



**Lao People's Democratic Republic**  
Peace Independence Democracy Unity Prosperity



**Ministry of Public Works and Transport**  
**Department of Waterways**

Ref. No. ....../PWT.DOW  
Vientiane Capital, date .....

**“IMPLEMENTATION OF THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE AND PROVISION OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR INLAND WATERWAY VESSELS”**

**Invitation for Bids**

<b>Date of Invitation</b>	28 January 2019
<b>Deadline for Bids</b>	15 March 2019 at 10:00 O'clock

The Department of Waterways (DOW) of the Lao PDR Ministry of Public Works and Transport (MPWT) (the “Employer”) invites sealed bids from eligible bidders which meet the qualification criteria prescribed below for the execution and implementation of a consultancy project on the “Implementation of the International Maritime Dangerous Goods (IMDG) Code and provision of the Material Safety Data Sheet (MSDS) for inland waterway vessels”.

The Employer wants to assign an international consultants and/or a local consultant firm for the project as mentioned above. The total duration of the project is 24 months.

**Outputs and activities** - Following outputs and activities are expected:

1. The International Maritime Dangerous Goods (IMDG) Code with regard to inland navigation and the Material Safety Data Sheet (MSDS) have to be implemented;
2. An Operational Manual for use of the Material Safety Data Sheet (MSDS) and the International Maritime Dangerous Goods (IMDG) Code on board Inland Waterway Vessels has to be prepared;
3. Standard transport documents and administrative procedures for practical use on-board have to be prepared;
4. Training for vessel crew and inspection authorities in the job-specific knowledge of the IMDG Code and in the use of documents for carriage of Dangerous Goods, including the MSDS has to be prepared and carried out;
5. Two pilot projects involving a shipping company/vessel operator and inspection authorities on the practical implementation of the IMDG Code and the MSDS have to be carried out.

The full Terms of Reference can be found on the website of the Lao PDR Ministry of Public Works and Transport <http://www.mpwt.gov.la/en/projects-en/2819-osandimgd-porj-en>

**Qualifications of the consultant(s)** - The successful consultant(s) should demonstrate extensive consulting skills and experience:

- Degree in Master Mariner, Waterway Engineering or Marine Transport with specialization in waterway safety, risk management, dangerous goods, environmental science;
- High level knowledge and experience in transport planning and operating, risk management and transport of dangerous goods;
- Good knowledge of Inland waterway transport on the Mekong River;
- Demonstrated ability to write technical reports which can be readily understood by decision makers and the general public;

- Fluency in spoken and written English;
- Excellent writing, presentation, and reporting skills.

**Bidding documents** – Following documents must be included in the bidding:

1. Organizational structure and declaration of availability;
2. Overview of similar projects undertaken during the past five to seven years;
3. Brief description of solutions and general methodology;
4. Work program, including main items of work and manpower plan and estimated percentage of work for international specialists. The international consultant(s) should select one or more national experts to assist and to be the focal point and should select a translator or translation company to translate the reports and training courses and to interpret during meetings and workshops from English to Lao.
5. Curriculum Vitae for each concerned expert;
6. Statement of financial bidding (in US Dollar), including the fees of the international consultant(s) and national expert(s), the Daily Subsistence Allowance (DSA) for each day in the Lao PDR, the taxes to be paid in the Lao PDR, the international, regional or local travel costs related to official business travel, the meeting and training costs and the translation of reports from English to Lao.

**Details and further information**

To obtain further information and inspect the bidding documents, bidders should contact:

Mr. Somphone Louanglath, director of the Planning and Budget Division  
Department of Waterways, Ministry of Public Works and Transport  
Lane Xang Avenue  
Vientiane Capital, Lao PDR  
Tel +856 (0) 20 2222 0433 or +856 (0) 20 5552 7035  
Email somphonell@gmail.com

To submit the bidding documents in English language, the eligible bidders should write to the below address on or before the bidding deadline, so that the bids can be opened immediately after the deadline for bid submission in the presence of bidders' representatives who choose to attend.

The Planning and Budget Division,  
Department of Waterways, Ministry of Public Works and Transport  
Lane Xang Avenue  
Vientiane Capital, Lao PDR  
Tel: +856 21 453 279; fax: +856 21 416 430

Director General

Houngla Sengmuang

**TERMS OF REFERENCE FOR THE PROJECT**  
**“IMPLEMENTATION OF THE INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE AND**  
**PROVISION OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR INLAND WATERWAY VESSELS”**

**Content**

1. Technical/financial file
2. Background and rationale
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**1. Technical/financial file**

Project Implementing Agency: Lao PDR Ministry of Public Works and Transport, Department of Waterways

Indicative Starting Date: 1 May 2019

Duration of the project: 2 years

Sector intervention: Waterway Transport

Sub-sector intervention: Risk Management, Transport of Dangerous Goods

Project Description:

On the Mekong River, Dangerous Goods are transported both in bulk and in packaged form in containers or as general cargo. Safety on board vessels is poor on many vessels sailing on the Mekong River, including vessels that carry Dangerous Goods. One of the reasons is the lack of or insufficient information about the Dangerous Goods carried on board and insufficient knowledge about Dangerous Goods, due to absence of education and training.

From the “Risk Analysis” of the Regional Action Plan (RAP) for the Sustainable Transport of Dangerous Goods along the Mekong River, it was observed that many vessels do not carry the required documentation for international transport of Dangerous Goods.

The required documentation depends on the way the dangerous goods are carried and stored:

- Packaged Dangerous Goods in containers or general cargo: Safe transport and handling of **packaged** Dangerous Goods requires conformity with the International Maritime Dangerous Goods (IMDG) Code including specific packaging, labeling, marking, segregation, a complete set of documents and a Dangerous Goods stowage plan showing the exact location of the Dangerous Goods on board.
- Dangerous Goods in bulk (liquid) on board tanker vessels: In case the Dangerous Goods are carried in bulk, the tanker vessel must have the necessary cargo information, provided by the Material Safety Data Sheet (MSDS) of the specific cargo on board the tanker.

**2. Background and rationale**

**2.1. Introduction**

Safety on board vessels is poor on many vessels sailing on the Mekong River, including vessels that carry Dangerous Goods. One of the reasons is the lack of or insufficient information about the Dangerous Goods carried on board and insufficient knowledge about Dangerous Goods, due to absence of education and training.

It is generally accepted that the majority of accidents are linked to human errors. Human errors are caused by a number of different factors such as poor education, insufficient training, and lack of information. The consequences of accidents where Dangerous Goods are part of the cargo may be

significant, resulting in injuries, death, fires, explosions and/or pollution. Therefore, the provisions on board pertaining to, when and how Dangerous Goods shall be handled, require special attention. Worldwide, the carriage of packaged Dangerous Goods is regulated by the International Maritime Dangerous Goods (IMDG) Code. The objective of the Code is to enhance the safe carriage of Dangerous Goods, facilitate the free unrestricted movement of such goods, and prevent pollution of the environment.

When Dangerous Goods are carried in bulk on tankers, the Material Safety Data Sheet should be readily available for the vessel's crew.

This project will focus on how to implement within the Inland Waterway Transport Sector, the International Maritime Dangerous Goods (IMDG) Code for packaged Dangerous Goods and the Material Safety Data Sheet (MSDS) for Dangerous Goods (liquid) in bulk.

## **2.2. International Maritime Dangerous Goods (IMDG) Code**

The International Maritime Dangerous Goods (IMDG) Code was developed as a uniform international code for the transport of packaged Dangerous Goods by sea, focusing on packaging, container traffic and stowage, and with particular reference to the segregation of incompatible substances.

The Code lays down basic principles, detailed recommendations for individual substances, materials and articles and a number of recommendations for good operational practice including advice on terminology, packaging, labeling, stowage, segregation and handling, and emergency response action. The IMDG Code is evolving and is updated every two years in order to take into account:

- new types of Dangerous Goods which have to be included;
- new technologies and methods for handling Dangerous Goods; and
- new safety concerns as a result of experience.

The Code comprises 7 parts and is presented in two volumes and a supplement.

The Supplement includes aspects covered by publications associated with the IMDG Code, such as the EmS Guide: Emergency Response Procedures for Ships Carrying Dangerous Goods, Medical First Aid Guide texts, reporting procedures, IMO/ILO/ECE guidelines for packaging Cargo Transport Units (CTUs), Safe use of pesticides in ships, cargo holds, CTUs and the International Code for the Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships.

## **2.3. Material Safety Data Sheet (MSDS)**

A Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) is a document that provides product users and emergency personnel with information and procedures needed for handling and working with a particular product. MSDS's are prepared by the supplier or manufacturer of the product and provide information regarding any hazards of the product, how to use the product safely, potential consequences if the recommendations are not followed, what to do if accidents occur, how to recognize symptoms of overexposure, and what to do if such incidents occur.

The MSDS also includes specific information on potential hazards, product composition, first aid measures, firefighting measures, accidental release measures, handling and storage, exposure controls and personal protection, physical and chemical properties, stability and reactivity, toxicological information (the type and probable concentrations of hazardous or toxic components in the cargo to be loaded, e.g. hydrogen sulfide and benzene as these often occur in petroleum products and are very toxic), ecological information, disposal considerations, transport information and regulatory information.

IMO urges Governments to ensure the availability on board tanker vessels of the Material Safety Data Sheets (MSDS) for MARPOL Annex I type oil as cargo in bulk and oil fuel, as from 1 July 2009. (Resolution MSC.286 (86) (adopted on 5 June 2009)).

In Lao PDR, when dangerous goods in bulk are carried on inland waterway tankers, the specific information should be provided by a Material Safety Data Sheet or Safety Data Sheet prepared by the manufacturer.

## **2.4. National regulations and guidelines**

The Ministry of Public Works and Transport (MPWT) is the national government agency primarily in charge of transport. It is responsible for developing national and provincial roads, civil aviation, urban

transport systems, river wharves, and river and road transport. MPWT consists of six departments: the Department of Civil Aviation, Department of Housing and Urban Planning, Department of Inland Waterways, Department of Planning and Cooperation, Department of Roads (DOR), and Department of Transport. Based on five-year transport plans, the provinces prepare and submit annual implementation plans for transport projects to MPWT.

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 riverbank protection, and waterways transport.

The Department prepares the national legislation on the carriage of dangerous cargoes on board inland waterway vessels. Registering of inland waterways vessels, yearly inspection of the vessels and implementation and ensuring compliance with the rules and regulations are also the responsibility of the Department of Waterways.

Legal instruments in Lao PDR that address dangerous goods and documentation on board inland waterway vessels are limited to:

- The Draft Rule on Safety of the Port, the Draft Rule on Dry Port, the Draft Regulation on Handling and Storage of Dangerous Goods and the Draft Rule on Inland Waterway Transportation of Dangerous Goods. At this stage, these are the only instruments available in Lao PDR.

In addition, reference can be made to the following regulations, guidelines, technical standards and notifications that currently apply to inland waterway transportation in Lao PDR:

- Guideline on River Traffic Regulation No. 219/MCTPC of 19 April 2000;
- Guideline on River Transport Regulation No. 104/MCTPC of 12 January 2000;
- Guideline on Request for Ship Building Permission No. 1442/MCTPC of 26 January 1996;
- Notification for Operating of Passenger Speed Boat No. 1663/MCTPC of 1 June 1997;
- Standard of Technical Inspection for Ship and Ferry No. 0030/Transport Section of 8 January 1996;
- Regulation on transport business establishment, forwarders and maintenance services owned by state, group of people, state-private, private and individual No. 1423/CTPC of 22 June 1996; and
- Regulation on Truck and Transport Boat Association No. 1414/CTPC of 22 July 1996.

## 2.5. Regional agreement

*The Agreement on Commercial Navigation on Lancang-Mekong River between P.R. China, Lao PDR, The Union of Myanmar and The Kingdom of Thailand (“the Quadripartite Agreement”) and the Memorandum of Understanding (MOU).*

The Mekong River is an international inland waterway transport corridor; hence it is of utmost importance to use the same code and documents for the carriage, handling and storage of dangerous goods whether in bulk, as packaged goods, as general cargo or in containers. Therefore, it is essential to harmonize national regulations based on the IMDG Code, and apply the same document requirements for the transportation of dangerous goods.

With the “Quadripartite Agreement”, Lao PDR’s neighboring countries agree to use the IMDG Code when dangerous goods are transported.

The Memorandum of Understanding concerning the Implementation of the Quadripartite Agreement on Commercial Navigation on the Lancang-Mekong River, Annex “Rules on Water Transport Administration on the Lancang-Mekong River”, article 17 stipulates:

*“The protection requirements for each packaging group and each type of package as required in the carriage of dangerous goods shall be in compliance with the provisions for packaging type, packaging method, specifications and performance tests in the IMDG Code.*

*The proper shipping name of the goods shall be displayed on the package of dangerous goods and the name used shall be in compliance with the individual schedules of dangerous goods in the IMDG Code. Labels and marks as required by the provisions of IMDG Code shall be placed on the package either by pasting, printing or fastening.*

*The UN number of the dangerous goods contained shall also be displayed on the packages.*

*The documents used for the transport of dangerous goods shall meet the requirements stipulated in IMDG Code.”*

## **2.6. The European Agreement concerning the International Carriage of Dangerous goods by Inland Waterways (ADN)**

With respect to information and training requirements, the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) can be consulted as this agreement covers all methods of transport of Dangerous Goods, in bulk and packaged, and is designed specifically for inland navigation.

The ADN was prepared in Geneva on 26 May 2000 under the auspices of the United Nations Economic Commission for Europe (UNECE) and the Central Commission for the Navigation of the Rhine (CCNR) and entered into force on 28 February 2008.

The main objectives of the ADN are to establish uniform principles and rules to improve the safety of international carriage of Dangerous Goods by inland waterways, to contribute to the protection of the environment, to facilitate transport operations and to promote international trade.

The Regulations annexed to the ADN contain provisions concerning:

- dangerous substances and articles;
- the carriage of DG in packed form and in bulk on board inland navigation vessels and tank vessels; and
- the construction and operation of such vessels.

The Regulations also address requirements and procedures for inspections, the issue of certificates of approval, recognition of classification societies, monitoring, training and examinations, and required cargo information.

Chapter 5.4 addresses dangerous goods transport documents and related information and “*Instructions in Writing*” (5.4.3). These “Instructions” have the same objective as the (M)SDS, but according to the International Safety Guide for Inland Navigation Tank-barges and Terminals (ISGINNT), they contain fewer and more general information, and therefore it is strongly recommended that (M)SDS are available for all products carried on board tanker vessels.

When dangerous goods are involved, in Europe, at least one crewmember on board an inland waterway vessel, needs to have a valid ADN certificate.

For more information, UNECE, European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN): [http://www.unece.org/trans/danger/publi/adn/adn\\_e.html](http://www.unece.org/trans/danger/publi/adn/adn_e.html)

## **2.7. International Safety Guide for Inland Navigation Tank-barges and Terminals (ISGINNT)**

The ISGINNT (2010) provides technical guidance on inland tanker vessels and terminal operations. The Guide provides best-known safety practices on the operation of tank-barges and terminals, and also embraces a risk-based control philosophy. By enhancing risk awareness, ISGINNT seeks to foster an environment where the uncertainties associated with some shipboard operations are reduced not solely by prescription, but also by encouraging vessel and terminal crews, as well as their employers, to identify the risks in everything they are doing and to then implement fit-for-purpose risk reduction measures.

The Guide is divided into five sections: “*General Information*”, “*Tanker Information*”, “*Terminal Information*”, the “*Management of the Tanker and Terminal Interface*” and “*Additional Information for the Handling of Liquefied Gases*”.

The Guide makes recommendations for tanker and terminal personnel on the safe carriage and handling of such products that are normally carried in petroleum, chemicals or liquefied gas tankers and terminals handling those vessels. The purpose of the Guide is also to provide operational advice to assist personnel directly involved in tanker and terminal operations. It does not provide a definitive description of how tanker and terminal operations are conducted. It does, however, provide guidance on, and examples of, certain aspects of tanker and terminal operations and how they may be managed, including handling of emergency situations.

For more information, ISGINNT: <http://www.isgintt.org/100-en.html>

According to ISGINNT (Chapter 2.3.4), to assist ship’s crews in preparing for toxic cargoes, the IMO has urged governments to ensure that ships are supplied with, and carry, Material Safety Data Sheets (MSDS) for significant cargoes. The MSDS should indicate the type and probable concentrations of hazardous or toxic components in the cargo to be loaded, particularly H<sub>2</sub>S and benzene. In UNECE and

EU regulations, these documents are called Safety Data Sheets (SDS). The MSDS or SDS have to be based on the standard format required by the applicable legislation.

The supplier should provide the relevant MSDS to a tanker before it commences loading the products. The tanker should provide the receiver with an MSDS for the cargo to be discharged. The tanker should also advise the terminal, and any tank inspectors or surveyors whether the previous cargo contained any toxic substances.

Provision of an MSDS does not guarantee that all of the hazardous or toxic components of the particular cargo or bunkers being loaded have been identified or documented. Absence of an MSDS should not be taken to indicate the absence of hazardous or toxic components. Operators should have procedures in place to determine whether any toxic components are present in cargoes that they anticipate may contain them.

UNECE and EU regulations do not require that tankers carry (M)SDS. Instead, tankers need to be issued with "*Instructions in Writing*". However, as these instructions contain less and more general information, it is strongly recommended that (M)SDS are available for all products carried on board as they will be of assistance in case of cargo related emergencies.

### 3. Objectives

The Objective of the Project is to implement the IMDG code, to provide the MSDS, and to ensure that crew have the necessary knowledge, information and documentation of the Dangerous Goods carried on board for conducting operations in the safest possible way.

### 4. Implementation Agency and Stakeholders

The implementation of the IMDG Code and availability of the MSDS for bulk liquid cargo classified as Dangerous Goods, applies to all inland waterway vessels that carry, handle or store Dangerous Goods, including tanker vessels, general cargo and container vessels.

The *Department of Waterways under the Ministry of Public Works and Transport* (MPWT) is responsible for implementation of the IMDG Code and will be the Implementing Agency. The Department of Waterways is part of the organizational structure of the Ministry of Public Works and Transport and is studying, planning and managing at the macro-level the waterways and the waterway transport throughout the country.

The implementation shall be done in cooperation/coordinated with:

- The *Provincial Departments of Public Works and Transport*, that are studying, managing, planning and implementing public works and transport activities in provinces;
- The *Vessel Operators and Shippers*; The Vessel operators are responsible for compliance with the IMDG requirements on board the vessel and the necessary dangerous goods cargo information. The Shippers who sends goods for shipment by packaging, labeling, and arranging for transit and who is named in the shipping documents as the party responsible for initiating the shipment has to comply to the IMDG requirements and has to provide the required transport documents including the MSDS for liquid bulk cargoes;
- The *competent authority*, who will be responsible for the inspections;
- The *Ministry of Industry and Commerce (MoIC)*;
- The Ministry of Natural Resources and Environment (MoNRE);
- The *Lao Boat Associations*; and
- 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 monitor the implementation of the project but will also facilitate and assist, especially on harmonization issues, where the project has a cross-border impact. In order to materialize this role, the Navigation Specialist of the MRC Secretariat will work closely with the Implementing Agency and the Secretariat of the Lao National Mekong Committee, with the relevant Line Agencies, the Private Sector and with other Regional Agencies.

### 5. Outputs

The Outputs of the project will be as follows:

- I. The IMDG Code with regard to inland navigation and the MSDS implemented.

- II. An Operational Manual for use of the (Material) Safety Data Sheet ((M)SDS) and the International Maritime Dangerous Goods (IMDG) Code on board Inland Waterway Vessels prepared.
- III. Standard transport documents and administrative procedures for practical use on-board prepared.
- IV. Training for vessel crew in job-specific knowledge of the IMDG Code and in the use of documents for carriage of Dangerous Goods, including the Material Safety Data Sheet (MSDS) prepared and carried out.
- V. Two pilot projects involving a shipping company/vessel operator and inspection authorities on the practical implementation of the IMDG Code and the (M)SDS.

## 6. Activities

### **Output I The IMDG Code with regard to inland navigation and the MSDS implemented.**

Activity I.1 Examine the existing procedures for handling Dangerous Goods, including packaging, marking, labeling, and segregation and compare the existing procedures with the requirements stipulated in the IMDG Code and the ADN regulations.

Activity I.2 List deficiencies, inadequate procedures and operations regarding the handling of Dangerous Goods on board vessels and inform and liaise with the stakeholders.

Activity I.3 Prepare guidelines and improve awareness for the correct implementation of the IMDG Code and the MSDS.

Activity I.4 Prepare inspection procedures for the Government Inspection Authority regarding compliance with the IMDG Code and the use of MSDS.

### **Output II An Operational Manual for use of the Material Safety Data Sheet (MSDS) and the International Maritime Dangerous Goods (IMDG) Code on board Inland Waterway Vessels prepared.**

Activity II.1 Utilize the list of the most common deficiencies and inadequate procedures and activities regarding the handling of Dangerous Goods on board from Activity 1.2 in order to prepare a draft Operational Manual with practical requirements, procedures and safety precautions according to the requirements of the IMDG Code. The Manual shall include highlights of the important sections of the MSDS.

Activity II.2 Present and discuss the draft Manual with relevant stakeholders for their approval.

### **Output III Standard transport documents and administrative procedures for practical use on-board prepared.**

Activity III.1 Examine existing transport documents and administrative procedures according to the IMDG Code requirements and the ADN, and provide recommendations for improvements.

Activity III.2 Present, discuss and seek agreement about the recommendations with relevant stakeholders and update the transport documents and administrative procedures.

### **Output IV Training for vessel crews and inspection authorities in the job-specific knowledge of the IMDG Code, and in the use of documents for carriage of Dangerous Goods, including the Material Safety Data Sheet prepared and carried out.**

Activity IV.1 Prepare a TNA (Training Needs Assessment) for the inspection authorities and crew on board vessels, for training course(s) regarding their existing capacity for handling Dangerous Goods on board vessels and regarding the IMDG Code.

Activity IV.2 Prepare and carry out training course(s) for inspection authorities and crew on board vessels according the prepared TNA. The training course(s) shall focus on the use of the IMDG Code, the required transport documents and the Material Safety Data Sheet.

### **Output V Two pilot projects involving a shipping company/vessel operator and inspection authorities on the practical implementation of the IMDG Code and the MSDS.**

Activity V.1 Identify two potential shipping companies/vessel operators for participation in the pilot project.

Activity V.2 Identify the deficiencies and shortcomings regarding the practical implementation of the IMDG Code and the MSDS.

**Activity V.3** Prepare, discuss and agree upon recommendations on how to improve the practical implementation of the IMDG Code and the MSDS on board.

**Activity V.4** Implement the agreed recommendations.

## 7. Proposal of Work plan and time schedule

### 8. Proposal of Work plan

Activity		International Consultant		Nat. Expert	Workshops/ meetings	Training Courses	Reports
		Home base	Lao PDR	In Laos	In Laos	In Laos	
I.1	Examen existing procedures						
I.2	List deficiencies and inadequate procedures and discuss with stakeholders				1		
I.3	Prepare guidelines						1
I.4	Prepare inspection procedures						1
II.1	Prepare draft operational manual						1
II.2	Present and discuss with stakeholders				1		
III.1	Examen existing documents and procedures and make recommendations						1
III.2	Present and discuss with stakeholders				1		
IV.1	Prepare training needs assessment						1
IV.2	Prepare and carry out training courses					4	
V.1	Identify potential operators						
V.2	Identify deficiencies and shortcomings						
V.3	Prepare and discuss recommendations				1		1
V.4	Implement agreed recommendations						
Total		60%	40%		4	4	6

This work plan is only a proposal. The bidder is free to change the percentage of working in Laos (but not less than 40%) for the international consultant(s) and the national expert(s) but not the number of meetings, training courses and interim reports.

### Proposal of time schedule

Activity	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
Output I IMDG Code and MSDS implemented																								
I.1	■	■	■																					
I.2			■	■	■	■																		
I.3							■																	
I.4													■	■	■	■	■	■						
Output II Operational manual for using IMDG Code and MSDS on board prepared																								
II.1								■	■	■	■	■												
II.2												■	■	■										
Output III Standard transport documents and administrative procedures for use on board prepared																								
III.1								■	■	■	■	■	■											
III.2													■	■	■	■								
Output IV Training for vessel crew prepared and carried out																								
IV.1																■								
IV.2																	■	■	■	■	■	■		
Output V Two pilot projects on the practical implementation of the IMDG Code and the MSDS																								
V.1														■	■									
V.2										■	■	■	■											
V.3																		■	■	■	■	■	■	
V.4																						■	■	■

This time schedule is only a proposal. The bidder is free to make any changes, but still within the total period of 24 months or less.

## 9. Short logical framework analysis

The project activities are implemented under the assumptions that the following risks can be overcome:

- Lack of interest and awareness of port and vessel operators;
- Lack of resources at Implementing Agency;
- Little cooperation between Stakeholders; and
- Changing staff in key positions at Stakeholders and Implementing Agency.

OBJECTIVES		
<i>To implement provisions of the IMDG code, the MSDS, and to ensure that crew have the necessary knowledge, information and documentation of the Dangerous Goods carried on board for conducting operations in the safest possible way.</i>		
RESULTS (OUTPUTS)	MEANS OF VERIFICATION	INDICATORS
I. The IMDG Code with regard to inland navigation and the MSDS implemented.	<u>Report 1</u> : IMDG Guidelines drafted <u>Report 2</u> : Inspection Procedures drafted	National consultations and workshops Authorities and stakeholders approval
II. An Operational Manual for use of the Material Safety Data Sheet (MSDS) and the International Maritime Dangerous Goods (IMDG) Code on board Inland Waterway Vessels prepared.	<u>Report 3</u> : Manual drafted	Stakeholders approval
III. Standard transport documents and administrative procedures for practical use on-board prepared.	<u>Report 4</u> : Standard documents drafted Recommendations for improvement of procedures	Stakeholders approval
IV. Training for vessel crew in job-specific knowledge of the IMDG Code and in the use of documents for carriage of Dangerous Goods, including the Material Safety Data Sheet prepared and carried out.	<u>Report 5</u> : Training needs assessment report drafted Course prepared	Training course certificates distributed
V. Two pilot projects involving a shipping company/vessel operator and inspection authorities on the practical implementation of the IMDG Code and the MSDS.	<u>Report 6</u> : Recommendations drafted	Recommendations implemented

### 10. Financial bidding (in US Dollar)

The bidder is requested to use following table to make his statement of financial bidding:

NR.	OUTPUT	Amount
Output 1	The IMDG Code with regard to inland navigation and the MSDS implemented.	
	Act. 1.1	
	Act. 1.2	
	Act. 1.3	
	Act. 1.4	
Output 2	An Operational Manual for use of the Material Safety Data Sheet (MSDS) and the International Maritime Dangerous Goods (IMDG) Code on board Inland Waterway Vessels prepared.	
	Act. 2.1	
	Act. 2.2	
Output 3	Standard transport documents and administrative procedures for practical use on-board prepared.	
	Act. 3.1	
	Act. 3.2	
Output 4	Training for vessel crew in the job-specific knowledge of the IMDG Code and in the use of documents for carriage of Dangerous Goods, including the Material Safety Data Sheet prepared and carried out.	
	Act. 4.1	
	Act. 4.2	
Output 5	Two pilot projects involving a shipping company/vessel operator and inspection authorities on the practical implementation of the IMDG Code and the MSDS.	
	Act. 5.1	
	Act. 5.2	
	Act. 5.3	
	Act. 5.4	
	<b>Documentation, Teaching Facilities and Equipment Lump Sum (Max.45,000)</b>	
	<b>Lao Translation &amp; Number of publishing (Lao and English language 5 full sets)</b>	
<b>TOTAL</b>		