, Lao PDR. HE Mr Sommad Pholsena, the Lao Minister of Public Works and Transport, chaired the meeting. Under the section to strengthen ASEAN Maritime Cooperation, the Joint Ministerial Statement reads:

*“The Ministers recognised the importance of effective preparation for and response to oil pollution incidents at the national, sub-regional and regional levels to minimise the damage from an oil spill.”*

## 1.2 EMERGENCY RESPONSE

It is essential for Lao ports to have an effective Emergency Response Plan (ERP) containing documented emergency procedures, organizational roles/responsibilities and facilities to ensure the port or terminal is capable of effectively managing an incident. Preparing for emergency situations greatly reduces the risk of injury, illness, and fatalities, and may limit the damage done to infrastructure, the surrounding environment and communities. Emergency planning and frequently rehearsed emergency procedures will assist the internal emergency response personnel of ports and terminals to respond quickly and effectively to an emergency. In general, the Emergency Response Plan should address:

- all possible types of emergencies that can be envisaged in the context of particular activities at the port or terminal such as fire/explosion, grounding within port limits, collision of vessels/road vehicles, natural disasters, acts of terrorism, medical emergency, gaseous release;
- use of emergency equipment such as firefighting equipment, self-contained breathing apparatus (SCBA), resuscitation equipment and stretchers;
- manpower necessary to initiate and sustain the response plan at all times; and
- training and emergency response exercises.

### 1.2.1 Emergency Response Plan

An Emergency Response Plan (ERP) should contain the following components and procedures:

#### 1.2.1.1 Preparation

The Emergency Response Plan shall cover all aspects of actions to be taken in the event of an emergency. The plan shall be developed in close cooperation with the port authority, fire brigade, police and other emergency services. The plan shall include:

- Action to be taken by those at the location of the emergency to raise the alarm;
- Initial action to contain and overcome the incident;
- Procedures to be followed in mobilizing the resources of the terminal;
- Evacuation procedures;
- Assembly points;
- Emergency organization including roles and responsibilities;
- Communication systems;
- Emergency control centers; and
- Inventory and location of emergency equipment.

Once the emergency plan is formulated, it shall be properly documented in an Emergency Procedures Manual and be made available to all personnel working at the port.

### 1.2.1.2 Control

The Emergency Response Plan shall specify:

- A list of the person or persons who have the overall responsibility for dealing with an emergency, listed in order of priority;
- The role and responsibility of all personnel within the terminal to contain and control the emergency; and
- The location of the designated emergency control center that will be used by key personnel to coordinate the emergency response activities. The control center shall be located at a central point, not adjacent to likely hazardous areas, and be fitted with appropriate emergency and communications equipment.

### 1.2.1.3 Communication and Alarms

The Emergency Response Plan must include:

- A description of the alarm system and how it will be operated;
- Full contact details, both during and outside office hours, for those inside and outside the organization (fire brigade, police and emergency services) which must be called in case of emergency;
- A reliable communication system for dealing successfully with an emergency situation. A suitable communication system shall provide a link with all necessary contacts both inside and outside the terminal; and
- Keeping the emergency response team free from communications requirements with other parties not involved in handling the emergency. A dedicated person shall be appointed to handle central communications, press and public relations.

### 1.2.1.4 Site Plan and Maps

A detailed map of the facility and surrounding area shall include plans showing firefighting and emergency equipment, major facilities and road access. These shall be up to date and readily available.

### 1.2.1.5 Access to Equipment

All emergency equipment shall be readily accessible and kept free of obstructions at all times.

### 1.2.1.6 Road Traffic Movement and Control

The Emergency Response Plan shall specify that:

- Roadways in the terminal approaches and areas in the way of jetty heads shall be kept free of obstructions at all times; and

- During an emergency, traffic into the terminal or onto the berth should be strictly restricted to those vehicles and people required to deal with the emergency. Limitations on vehicle weights shall be taken into account before emergency vehicles access jetty areas.

### 1.2.1.7 Outside Services

The terminal emergency plan shall make the best possible use of external services. The success in responding to an emergency may depend on the cooperation from third parties including:

- Port authorities, Vessel Traffic Service (VTS) control center, police and fire service;
- Pilots;
- Rescue launches; and
- Medical facilities.

### 1.2.1.8 Training for emergencies

All personnel shall receive emergency response training that addresses:

- Individual roles and responsibilities;
- Potential threats hazards, and protective actions;
- Notification, warning, and communications procedures;
- Emergency response procedures;
- Evacuation and shelter procedures; and
- Location and use of common emergency equipment.

## 1.3 OIL SPILL RESPONSE

For ports and terminals handling oil products, an oil spill can cause operational disruptions, personal injury, and socio-economic and environmental impacts of varying degrees of severity. Spills can happen on land or water, at any time of day or night, and in any weather. The consequences of these spills are directly associated with the characteristics and quantities of product involved, with individual features and sensitivities of the environments affected and/or threatened. When oil is released into the environment, it is exposed to natural weathering (spreading, evaporating of light fractions, dispersing, sedimentation and emulsification). In the event of an oil spill, the most important factor is time: rapid and timely action will reduce the extent of a spill and damage to the environment. The faster the response can be implemented, the lower the potential damage to the surrounding areas. The speed and quality of the response depends principally on the degree of preparedness. A well-prepared oil spill contingency plan is therefore the key to a successful response. Effective oil spill preparedness and response can only be possible if suitable oil spill equipment is readily available, well maintained and all personnel involved are sufficiently trained in the correct use of the equipment.

### 1.3.1 Oil Spill Response Plan

The Oil Spill Response Plan should be developed with the view of providing an immediate response to a river pollution incident so that the incident is controllable and does not seriously damage lives, properties and the environment. The Plan should contain:

### 1.3.1.1 Preamble/Introduction

- a. Background:
  - Information of the operator of the port (name, address, contact information, etc.);
  - Type and characteristics of dangerous goods handled;
  - Cargo handling equipment; and
  - Other relevant information.
- b. Objectives of the Action Plan.
- c. Areas of Responsibility:
  - A clear description of the area that falls under the responsibility of the operator; and
  - Relevant environmental information such as water depth, river bottom, tide, current and wind direction and force, specially protected coastal resources;
- d. Risk Analysis
  - Quantity, frequency and type of dangerous goods handled; and
  - Possible damage to human life, property and the environment in case of a spill.

### 1.3.1.2 Organization and Duties/Responsibilities

- a. Responsible Persons Appointed:
  - Description of duties and responsibilities; and
  - Organizational chart.
- b. Alternatives for:
  - Combating Marine Pollution;
  - Control of situations;
  - Assistance to injured persons;
  - Control of areas;
  - Evacuation of people in the vicinity (if necessary);
  - Medical care of injured staff; and
  - Compilation of all relevant expenses.
- c. Logistics Plan:
  - Request for assistance from other authorities/organizations and the joint work plan.
- d. Training and Exercise Plan:
  - Regular training program or joint exercises at least once a year.

### 1.3.1.3 Operations

- a. Follow-Up and Evaluation of the Pollution Movement.
- b. Guidelines Coordination with Local and Central Authorities.
- c. Contact Details of Relevant Local and Central Authorities.

d. Method and Equipment for Combating the Spill.

#### 1.3.1.4 Report and communication

a. Preliminary Notification of Emergency Incidents:

- Contact details of parties to be notified; and
- Emergency or situation report system to responsible authorities.

b. Report Format.

c. Summary Report of the Incident:

- This should be submitted to the relevant authority whenever an incident occurs.

#### 1.3.1.5 Administrative and Supporting Work

a. Expenditure Indicating a Budget Reserved for the Operation.

b. Compilation of Evidence for Expenditure and Damage.

c. A Person or Group of Persons Appointed to Collect Evidence for Expenditure and Damages to be used as Claim for Compensation.

d. Revision of the Action Plan.

e. A Person or a Group of Persons Appointed to Collect and Analyze Information Relating to the Incident to Prepare Lessons Learned and Subsequent Revision of the Plan.

#### 1.3.1.6 Annexes

a. Map Illustrating Areas of Responsibilities (see Section 1.c.).

b. Map Illustrating High-Risk Areas and Protected Areas.

c. Communication Chart.

d. Information on Environment, Hydrography, Hydrology and Other Relevant Information.

e. List of Parties Concerned.

f. List of Relevant Authorities and Experts/Specialists.

g. List of Providers of Necessary Services such as Rental Cars, Motor Boats, Labor, Materials and Food.

It is difficult to plan for a spill when the size is not known. The table below shows proportions used as a rule of the thumb for many years to determine the maximum credible spill size<sup>1</sup>.

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<sup>1</sup><http://www.oilspillsolutions.org/planning.htm>

Source of Spill	Maximum Credible Spill Size
Tanker	50 percent of largest tank
Barge	50 percent of largest tank
Tank Truck	100 percent of largest truck
Rail Car	50 percent of rail cars
Pipeline Rupture	6 hours – 25 percent of maximum flow + drainage
Pipeline Pinhole	2 percent of maximum flow for 4 days
Storage Tank Rupture	50 percent of largest tank
Material Transfer	50 percent of maximum flow for 1 hour
Process Unit	Throughput for 8 hours

## 2 PRIORITY, PROJECT AREA AND TARGET GROUP(S)

### 2.1 PRIORITY

The Risk Analysis of the Carriage, Handling and Storage of Dangerous Goods along the Mekong River (Volume I) concluded that there was a clear need to establish Emergency and Oil Spill Response in Ports and Terminals handling dangerous goods. After reviewing the Recommendations (Volume II), during the Final Regional Workshop in Bangkok in January 2012, the Lao PDR National Working Group decided to give the project “very high” priority.

### 2.2 PROJECT AREA

The project is categorized as a National Project with Cross-Border Impacts and will cover all public and private ports and terminals along the Lao PDR stretches of the river. This means that it shall be implemented on a national basis by the appointed Implementing Agency the Department of Waterways under the Ministry of Public Works and Transport. However, as most ports and terminals along the LAO PDR stretches of the Mekong are close to the border with Thailand, cross border cooperation in case of an emergency or oil spill should be addressed.

### 2.3 TARGET GROUP

The main focus will be the ports and terminal facilities along the LAO PDR stretches on the River, however smaller fuelling stations and all other landing stages where petroleum products (or other dangerous goods) are handled or stored should also establish an Emergency and Oil spill Response Plan.

### 3 OBJECTIVES

*To reduce the impact on the aquatic environment of the Mekong River system, protect human lives and limit damage to property by establishing and implementing an effective emergency and oil spill response plan at local, national and cross-border levels.*

**Note:**

Apart from combating possible fire and explosion, an Emergency Response Plan can also include an Oil Spill Response Plan (depending on the volume of oil products handled). The ERP should set in motion the necessary actions to minimize the emergency or spillage of oil and mitigate the effects. This shall be achieved by:

- preparing and implementing a local and national emergency response plan and/or oil spill response plan;
- training staff and relevant authorities;
- making oil spill equipment available at local and national levels; and
- establishing cross-border cooperation.

## 4 OUTPUTS

1. Regulations and guidelines on emergency response and oil spill management reviewed, drafted, and approved by the competent authority(ies).
2. Institutional arrangements for ports and terminals at the national level for emergency and oil spill response management analyzed and recommendations provided.
3. Recommendations on minimum equipment requirements for emergency response and oil spill equipment at local and national levels provided.
4. Two pilot projects regarding preparation and implementation of contingency plans for dangerous goods management, including training and exercises, prepared and implemented.
5. Cross-border cooperation on emergency and oil spill response management strengthened.

## 5 ACTIVITIES

<b>Output 1</b>	<b><i>Regulations and guidelines on emergency response and oil spill management reviewed, drafted and approved by the competent authority(ies)</i></b>
	In close cooperation with the Competent Authority:
<u>Activity 1.1</u>	Prepare minimum requirements regarding emergency response (Chemical spillages, collisions, groundings, oil spill, fire and explosion).
<u>Activity 1.2</u>	Provide recommendations for ports and terminals handling dangerous goods on how to improve or develop an emergency response/oil spill response plan in case of non-compliance with existing regulations.
<u>Activity 1.3</u>	Determine minimum requirements for training emergency response teams and testing emergency systems, equipment and procedures at ports and terminals handling dangerous goods and at the national level.
<u>Activity 1.4</u>	Develop emergency and oil spill reporting and notification requirements.
<u>Activity 1.5</u>	Establish requirements of “evidence of financial responsibility” for owners/operators of ports and terminals handling dangerous goods and oil products.
<u>Activity 1.6</u>	Present and discuss above requirements with relevant stakeholders at a national workshop.
<b>Output 2</b>	<b><i>Institutional arrangements for ports and terminals at national level for emergency and oil spill response management analysed and recommendations provided</i></b>
<u>Activity 2.1</u>	Access all ports and terminals handling dangerous goods and or oil products regarding their status/level of emergency and oil spill response and verify compliance with national regulations.
<u>Activity 2.2</u>	Establish a system at the Competent Authority to receive and approve the emergency response and/or oil spill response plans prepared by ports and terminals handling dangerous goods.
<u>Activity 2.3</u>	<p>Prepare a standard training and exercise program for all facility staff involved in the emergency response or oil spill response plan to be used at ports and terminals handling dangerous goods. Such a program shall include:</p> <ul style="list-style-type: none"> <li>▪ <i>correct use of available emergency equipment, including initial equipment familiarization, operating principles and techniques and equipment deployment;</i></li> <li>▪ <i>transfer of dangerous goods away from the emergency;</i></li> <li>▪ <i>fire isolation;</i></li> <li>▪ <i>correct use of Personal Protective Equipment (PPE);</i></li> <li>▪ <i>coordinating operations with outside services;</i></li> <li>▪ <i>rescue, including training for selected personnel in life-saving from water;</i></li> </ul>

- *spill containment and clean-up; and*
- *advanced training to ensure that the level of knowledge is maintained and enhanced.*

<b>Output 3</b>	<b><i>Recommendations on minimum equipment requirements for emergency response and oil spill equipment at local and national level provided</i></b>
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- Activity 3.1 Determine minimum equipment requirements for emergency and oil spill responses for ports and terminals (liaise with Activities 1.1 and 2.1)
- Activity 3.2 Assist the Competent Authority to identify ports and terminals not complying with the equipment requirements determined by the Competent Authority and prepare a plan for ports and terminals to comply
- Activity 3.3 Assist the Competent Authority to make an inventory of all available oil spill equipment along the Mekong River which can be used in cases of major emergencies and spillages

<b>Output 4</b>	<b><i>Two pilot projects regarding preparation and implementation of contingency plans for dangerous goods management including training and exercises prepared and implemented</i></b>
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- Activity 4.1 Identify two pilot port or terminals to participate in developing an emergency response and/or oil spill response plan
- Activity 4.2 Develop and implement an emergency response and/or oil spill response plan for the selected pilot ports or terminals and identify inadequacies in response equipment
- Activity 4.3 Provide recommendations for minimum response equipment and assist in procurement
- Activity 4.4 Provide training for port and terminal employees on how to implement the emergency and/or oil spill response plan
- Activity 4.5 Arrange activities making use of the two pilot ports as demonstration ports.

<b>Output 5</b>	<b><i>Cross-border cooperation on emergency and oil spill response management strengthened</i></b>
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- Activity 5.1 Assist relevant line agencies in Lao PDR and Thailand to develop a joint strategy on minimum emergency response/oil spill response. Such a strategy shall include recommendations on:
- requirements for response planning;
  - communication procedures at national and cross-border level (to be coordinated with activities under the MRC Environment Program);
  - type, quantity and location of equipment; and
  - cross-border agreement on use of national equipment in cross-border responses.
- Activity 5.2 Arrange a cross-border exercise on emergency/oil spill response.

# 6 EQUIPMENT

## 6.1 EQUIPMENT BUDGET - PILOT PROJECTS

A budget for the purchase of emergency/oil spill equipment for the pilot project is needed. The procurement of the equipment is normally done by the port or terminal operator – private or public – and will differ according to the size of the port or terminal and the type of operations carried out. A lump sum of 30,000 USD has been included in the budget.

## 6.2 EQUIPMENT BUDGET FOR LONG - TERM IMPLEMENTATION

The main budget will go to maintenance and occasional replacement of the equipment described above. Ports and terminals should expect a cost of 5,000 USD per year.

## 6.3 FACILITY EQUIPMENTS

The facility equipment as boats for pilot projects and vehicles for running the project should be provided

## 7 BUDGET

NR.	OUTPUT	BUDGET (USD)	COMMENT
Output 1	Regulations and guidelines on emergency response and oil spill management reviewed, drafted and approved by the competent authority(ies).		
	Act. 1.1		
	Act. 1.2		
	Act. 1.3		
	Act. 1.4		
	Act. 1.5		
Output 2	Institutional arrangements for ports and terminals at national level for emergency and oil spill response management analyzed and recommendations provided.		
	Act. 2.1		
	Act. 2.2		
	Act. 2.3		
Output 3	Recommendations on minimum equipment requirements for emergency response and oil spill equipment at local and national level provided.		
	Act. 3.1		liaise with Act. 1.1 and 2.1
	Act. 3.2		
	Act. 3.3		
Output 4	Two pilot projects regarding preparation and implementation of contingency plans for dangerous goods management including training and exercises prepared and implemented.		
	Act. 4.1		
	Act. 4.2		
	Act. 4.3		
	Act. 4.4		
Output 5	Cross border cooperation on emergency and oil spill response management strengthened.		
	Act. 5.1		
	Act. 5.2		
Equipment - Lump sum			
TOTAL			

## 8 PROPOSED IMPLEMENTATION AGENCY

### 8.1 NATIONAL COORDINATION

The Department of Waterways under the Ministry of Public Works is recommended as the Implementing Agency in close cooperation with the National Disaster Prevention Control Committee, the Department of Pollution Control and operators of ports and terminals (private and public).

#### 8.1.1 Department of Waterways

The Department of Waterways is a government department under the Ministry of Public Works and Transport (MPWT) responsible for emergency and oil spill response in ports and terminals.

The Department is considered the most appropriate Implementing Agency for this project on Emergency and Oil Spill Response in Ports and Terminals because it is a port state organization that controls and supervises the safety of transport of dangerous goods by inland waterways and ports.

The Department has worked and cooperated closely with the MRC Navigation Programme, agencies and local authorities concerned that can issue relevant regulations to control the transport of dangerous goods in port areas and inland waterways related to the activities of this project. This will ensure smooth, efficient and sustainable project cooperation and implementation of pilot projects at sites along the Mekong River.

#### 8.1.2 National Disaster Management Prevention and Control Committee

The Committee functions include providing expert advice, promoting coordination with ministerial focal points, promoting disaster mitigation and preparedness activities at the local level, implementing community awareness activities, providing training, guidelines and plans to make disaster risk management more effective and establishing disaster management implementation teams at the national, provincial and district levels.

### 8.2 REGIONAL COORDINATION

#### 8.2.1 The Mekong River Commission (MRC)

Since the project is part of a Regional Action Plan, MRC will have a coordinating role between the countries. MRC will not only monitor the implementation of the RAP but will also facilitate and assist especially on harmonization issues where the project has cross-border impacts.

MRC will coordinate the various projects and disseminate the results and lessons learned between the MRC countries.

To materialize this role, an Office for the Coordination of Mekong Navigation will be established at the MRC Secretariat to work closely with the Implementing Agencies, the secretariats of the National Mekong Committees, relevant line agencies, the private sector and other regional agencies.

## 9 STAKEHOLDER IDENTIFICATION

A number of stakeholders are involved in the planning, design and construction of ports and terminals. The most important are:

### 9.1 THE DEPARTMENT OF WATERWAYS

The Department of Waterways is responsible for policy, planning, and managing all inland waterways in the country. This includes port and navigation channel management, flooding and river bank protection and waterways transport.

The Department will implement the project and have overall responsibility for verifying that all ports and terminals handling dangerous goods have an appropriate emergency and oil spill response plan, sufficient emergency and oil spill equipment and relevant personnel trained in executing the plans and using emergency/oil spill equipment.

### 9.2 MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

The Ministry of Natural Resources and Environment is the institutional structure of the Government directly responsible for managing the environment, land, forest, water, air, biodiversity and minerals including natural disasters, climate changes, hydrology and meteorology throughout the country.

### 9.3 PORT AND TERMINAL OPERATORS

Operators are responsible for developing an emergency and/or oil spill response plan, buying necessary equipment and training personnel.

### 9.4 LOCAL AUTHORITIES AND MUNICIPALITIES

Local authorities provide emergency response for ports and terminals in their areas.

# 10 SOCIO-ECONOMIC ISSUES

## 10.1 SOCIAL ASSESSMENT

This project is not expected to have any adverse social impacts. On the contrary, it will benefit poor rural people because the implementation of the project will reduce the severity of the consequences of an incident. This will result in an increased level of safety and prevent damage to natural resources on which they rely for their livelihoods.

Furthermore, there may be opportunities for employment.

## 10.2 ENVIRONMENTAL ASSESSMENT

When it has been introduced and implemented, the project will not have any negative environmental impacts. Emphasis should be on protecting the environment and the safety of workers and the public.

# 11 RISK ASSUMPTIONS

The following risks have been identified, which can result in poor project implementation:

- Lack of interest and awareness among port and terminal operators;
- Lack of resources at the Implementing Agencies;
- Little cooperation between stakeholders;
- Changing staff at key positions at stakeholders and the Implementing Agencies; and
- Lack of interest in developing cross-border cooperation.

## 12 WORKPLAN AND TIME SCHEDULE

The project will be implemented over a period of 24 months.

### IMPLEMENTATION PLAN

ACTIVITY	DESCRIPTION	MONTH																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.1	Prepare minimum requirements regarding emergency response (Chemical spillages, collisions, groundings, oil spill, fire and explosion).	█																							
1.2	Provide recommendations for ports and terminals handling dangerous goods on how to improve or develop an emergency response/oil spill response plan.				█																				
1.3	Determine minimum requirements regarding training for emergency response teams and for testing the emergency systems, equipment and procedures at ports and terminals.					█																			
1.4	Develop emergency and oil spill reporting and notification requirements.					█																			
1.5	Establish requirements of “evidence of financial responsibility” for owners/operators.								█																

ACTIVITY	DESCRIPTION	MONTH																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.6	Present and discuss above requirements with relevant stakeholders at national workshop.																								
2.1	Access all ports and terminals handling dangerous goods and/ or oil products regarding their status of emergency and oil spill response.																								
2.2	Establish a system at the Competent Authority to receive and approve the emergency response and/or oil spill response plan.																								
2.3	Prepare a standard training and exercise program for all facility staff involved in the emergency response or oil spill response.																								
3.1	Determine minimum equipment requirements for emergency and oil spill responses for ports and terminals.																								
3.2	Assist the Competent Authority to identify ports and terminals not complying with the stockpile equipment requirements determined by Competent Authority.																								
3.3	Assist the Competent Authority to make an inventory of all available oil spill equipment along the Mekong River.																								

ACTIVITY	DESCRIPTION	MONTH																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4.1	Identify two pilot ports or terminals to participate in developing an emergency response and/or oil spill response plan.																								
4.2	Develop and implement an emergency response and/or oil spill response plan for the selected pilot ports or terminals.																								
4.3	Provide recommendations for minimum response equipment and assist in procurement.																								
4.4	Provide training for port and terminal employees on how to implement the emergency and/or oil spill response plan.																								
4.5	Arrange activities making use of the two pilot ports as demonstration ports.																								
5.1	Assist relevant line agencies of Lao PDR and Thailand to develop a joint strategy on minimum emergency response/oil spill response.																								
5.2	Arrange a cross-border exercise on emergency/oil spill response.																								

# ANNEX 1: SHORT LOGICAL FRAMEWORK ANALYSIS

## LOG FRAME PLANNING MATRIX FOR PROJECT DOCUMENT 9 –PORTS AND TER

### Emergency and Oil Spill Response in Ports and Terminals

#### OBJECTIVES

*To reduce the impact on the aquatic environment of the Mekong River system, protect human lives and limit the damage to property by establishing and implementing an effective emergency and oil spill response plan at local, national and cross border levels.*

RESULTS (OUTPUTS)	MEANS OF VERIFICATION	INDICATORS
<ol style="list-style-type: none"> <li>1. Regulations and guidelines on emergency response and oil spill management reviewed, drafted, and approved by the competent authority(ies).</li> <li>2. Institutional arrangements for ports and terminals at the national level for emergency and oil spill response management analyzed and recommendations provided.</li> <li>3. Recommendations on minimum equipment requirements for emergency response and oil spill equipment at local and national levels provided.</li> <li>4. Two pilot projects regarding preparation and implementation of contingency plans for dangerous goods management, including training and exercises, prepared and implemented.</li> <li>5. Cross-border cooperation on emergency and oil spill response management strengthened.</li> </ol>	<ul style="list-style-type: none"> <li>Review report on regulations.</li> <li>Compliance report including recommendations.</li> <li>Report on minimum requirements.</li> <li>Stakeholder identification report.</li> <li>Report on joint strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder workshop and authority approval.</li> <li>Training course certificates distributed.</li> <li>Equipment inventory plans.</li> <li>Training certificates distributed.</li> <li>Training and exercises.</li> </ul>

ACTIVITIES	MEANS	COSTS (USD)	ASSUMPTIONS
<p><b><u>Activity 1.1</u></b> Prepare minimum requirements regarding emergency response, oil spill response and safety for ports and terminals handling dangerous goods.</p> <p><b><u>Activity 1.2</u></b> Provide recommendations for ports and terminals handling dangerous goods on how to improve or develop an emergency response/oil spill response plan in case of non-compliance with existing regulations.</p> <p><b><u>Activity 1.3</u></b> Determine minimum requirements regarding training for emergency response teams and for testing the emergency systems, equipment and procedures at ports and terminals handling dangerous goods and at the national level.</p> <p><b><u>Activity 1.4</u></b> Develop emergency and oil spill reporting and notification requirements.</p> <p><b><u>Activity 1.5</u></b> Establish requirements of “evidence of financial responsibility” for owners/operators of ports and terminals handling dangerous goods and oil products.</p> <p><b><u>Activity 1.6</u></b> Present and discuss above requirements with relevant stakeholders at a national workshop.</p> <p><b><u>Activity 2.1</u></b> Access all ports and terminals handling dangerous goods and or oil products regarding their status/level of emergency and oil spill response and verify compliance with national regulations.</p> <p><b><u>Activity 2.2</u></b> Establish a system at the Competent Authority to receive and approve the emergency response and/or oil spill response plan prepared by ports and terminals handling dangerous goods.</p> <p><b><u>Activity 2.3</u></b></p>	<p>National and international consultants</p>		<p>The project activities are implemented under the assumptions that the following risks can be overcome:</p> <ul style="list-style-type: none"> <li>▪ Lack of interest and awareness of port and vessel operators;</li> <li>▪ Lack of resources at Implementing Agency;</li> <li>▪ Little cooperation between stakeholders; and</li> <li>▪ Changing staff in key positions at stakeholders and Implementing Agencies.</li> </ul>

ACTIVITIES	MEANS	COSTS (USD)	ASSUMPTIONS
<p>Prepare a standard training and exercise program for all facility staff involved in the emergency response or oil spill response plan to be used at ports and terminals handling dangerous goods. Such a program shall include:</p> <ul style="list-style-type: none"> <li>▪ correct use of available emergency equipment, including initial equipment familiarization, operating principles and techniques and equipment deployment;</li> <li>▪ transfer of dangerous goods away from the emergency;</li> <li>▪ fire isolation;</li> <li>▪ correct use of Personal Protective Equipment (PPE);</li> <li>▪ coordinating operations with outside services;</li> <li>▪ rescue, including training for selected personnel in life-saving from water;</li> <li>▪ spill containment and clean-up; and</li> <li>▪ advanced training to ensure that the level of knowledge is maintained and enhanced.</li> </ul> <p><b><u>Activity 3.1</u></b> Determine minimum equipment requirements for emergency and oil spill responses for ports and terminals (liaise with Activities 1.1 and 2.1).</p> <p><b><u>Activity 3.2</u></b> Assist the Competent Authority to identify ports and terminals not complying with the equipment requirements determined by the Competent Authority and prepare a plan for ports and terminals to comply.</p> <p><b><u>Activity 3.3</u></b> Assist the Competent Authority to make an inventory of all available oil spill equipment along the Mekong River, which can be used in case of major emergencies and spillages.</p> <p><b><u>Activity 4.1</u></b> Identify two pilot ports or terminals to participate in developing an emergency</p>			

ACTIVITIES	MEANS	COSTS (USD)	ASSUMPTIONS
<p>response and/or oil spill response plan.</p> <p><b><u>Activity 4.2</u></b> Develop and implement an emergency response and/or oil spill response plan for the selected pilot ports or terminals and identify inadequacies in response equipment.</p> <p><b><u>Activity 4.3</u></b> Provide recommendations for minimum response equipment and assist in procurement.</p> <p><b><u>Activity 4.4</u></b> Provide training for port and terminal employees on how to implement the emergency and/or oil spill response plan.</p> <p><b><u>Activity 4.5</u></b> Arrange activities making use of the two pilot ports as demonstration ports.</p> <p><b><u>Activity 5.1</u></b> Assist relevant line agencies in Lao PDR and Thailand to develop a joint strategy on minimum emergency response/oil spill response. Such a strategy shall include recommendations on:</p> <ul style="list-style-type: none"> <li>▪ <i>requirements for response planning;</i></li> <li>▪ <i>communication procedures at national and cross-border level (to be coordinated with activities under the MRC Environment Program);</i></li> <li>▪ <i>type, quantity and location of equipment; and</i></li> <li>▪ <i>cross-border agreement on use of national equipment in cross-border responses.</i></li> </ul> <p><b><u>Activity 5.2</u></b> Arrange a cross-border exercise on emergency/oil spill response</p>			