

REGIONAL ACTION PLAN SUSTAINABLE TRANSPORT OF DANGEROUS GOODS ALONG THE MEKONG RIVER



River Commission

Navigation Programme

Cambodia • Lao PDR • Thailand • Viet Nam
For sustainable development



REGIONAL ACTION PLAN

SUSTAINABLE TRANSPORT OF DANGEROUS GOODS
ALONG THE MEKONG RIVER
2015-2020

Part I – Implementation Strategy
Part II – Portfolio of Projects for
Cambodia ♦ Lao PDR ♦ Thailand ♦ Viet Nam

Mekong River Commission

December 2014

PART I

IMPLEMENTATION

STRATEGY

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FOREWORD

Inland navigation can contribute to making transport more sustainable, particularly where it substitutes for road transport, but can also have considerable environmental impacts. Increasingly, petroleum products and other dangerous goods are being transported along the Mekong River. If not managed properly, these cargoes have the potential to cause significant pollution and even major incidents such as fires and explosions impacting on riparian communities.

Freedom of navigation is covered in Article 9 of the Mekong Agreement of 1995 which states that the river "shall be kept free from obstructions, measures, conduct and actions that might directly or indirectly impair navigability, interfere with this right or permanently make it more difficult." While navigation does not have any priority over other uses of the river, the agreement stipulates that "any mainstream project" should take navigation uses into account.

The MRC Navigation Strategy formulated in 2002 calls for harmonising and enforcing common rules and regulations on environmental protection and safety measures. It also highlights a strong need for raising awareness of environmental protection and controlling navigation risks. To implement the strategy, the MRC Navigation Programme was formulated in 2003 in close cooperation with the four Member Countries and other regional stakeholders. The development objectives are to promote freedom of navigation and increase international trade opportunities for the mutual benefit of the four countries and to help develop effective and safe waterborne transport that is sustainable and protective of the waterway environment.

The Navigation Programme's third outcome is devoted to traffic safety and environmental sustainability. Immediate objectives are promoting and realising environmental standards for "clean" river transport, balancing environmental consequences of projects against their economic and social significance and ensuring the ecological health of the river is not compromised by navigation developments.

Under the third outcome, a Risk Analysis of the Carriage, Handling and Storage of Dangerous Goods commenced in December 2010 (Phase 1). The objective was to identify and determine the magnitude of risks associated with the carriage, handling and storage of dangerous goods along the Mekong River and determine the prevention and mitigation measures required to manage the risks. Phase 1 detailed the baseline conditions and determined the priority areas for improving the transport of dangerous goods in each of the MRC Member Countries: Cambodia, Lao PDR, Thailand and Viet Nam. The risk analysis project was a significant body of work involving local and international experts encompassing the establishment of National Working Groups for data collection, and capacity building through training in risk management and the risks associated with the transport of dangerous goods. The result of this work was a two-volume publication, Carriage, Handling and Storage of Dangerous Goods along the Mekong River comprising the Risk Analysis (Volume I) and Recommendations (Volume II). The outcomes provide a useful framework on how to ensure that the balance between inland water transport and environmental protection can be achieved.

Preparations for a Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River began in June 2013 (Phase 2). The plan consists of national and cross-border project documents to serve as a basis to reduce the risks of accidents, spillages and pollution and enhance emergency response and regional coordination. The RAP includes an Implementation Strategy for the national and cross-border projects.

The national and cross-border project documents are based on consolidated recommendations approved and presented in Phase I. The consolidation of these recommendations into project documents has been discussed and reviewed by each Member Country through national consultations with National Working Groups and Line Agencies.

The Implementation Strategy has been prepared taking into account the institutional capacity of the MRC and the proposed Implementing Agencies after national consultations with Member Countries.

The Government of Belgium has funded the formulation of the Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River as part of Navigation Programme activities for 2013 to 2015.

Hans Guttman

Chief Executive Officer

MRC Secretariat

EXECUTIVE SUMMARY

The MRC Navigation Programme (NAP) was formulated in 2003 in close cooperation with Member Countries and other regional stakeholders.

Its five outcomes share the objective of the MRC Navigation Strategy to *“promote Freedom of Navigation and increase the international trade opportunities for the MRC Member countries’ mutual benefit, and to assist in coordination and co-operation in developing effective and safe waterborne transport in a sustainable and protective manner for the waterway environment.”*

The third outcome of the programme, Traffic Safety and Environmental Sustainability, aims to provide better facilities and capacity to increase safe and efficient Mekong navigation as a separate transport mode and as part of the regional multimodal transport network. It also aims to promote the concept of “clean” river transport, focusing on strategic prevention of environmental damage from waterway infrastructure or from shipping and port activities.

The Mekong River and its main tributaries are an important transport corridor for the trade of cargo, particularly the Upper Mekong between China and Thailand, and the Lower Mekong between Cambodia and Viet Nam.

Cargo and fuel throughput and trips by vessels have increased significantly in the Mekong Delta with the development of a deep-sea port at Cai Mep, which allows exports from Cambodia and Viet Nam to be shipped directly to major world markets. At the same time, the construction of a new Mekong port in Chiang Saen in northern Thailand, recently completed, is paving the way for a sharp increase in exports of oil products to China.

In 2009, the Navigation Programme consulted with port authorities, vessel associations, petroleum companies, transport operators and relevant ministries in Cambodia, Lao PDR, Thailand and Viet Nam to assess growing transport of dangerous goods along the Mekong River.

Unfortunately, the design of vessels for transporting such goods are lagging in Member Countries and does not provide sufficient protection for the cargo in case of accidents. In addition, many ports and terminals are not properly staffed with educated personnel and there was a lack of planning in case of emergencies. If not managed properly, the increased transport of dangerous goods along the Mekong River could have considerable negative environmental impacts.

Between 2011 and 2012, a very comprehensive Risk Analysis was prepared including a number of more general Recommendations.

The Risk Analysis included assessments of the operational impacts of ports, terminals, vessels, waterways, and the environmental and legal framework, which governs international, cross-border and domestic transport. The risks identified were compared against regional and international standards as well as the causes of major incidents in the petroleum, maritime and the inland waterborne transport sectors, to identify priority areas for improving the transport of dangerous goods.

The Risk Analysis documented that within the Member Countries, specific legislation on managing navigation is limited. Only Thailand and Viet Nam seem to have the necessary personnel and equipment onboard vessels and in ports to respond effectively to emergencies and increasing pollution of the river.

However, in general there is limited enforcement or legislative and regulatory guidance prescribing how to prevent navigation spills and pollution and what to do in case of an accidental or operational spillages. With the need to develop adequate regulations, operational plans and procedures to ensure the risks of pollution can be controlled, the Regional Action Plan for Sustainable Transport of

Dangerous Goods along the Mekong River shall determine the main directions of cooperation and harmonisation of regulations on nautical safety and environmental protection within and between Cambodia, Lao PDR, Thailand and Viet Nam.

A recommendation from the Risk Analysis was to prepare a Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River. This work started in 2013 and is now finalised after 16-months intensive work. The Plan follows the recommendations from the “Risk Analysis & Recommendations”.

The overall objective of the Regional Action Plan is “to ensure Efficient, Safe and Secure Carriage, Handling and Storage of Dangerous Goods on the Mekong River in a Sustainable Manner.” The work involved a number of consultations with four National Working Groups, relevant Line Agencies, local and international experts. The Action Plan addresses the situation in ports, terminals, vessels and waterways as well as the environment and legal framework in place and provide detailed plans (projects) on how to manage the safe transport of dangerous goods in the Lower Mekong Basin and on how such plans can be implemented. The preparation of Regional Action Plan showed significant differences between the four countries regarding:

- institutional capacity to handle transport of dangerous goods;
- existing legal platforms;
- human and qualified resources available at both national authorities and in the private sector; and
- financial resources.

The Regional Action Plan is structured into two parts i.e. Part I – Implementation Strategy and Part II – Projects.

Part I addresses how the plan can be implemented, coordinated and funded. Part II is divided into four country specific parts, which includes 12 identified Projects for each country. The projects for each country have the same objectives, but the activities to be carried out, the budgets and their implementation plans might vary due to the different situation in the country. The projects are categorised as “National Projects”, National Projects with Cross-Border Impact” and “Cross- Border Projects”. The Regional Action Plan is foreseen to be implemented during a six-year period and has a total budget for the four countries of 17 million USD.

Part I – Implementation Strategy, focuses specifically on the implementation of the projects, how these can be coordinated between the countries and how they can be funded.

The implementation of “National Projects” and “National Projects with Cross-Border Impact” shall be done by the relevant and identified Implementing Agencies in each country, whereas “Cross Border Projects” shall be implemented by MRC NAP.

Implementation of 12 Projects in each country cannot start at the same time due to lack of funding and human resources. An implementation schedule for the 12 projects in each country is proposed to have the best possible utilisation of resources e.g. the use of external consultants.

The coordination of the implementation process shall be carried out by a Regional Navigation Coordination Unit (RNCU) at MRC NAP, with active participation from the four countries.

The RNCU will ensure that the Regional Action Plan is being implemented, activities monitored and coordinated and will provide assistance regarding issues of cross-border interest such as best practices and harmonisation of regulations, standards and guidelines. This is anticipated to be a very complex process involving close liaison with the four countries and their Implementing Agencies. The RNCU shall be operational during the full implementation period and follow the Terms of Reference agreed upon by the countries (Annex 2).

The funding for all the Projects has not yet been secured. Therefore, as soon as the RNCU is operational, the work of securing funding for the RAP beyond what has already been allocated will be continued.

Several sources of funding have been identified i.e. funding from National Budgets, through Bilateral Donor Agreements, through MRC (Donors) and the private sector. Only Thailand and Viet Nam are expected to be able to provide full or partial funding through national budgets, whereas Cambodia and Lao PDR are expected to rely solely on funding from International Donors.

Co-financing from the private sector might be possible for specific equipment to be used for activities (pilot projects) in some the 12 projects and shall be investigated further.

Regarding the funding of the RNCU under MRC, there are ongoing positive discussions with the Belgian Government and it is anticipated that the funding can be secured from there. NAP has already started the process of securing funding from International Donors and this process will continue during the implementation of the Regional Action Plan. A period of six months at the beginning of the implementation is proposed to investigate the funding possibilities further.

Part II – Projects, includes all the identified projects and is presented in form of Project Documents ready for implementation.

The 12 projects are categorised in four different categories i.e. “Vessels”, “Ports”, “Environment” and “Waterways”. The twelve projects are:

National Projects:

- **Vessels:** Implementation of the International Maritime Dangerous Goods (IMDG) Code and Provision of Material Safety Data Sheets (MSDS) for Inland Waterway Vessels.
 - ⇒ *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.*
- **Vessels:** Emergency Response on Board Vessels.
 - ⇒ *To ensure that the shipmaster and the crew can manage and respond successfully to any emergency onboard a vessel.*
- **Ports:** Standards for the Planning, Design and Construction of Ports and Terminals.
 - ⇒ *To ensure that ports and terminals are planned, designed and constructed in a sustainable manner, in order to ensure that this provides the best achievable protection of public health, safety and the environment*
- **Ports:** Maintenance, Inspection and Testing of Critical Equipment.
 - ⇒ *To develop and implement a Maintenance, Inspection and Testing Program (MITP) for critical equipment in ports and terminals in order to secure their functioning in a safe and efficient manner and reduce the downtime required for repair or replacement.*
- **Ports:** Port Safety Health and Environmental Management System (PSHEMS).
 - ⇒ *To develop and implement a Port Safety, Health and Environmental Management System (PSHEMS) for ports and terminals handling dangerous goods.*
- **Environment:** National Vessel and Port Waste Management.
 - ⇒ *To establish efficient vessel and port waste handling in ports and terminals on the Mekong River.*

National Projects with Cross-Border Impact:

- **Vessels:** Mekong Tanker Safety Management.
 - ⇒ *To improve safety onboard inland waterway tankers through the preparation and implementation of a vessel safety management system, thereby reducing the risk of accidents.*
- **Vessels:** Minimum Standards for Vessels Design, Construction and Equipment.
 - ⇒ *To reduce shipping accidents from structural and technical shortcomings and improve the safety on-board inland waterway vessels by establishing minimum standards for vessel design, ship construction and equipment, and by developing a mechanism to certify and control that these standards are complied with*
- **Vessels:** Safe Manning on Inland Waterway Vessels.
 - ⇒ *To ensure that vessels are operated safely and manned with sufficient and qualified crew to prevent accidents or pollution from the handling and transport of dangerous goods and cargo.*
- **Ports:** Emergency and Oil Spill Response in Ports and Terminals.
 - ⇒ *To reduce the impact on the marine 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.*
- **Waterways:** Introducing Geographical Zones in the Mekong River and Related Technical and Operational Requirements for Tankers.
 - ⇒ *To assess, identify, define and approve the different Zones in the Mekong River, and ensure that the technical and operational requirements for tankers using these zones are met.*

Cross-Border Projects:

- **Environment:** Cross-Border Vessel and Port Waste Management.
 - ⇒ *To introduce cross border measures to incentivise vessel waste delivery, through implementation of economic incentives, harmonised uniform measures and a strengthening of cross-border inspection and communication.*

When the Regional Action Plan has been adopted by MRC and the four Member Countries, they agree to promote the implementation of the Plan.

The adoption of the Regional Action Plan expects the countries to share information and experiences on the implementation of their respective projects, on the formulation and adoption of national and regional standards, rules and regulations on navigation safety, and to harmonise regulations, standards and guidelines as much as possible; The countries are furthermore expected to support the strengthening of the regional and cross-border cooperation to ensure integration of the objectives of the Regional Action Plan.

The overall conclusion regarding the implementation of the Regional Action Plan is that it will provide safer and more environmentally sustainable transport of Dangerous goods on the Mekong River.

The overall and specific objectives shall be achieved by implementing National Projects, National Projects with Cross-Border Impact and Cross-Border Projects. The projects shall be implemented to

actively prevent and mitigate the environmental and safety risks associated with the carriage, handling and storage of dangerous goods.

The Regional Action Plan does not intend to establish a new supranational bureaucratic organisation that could result in both duplicating the efforts of existing organisations and imposing **additional** financial costs on MRC Member Countries. Instead, the Regional Action Plan should further focus and align actions and activities within the navigation sector in Member Countries.

TABLE OF CONTENTS

- ACKNOWLEDGEMENTS I
- FOREWORD III
- EXECUTIVE SUMMARY V
- ABBREVIATIONS XII
- DEFINITIONS XIII
- 1 INTRODUCTION 1
 - 1.1 GENERAL PROVISIONS 1
 - 1.2 BACKGROUND AND CONTEXT 1
 - 1.3 MRC NAVIGATION PROGRAMME 3
 - 1.4 JUSTIFICATION FOR A REGIONAL ACTION PLAN 5
- 2 FROM RISK ANALYSIS AND RECOMMENDATIONS TO THE REGIONAL ACTION PLAN10
- 3 OBJECTIVES 13
- 4 IMPLEMENTATION CHALLENGES 14
 - 4.1 INSTITUTIONAL CAPACITY TO HANDLE TRANSPORT OF DANGEROUS GOODS 14
 - 4.2 EXISTING LEGAL PLATFORMS 14
 - 4.3 HUMAN AND QUALIFIED RESOURCES AVAILABLE BOTH AT NATIONAL AUTHORITIES AND IN THE PRIVATE SECTOR 14
 - 4.4 FINANCIAL RESOURCES 15
- 5 IMPLEMENTATION 17
 - 5.1 IMPLEMENTATION 18
 - 5.1.1 Identified Projects 18
 - 5.1.2 Management, Implementation and Implementing Agencies 19
 - 5.1.3 Implementation Schedule 19
 - 5.2 COORDINATION 19
 - 5.2.1 Regional Navigation Coordination Unit 20
 - 5.3 BUDGET AND FUNDING OF THE REGIONAL ACTION PLAN 22
 - 5.3.1 Overall Budget 22

5.3.2	Funding of RAP through national budgets.....	23
5.3.3	Funding of RAP through external donors	23
5.3.4	Funding of RAP with assistance from the private sector.....	23
5.3.5	Funding of RNCU activities	23
5.3.6	Six-month funding activity plan	23
5.4	IMPLEMENTATION SCHEDULE	24
6	AGREEMENT	26
6.1	PRINCIPLES	26
6.2	AGREEMENT.....	26
	ANNEX 1: SUMMARY OF PROJECTS.....	27
	ANNEX 2: TERMS OF REFERENCE FOR THE REGIONAL NAVIGATION COORDINATION UNIT (RNCU)	41

ABBREVIATIONS

ADB	Asian Development Bank
AIS	Automatic Identification System
BAT	Best Available Technology
BEP	Best Environmental Practice
COP	Code of Practice
CS	Classification Societies
EC	European Commission
EMS	Environmental Management System
HELCOM	Helsinki Commission
IFI	International Financial Institutions
ILO	International Labour Organization
IMO	International Maritime Organization
ISO	International Organization for Standardization
IWT	Inland Waterway Transport
Lao PDR	Lao People's Democratic Republic
MLC	Maritime Labour Convention
MRC	Mekong River Commission
MoU	Memorandum of Understanding
MSC	Maritime Safety Committee
NAP	Navigation Programme
NCG	National Coordination Group
NWG	National Working Group
OSH	Occupational Health and Safety
PEMSEA	Partnership in Environmental Management for the Seas of East Asia
PR	Public Relations
PSC	Port State Control
PWM	Port Waste Management
PWMM	Port Waste Management Manual
RAP	Regional Action Plan
RNCU	Regional Navigation Coordination Unit
RWG	Regional Working Group
TA	Technical Assistance
ToR	Terms of Reference
TNA	Training Needs Analysis

DEFINITIONS

National Project

A National Project is a project that can be implemented by a country itself with no or only very limited cross-border impact.

National Project with Cross-Border Impact

A National Project with Cross-Border Impact is a project that can be implemented by a country itself but with part of the project having significant cross-border impact. Such cross-border impacts can include the need for harmonising legislation, standards or guidelines, thus requiring regional coordination by the MRC Navigation Programme.

Cross-Border Project

A Cross-Border Project is a project implemented on a regional basis by the MRC Navigation Programme with inputs and participation by each MRC Member Country. Cross-border projects address issues of cross-border relevance only.

Inland waterway navigation

Navigation on lakes, streams, rivers, canals, waterways, inlets, bays and the like.

National Working Group

National Working Groups have been established for all four countries to help prepare the Regional Action Plan. Each consists of three national experts (for vessels, ports and the environment). The groups have played a very important role in reviewing and commenting on the project documents and in national workshops involving Line Agencies.

Line Agency

Line Agencies are national agencies within corresponding Ministries that have been identified based on their relevance for the RAP preparation. They have been involved in reviewing and commenting on the project documents and participating in national workshops

Maritime Navigation

Refers to seagoing transport with seagoing vessels between seaports and/ or inland waterway ports/terminals

Maritime Safety

Maritime Safety refers to the prevention and management of accidents concerning persons, installations or the environment. These threats are considered an involuntary matter, i.e. non-intentional.

Maritime Security

Maritime Security refers to the prevention of illicit acts against persons and goods on board ships, in port facilities or in ports/terminals. These threats are considered a voluntary matter, i.e. intentional.

Protection of the Marine Environment

Protection of the Marine Environment relates to any measures and/or installations on board ships and in ports/terminals to avoid or minimise any impact on the marine environment following operational or accidental events from the normal operation of a ship.

1 INTRODUCTION

1.1 GENERAL PROVISIONS

The Regional Action Plan (RAP) for Sustainable Transport of Dangerous Goods along the Mekong River for 2015 to 2020 determines the main directions of cooperation on nautical safety and environmental protection within and between Cambodia, Lao PDR, Thailand and Viet Nam. The identification of National and Cross-Border Projects to be implemented aims to create a highly efficient regional inland navigation transport system which combines national riverborne transport programmes with the regional plans for the Mekong River transport corridors. The RAP also aims to promote safe and environmentally sustainable river transport systems, which meet the economic, social, environmental and safety needs of the countries to help reduce regional disparities and connect the inland waterways with a regional transport infrastructure.

The RAP should be considered as a general framework for river transport cooperation between the countries of the Lower Mekong Basin with particular focus on nautical safety and environmental protection. This means that national measures will be supplemented by regional and cross-border efforts to reach the objectives of the RAP.

The Plan shall be seen as a first step to formulate the main priorities of activities, to identify measures and to support the existing framework for further regional cooperation. The RAP shall also be seen as a part of the Navigation Programme of the Mekong River Commission.

The RAP is elaborated for a six-year period under which one to three-year project documents have been developed for cross-border and national implementation.

1.2 BACKGROUND AND CONTEXT

The Mekong River is an international river running through six countries and an important gateway to trade centres in Southeast Asia and beyond. To fully realise the trade and transport potential, a regional development approach is needed.

The Mekong River consists of upper and lower basins. This Regional Action Plan mainly focuses on the Lower Mekong Basin countries of Cambodia, Lao PDR, Thailand and Viet Nam. These countries are currently implementing international conventions on maritime safety and environmental protection, which shall lead to a sustainable and efficient multi-modal transport on the Mekong River. However, there are no international rules, regulations or conventions for inland waterway navigation. An important part of Regional Action Plan projects will deal with establishing and harmonising inland navigation standards.

Both the Lower and Upper Mekong Basins have considerable variation in physical, cultural, economic and social conditions, which translate into different needs for transport infrastructure provisions. In general, however, transport networks in the region are still somewhat embryonic and require further organisation and development, especially with regard to nautical safety and environmental protection.

The natural resources, environment and quality of the water in the Mekong River are increasingly under stress caused by solid waste, sewage and industrial waste water disposed into the river with no or limited treatment. If not well managed, the carriage, handling and storage of dangerous goods in ports will contribute to such developments.

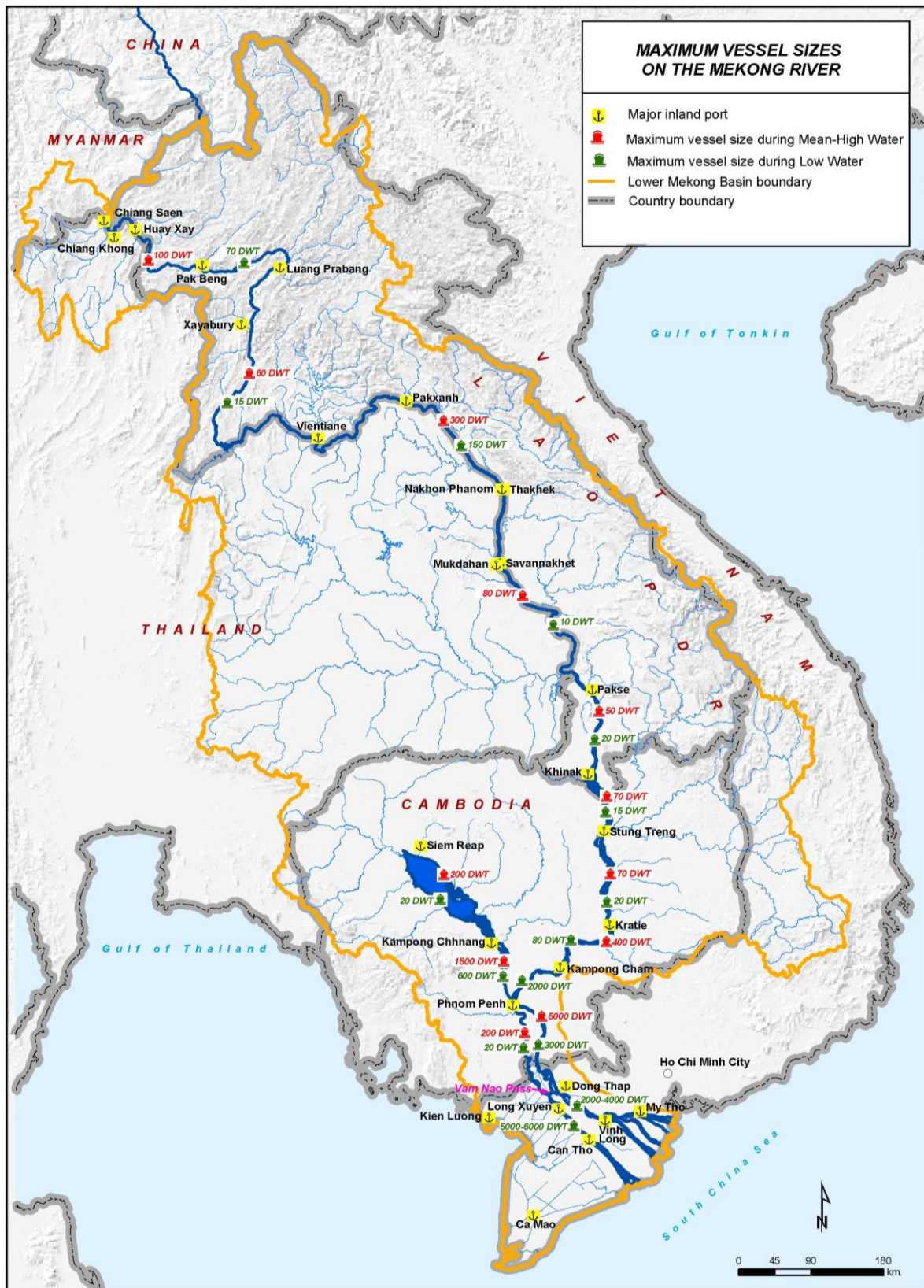


Figure 1 Maximum Vessel sizes and major Inland Ports on the Mekong River

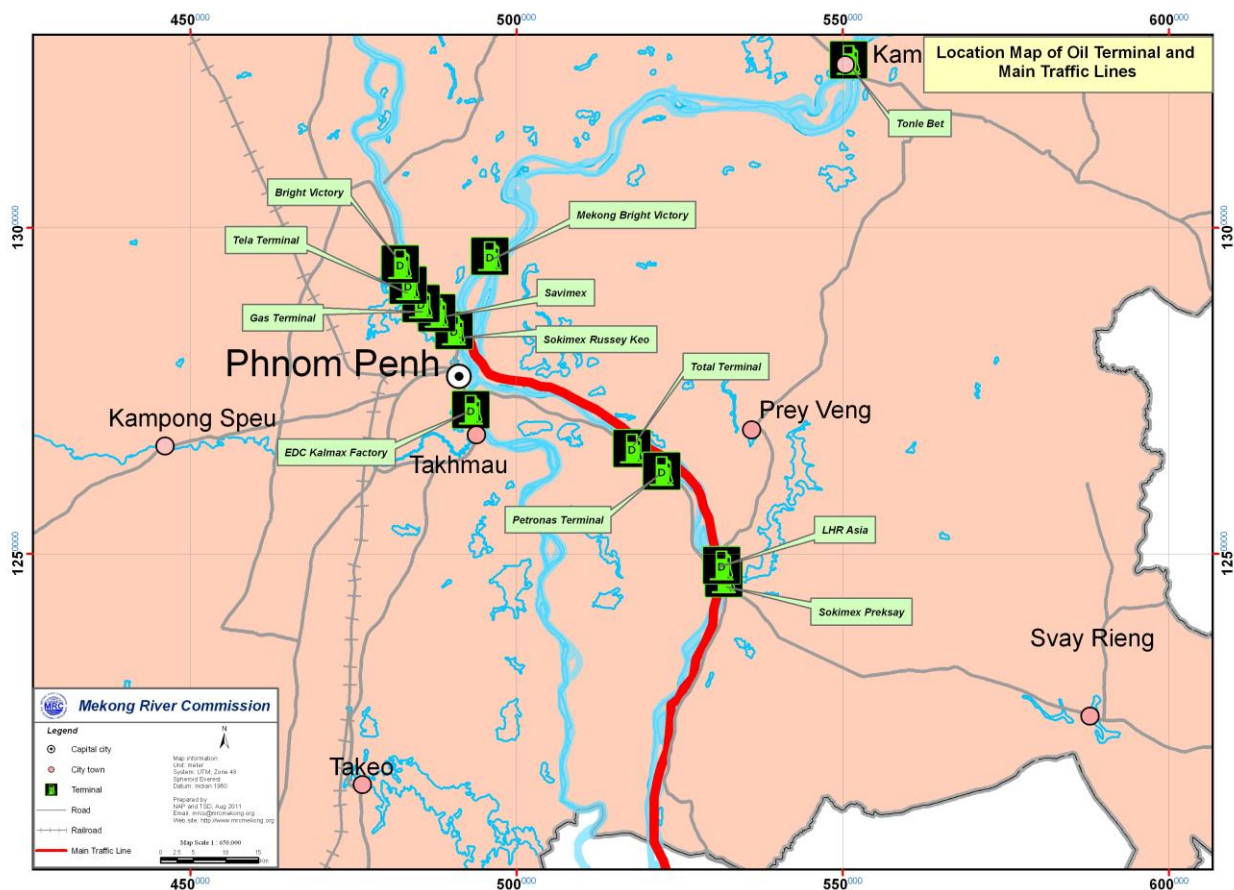


Figure 2 Location of Petroleum Terminals along the Mekong River in Cambodia

Ports and terminals represent focal nodes in the multi-modal freight transport chain. Even the slightest deficiency can result in significant negative repercussions along the entire chain. In the Lower and Upper Mekong Basins, ports and terminals are vital elements in the regional transport network, acting as terminal and interim nodes along the river.

Increases in transport volumes of dangerous goods along the Mekong River require the MRC Member Countries to adhere to consistent and coordinated development of their transport infrastructure policies, especially with regard to *safety, security and protection of the environment*.

Safety refers to the prevention and management of **accidents** concerning persons, installations or the environment. These threats are considered an involuntary matter, i.e. non-intentional.

Security refers to the prevention of **illicit acts** against persons and goods on board ships, in port facilities or ports/terminals. These threats are considered a voluntary matter, i.e. intentional.

Protection of the Marine Environment relates to any measures and/or installations on board ships and in ports/terminals to avoid or minimise any impact on the marine environment following operational or accidental events from the normal operation of a ship.

1.3 MRC NAVIGATION PROGRAMME

The **MRC Navigation Strategy** calls for harmonising and enforcing common rules and regulations on environmental protection and safety measures. The Strategy also highlights a strong need for raising awareness of environmental protection and risk control within the navigation sector.

The **MRC Navigation Programme (NAP)** aims are to improve inland water transport (IWT) and maritime navigation to increase international trade among riparian countries and between the MRC

Member Countries and their Asian partners. An institutional monitoring system and common navigation rules and regulations will reduce the number of accidents and minimise the risk of pollution. A key responsibility for the programme is to find the optimal balance between economic growth and sustainable development.

The NAP's objective is to promote freedom of navigation and increase international trade opportunities for the mutual benefits of Member Countries, and to assist in coordination and cooperation in developing effective and safe waterborne transport in a sustainable and protective manner for the waterway environment. The Programme addresses issues as diverse as regional transport planning and the comparative advantages of waterborne transport, a new legal framework for Mekong navigation, measures to strengthen safety and environmental protection, improved information and coordination systems, and institutional development through capacity and partnership building within the navigation sector. In addition, the NAP seeks to develop national and regional management capacities not only to ensure that the Programme is implemented but also to strengthen the voice and role of the navigation sector in national and regional development planning. Broadly speaking, the NAP focuses on three main areas: navigation safety and efficiency, the legal framework for cross-border transport (trade facilitation) and environmental sustainability.

Since 2006, many of the projected outputs of the original Programme have been achieved, including initiating NAP implementation structures, formulating and signing the Agreement on Waterway Transport between Cambodia and Viet Nam, preparing a legal navigation framework between Lao PDR and Thailand, conducting a risk assessment and preparing a risk management strategy for the transport of hazardous cargos, procuring and installing buoys and beacons, installing two tidal monitoring stations at the Mekong and Bassac estuaries, developing an Action Plan for Mekong Navigation in Cambodia, safety was also greatly improved between Houey Say and Luang Prabang through the development of a GPS navigation Safety Guided System and constructed visual Low Water Alert System at Khon Din and Keng Phouan in Lao PDR, conducting condition surveys for navigation improvement, cooperating with the People's Republic of China and Myanmar, and strengthening the capacity of relevant officials and staff of Line Agencies in Member Countries.

With a view to address newly emerging issues in the region and as requested by the high-profile Navigation Advisory Committee, the NAP has also implemented several activities that were not included in the original programme. These include providing inputs to MRC Procedures for Notification, Prior Consultation and Agreement (PNPCA) for proposed hydropower projects.

The NAP is working towards:

1. **Overcoming funding constraints** with the aim of tapping different sources of financing to ensure that sustainable and sufficient funds will be available to successfully initiate and complete the investments required in regional transport infrastructure and other projects;
2. **Making national and cross-border transport on the Mekong River safe, secure and sustainable** with the aim of ensuring that the regional transport system has both social and environmental aspects, and that it actively promotes the safety, security and protection of users, property, the general public and the environment that might be involved in or affected by the system; and
3. **Strengthening and modernising the institutional dimensions of transport** with the aim of ensuring the existence of strong, competent and well-designed institutions in Member Countries that can guide, support and nurture the future progress and development of the regional navigation system.

1.4 JUSTIFICATION FOR A REGIONAL ACTION PLAN

The Mekong River and its main tributaries are an important transport corridor for the trade of cargo, particularly the Upper Mekong between China and Thailand, and the Lower Mekong between Cambodia and Viet Nam. Cargo and fuel throughput and trips by vessels have increased significantly in the Mekong Delta with the development of a deep-sea port at Cai Mep, which allows exports from Cambodia and Viet Nam to be shipped directly to major world markets. At the same time, a new Mekong port built in Chiang Saen in northern Thailand, is paving the way for a sharp increase in exports of fuel to China.

In 2009, the Navigation Programme consulted with port authorities, vessel associations, petroleum companies, transport operators and relevant ministries in Cambodia, Lao PDR, Thailand and Viet Nam to assess growing transport of dangerous goods along the Mekong. Unfortunately, the design of vessels for transporting such goods is lagging in Member Countries and does not provide sufficient protection for the cargo in case of accidents.

The carriage, handling and storage of dangerous goods are significant in Cambodia. Gasoline, diesel, jet fuel and other petroleum products are imported from Viet Nam and primarily stored at 12 large petroleum terminals on the Mekong and Tonle Sap Rivers. The petroleum products are transported on inland barges from petroleum terminals in Viet Nam. Other dangerous goods including ammonium nitrate, fertilisers and toluene are imported through Phnom Penh Autonomous Port by cross-border transport with Vietnamese and other foreign-flagged vessels. The transport of dangerous goods and all cargo has increased and is expected to rise further with the development of Phnom Penh Port II on the Mekong River downstream from Phnom Penh (which commenced operations in 2012).

In the Lao PDR most dangerous goods are transported by ferry crossings and include gasoline, diesel, asphalt, fertilisers and construction materials. Tanker trucks containing dangerous goods load onto ferries and transport goods from Thailand to Lao PDR. Km 4 State Port Authority has fuel-storage capacity for refuelling trucks, cranes and equipment onsite. There are a number of small refuelling stations along the Mekong River for cargo, passenger and small fishing and other vessels. Some Lao cargo vessels have changed the configuration of their cargo holds and changed them in fuel tanks unfortunately without proper technical safety and construction standards. Accidents and explosions have already occurred because of this. One of the main issues identified by the Risk Analysis was the management of solid and liquid wastes and limited awareness of the risks associated with transport and storage of dangerous goods.

The main navigation activity in Thailand is the import and export of general cargo to the People's Republic of China through Chiang Saen Port in the Upper Mekong. Cargo throughput and ship calls are increasing through Chiang Saen and the new Chiang Saen Port II (which commenced operations in 2012), with imports and exports set to increase even further. The transport of dangerous goods is also increasing in Thailand through the export of petroleum products through Keawalee Terminal in Chiang Saen, a privately-owned terminal used to transfer diesel and gasoline from tanker trucks to inland barges from the People's Republic of China and Myanmar.

Ferry crossings continue to transport tanker trucks containing gasoline, diesel and asphalt across the Mekong River to Lao PDR. General cargo, construction materials and consumables are also carried across the Mekong River at the ferry crossings.

Inland waterborne transport is well advanced in Viet Nam where there are a number of inland and maritime ports helping to boost economic growth. The transport and storage of dangerous goods is extensive in Viet Nam. There are a number of petroleum terminals which use domestic tankers to supply refuelling stations and industry for power generation.

Tankers are used to export petroleum products to Cambodia from terminals in Ho Chi Minh City and large tankers are also used for domestic trade from Can Tho and My Tho to the west of the Mekong Delta.

Awareness of dangerous goods, environmental protection, impacts of oils spills and safety requirements are currently limited in all of the Member Countries. Public information and awareness programmes will need to be developed to raise the awareness of all waterway users.

Taking all the shortcomings and risks discussed above into consideration, it was decided to prepare a Regional Action Plan further building on the findings and recommendations of the risk analysis as a starting platform. This resulted in the RAP which shall act as the guiding document for Member Countries and the MRC on navigation safety and environmental protection.

The need for a Regional Action Plan is underlined by the continuous increase in inland waterway transport, which increases the risks of accidents such as fires, explosions and oil spillages that require efficient emergency response. Increased transport also means increased waste generation on board vessels and in ports and terminals. If not handled properly, this will result in long-term negative environmental impacts and adversely affect the livelihoods of people living along the river.

An important aim of the RAP is to meet international requirements for inland navigation safety and environmental protection from ports, terminals and tankers/ships when they exist, and establish adapted standards in the region. Although individual countries are at different levels, they all have an interest in the compliance of neighbouring countries with relevant Conventions, Regulations and other Guidelines to ensure the highest level of safety and environmental protection.



Figure 3 The motor tanker 'Song Tien 26' on fire on May 4, 2014, in Viet Nam



Figure 4 Firefighters are trying to extinguish the fire on the motor tanker 'Song Tien 26'. According to Tuoi Tre Newspaper, the oil tanker suddenly exploded and burst into flames, killing two people aboard and injuring two others at a port in southern Vietnam on May 4, 2014. The ship, which was carrying about 630 cubic meters of oil, was pumping out its load at that time. As fire spread on the tanker, the captain managed to drive it out of the port towards a small islet in the Dong Nai River, some witnesses said another boat pushed the tanker out of the port. Leaked oil from the tanker caused huge flames on the river surface.



Figure 5 Lao boat, Sokphaxay N°0120, carrying 46,000 litres of gasoline, exploded on November 8, 2014 on Thai territory, seriously burning two crew members



Figure 6 Fire on a passenger boat carrying fuel tanks on the Tonle Sap River, Cambodia



Figure 7 River pollution



Figure 8 Pollution in the Mekong River



Figure 9 "boat overcrowding"

2 FROM RISK ANALYSIS AND RECOMMENDATIONS TO THE REGIONAL ACTION PLAN

The Risk Analysis of the Carriage, Handling and Storage of Dangerous Goods was initiated in December 2010 as Phase 1. The objective was to identify and determine the magnitude of risks associated with the carriage, handling and storage of dangerous goods along the Mekong River and determine the prevention and mitigation measures required to manage the risks. Phase 1 detailed the baseline conditions and determined the priority areas for improving the transport of dangerous goods in each of the MRC Member Countries: Cambodia, Lao PDR, Thailand and Viet Nam. The risk analysis project was a significant body of work involving local and international experts encompassing the establishment of National Working Groups for data collection, and capacity building through training in risk management and the risks associated with the transport of dangerous goods. The result of this work was a two-volume publication, Carriage, Handling and Storage of Dangerous Goods along the Mekong River comprising the Risk Analysis (Volume I) and Recommendations (Volume II). The outcomes provide a useful framework to ensure a balance between inland water transport and environmental protection.

In 2012 MRC NAP started a pilot project in Thailand to implement the ‘Sustainable Management of Dangerous Goods at Chiang Saen Commercial Port and the DG management plan could be applied to other inland ports in the Mekong Basin. The main Mekong navigation activity in Thailand is the import and export of general cargo to PR China through the existing Chiang Saen Port in the Upper Mekong. The conditions for transferring the dangerous goods were not acceptable, as confirmed by the National Experts through the Risk Assessments that were conducted in 2011. Furthermore, Ports Authority of Thailand and the Thailand Marine Department raised concerns regarding the arrival of foreign flagged vessels that do not meet appropriate standards hence there should also be a vessel component included in the project. Minimum safety requirements and an inspection process had to be developed for vessels loading DG at Chiang Saen Commercial Port. The NAP team then assisted PAT and Thailand Marine Department to establish a management plan for dangerous goods for Chiang Commercial Port including:

- Risk assessment of proposed activities involving DG;
- Signage and segregation requirements at designated areas for DG;
- Training and capacity building;
- Waste management plan for all operations at Chiang Saen Commercial Port; and
- DG Management Plan for Chiang Saen Commercial Port.

By September 2012 the first drafts of the Dangerous Goods Management Manual (DGGM), Waste Management Plan (WMP) and Mekong Vessel Inspection Scheme (MVIS) were formulated, edited, and revised, and by October 2012 the Training Packages prepared and Full Training was conducted for Lao and Thai Experts, Thai Marine Department, Port Stevedores and Managers.

Phase 2 began in June 2013 to prepare the Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River consisting of national and cross-border project documents as a basis to reduce the risks of accidents, spillages and pollution and enhance emergency response

and regional coordination. The RAP also includes an Implementation Strategy for the national and cross-border projects.

The national and cross-border projects are based on consolidated recommendations approved and presented in Phase 1. The consolidation of these recommendations into projects has been discussed and reviewed by each MRC Member Country through national consultations with National Working Groups and Line Agencies.

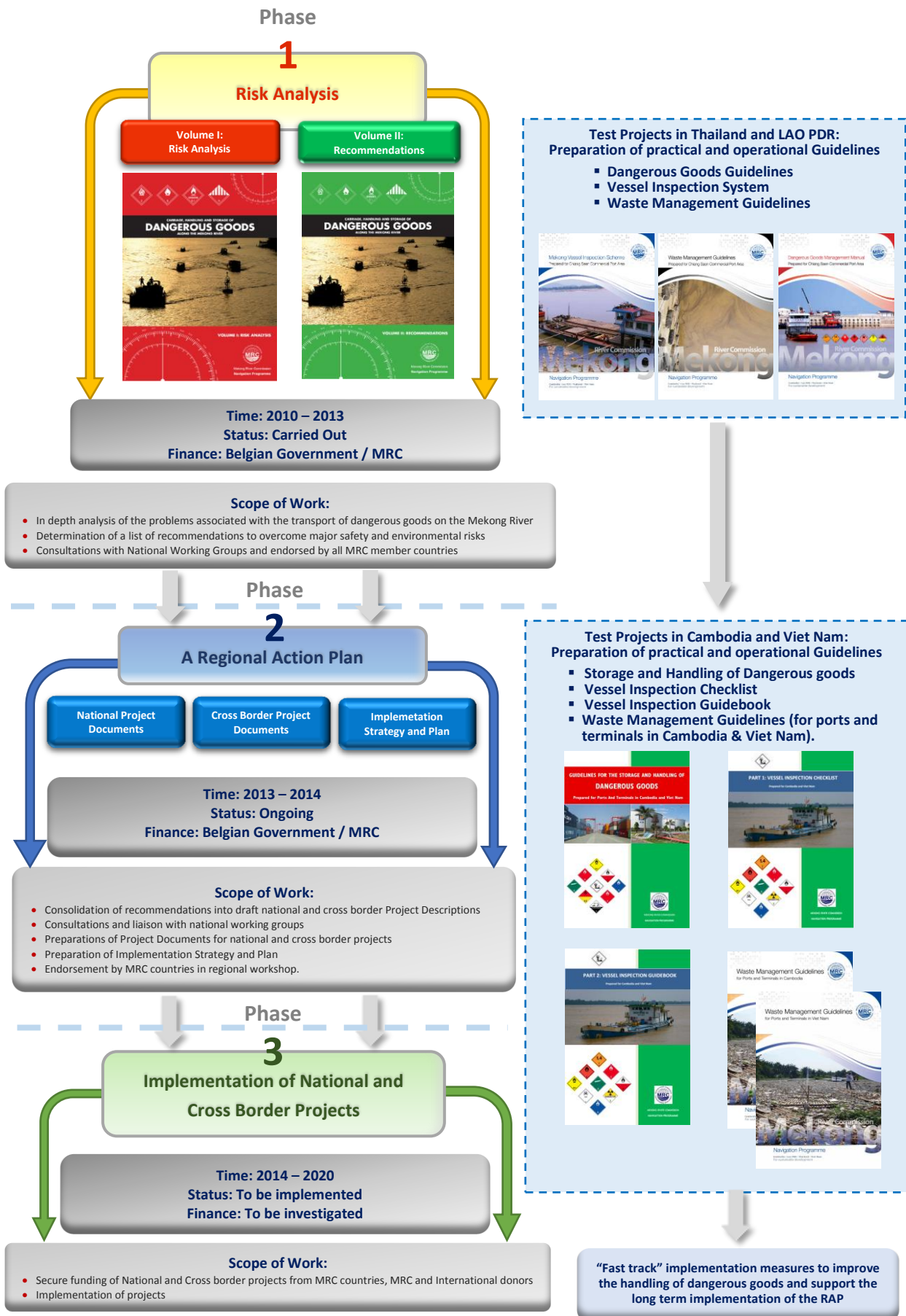
The Implementation Strategy has been prepared to describe how the projects should and could be implemented taking into account the institutional capacity of the MRC, regional agencies and the proposed Implementing Agencies within the Member Countries.

Parallel to the preparation of the RAP has been the development of Guidelines on the Storage and Handling of Dangerous Goods, Guidelines on Vessel Inspection System and Guidelines on Waste Management for Cambodia and Viet Nam. These three guidelines, and the extensive training carried out for using them, are seen as the first step in implementing the Regional Action Plan.

Within the Member Countries, specific legislation on managing navigation spills is limited. Only Thailand and Viet Nam have the necessary personnel and equipment to respond effectively to emergencies. In general, there is limited enforcement or legislative and regulatory guidance prescribing how to prevent navigation spills and what to do in case of an accidental or operational spill. With the need to develop adequate regulations, operational plans and procedures to ensure the risks of pollution can be controlled, the initial consultation was used to formulate the terms of reference for a Risk Analysis.

To implement the RAP, Phase 3 – Implementation is being planned.

Diagram 1: Regional Action Plan and Test Projects



3 OBJECTIVES

The implementation of the RAP will be an important step towards more sustainable transport of dangerous goods. Member Countries will implement the plan at the national level in close coordination with the MRC with assistance from bilateral development partners and other agencies such as donors and development banks.

The Preparation of a Regional Action Plan (Phase 2) has an **overall objective** "to ensure Efficient, Safe and Secure Carriage, Handling and Storage of Dangerous Goods on the Mekong River in a Sustainable Manner."

The **specific objectives** with regard to Cambodia, Lao PDR, Thailand and Viet Nam are to:

- increase safety on board vessels with special focus on tankers;
- increase safety in ports and terminals;
- minimise the environmental impact of navigation on the Mekong River with improved waste management;
- secure safe navigation on the Mekong River; and
- increase human capacity at inland waterway and environmental authorities and the private sector.

The overall and specific objectives shall be achieved by implementing National Projects, National Projects with Cross-Border Impact and Cross-Border Projects. The projects shall be implemented during Phase 3 to actively prevent and mitigate the environmental and safety risks associated with the carriage, handling and storage of dangerous goods.

The Regional Action Plan does not intend to establish a new supranational bureaucratic organisation that could result in both duplicating the efforts of existing organisations and imposing additional financial costs on MRC Member Countries. Instead, the RAP should further focus and align actions and activities within the navigation sector in Member Countries.

Summaries of the national and cross-border project documents and the Implementation Strategy are presented in Annex 1.

Detailed descriptions of the national and cross-border project documents and the Implementation Strategy are presented in Part II of this report.

4 IMPLEMENTATION CHALLENGES

The four MRC Member Countries are at different levels when it comes to their ability to implement the Regional Action Plan. There are significant differences regarding:

- a. institutional capacity to handle transport of dangerous goods;
- b. existing legal platforms;
- c. human and qualified resources available at both national authorities and in the private sector; and
- d. financial resources.

4.1 INSTITUTIONAL CAPACITY TO HANDLE TRANSPORT OF DANGEROUS GOODS

There are national and regional rules and regulations for the storage, handling and carriage of dangerous goods including petroleum products in the MRC Member Countries. However, the implementation is limited and therefore also the compliance. There is a strong need to develop appropriate and harmonised standards for the MRC Member Countries to ensure compliance and continuous improvement. In each of the countries, there are vessels, ports and terminals, waterways and environmental authorities responsible for implementing and enforcing rules and regulations for inland waterway transport. Their capacity needs to be improved to ensure sustainable transport on the Mekong River.

4.2 EXISTING LEGAL PLATFORMS

A brief international benchmarking analysis reveals that the current legal regime pertaining to transport of dangerous goods on the Mekong River is imperfect, with important gaps and major differences within and between the riparian countries. The current regime does not cover important aspects of the transportation of dangerous goods by inland waterways such as dangerous goods packed in limited quantities, the construction and testing of packaging, the training of crews (with the exception of Viet Nam), the construction of vessels and the segregation of dangerous goods (again with the exception of Viet Nam).

As a result, it appears that there is a need to establish comprehensive, harmonised and up-to-date legal rules on the transport of dangerous goods on the Mekong both at national and sub-regional levels.

4.3 HUMAN AND QUALIFIED RESOURCES AVAILABLE BOTH AT NATIONAL AUTHORITIES AND IN THE PRIVATE SECTOR

National waterway experts are responsible for developing safe and environmentally sustainable waterway transport. They need to analyse any physical obstructions, hazards and risks to public and private shipping activities on the waterway. The waterway experts shall identify any hazards to the transport on the waterways during different stages of water levels (dry, medium or high) and time

(day or night) to determine their possible impacts in the event of an incident. The experts are also expected to provide recommendations on the suitability of the waterways by different ships carrying dangerous goods. In addition, the private sector shall cooperate with national waterway experts in providing access to visit tanker terminals and explain more in detail the process of carrying, handling and storing of solid and liquid dangerous goods in their own ports or terminals and eventually comply with regulations.

The waterway experts shall furthermore focus on risk prevention and examine the emergency response mechanisms that are available to respond to any emergency.

4.4 FINANCIAL RESOURCES

The four countries are at different levels when it comes to economic development. Although all countries have experienced economic growth during the past five years, there are still significant differences. This means that some countries have a better opportunity to finance their RAP implementation through national budgets. Other countries will either rely on external donor assistance or delay implementation until the financial resources are available.

Still, there seems to be a need to strengthen institutional and private sector capacity in all four countries. Extensive capacity building is foreseen in each country and this is addressed in each of the projects.

Projects identified in the RAP require different implementation approaches:

- National Projects require national implementation;
- National Projects with Cross-Border Impact require national implementation but also regional coordination; and
- Cross-Border Projects require regional implementation and coordination (such projects can involve all four countries or be bilateral only).

Lack of regional coordination can easily lead to insufficient and ineffective implementation. For

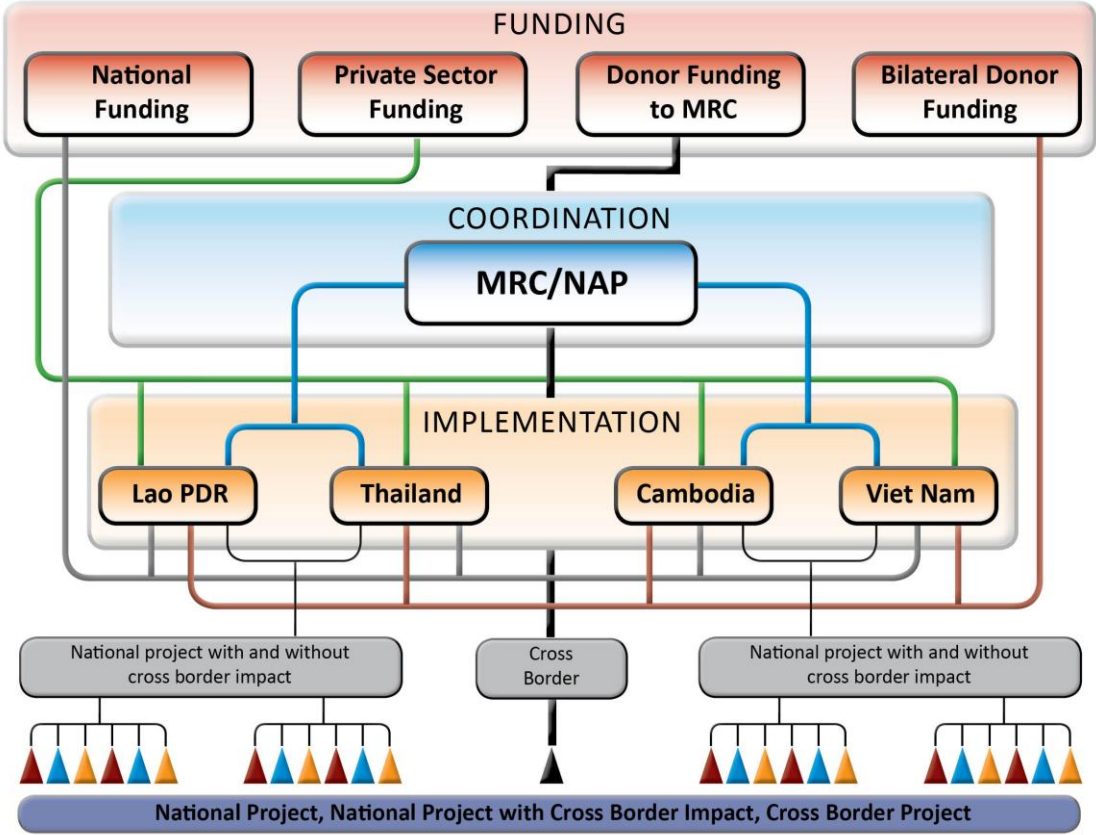
Cross-Border Projects or National Projects with Cross-Border Impact, MRC seems to be the most relevant regional institution to undertake such coordination and, with the right momentum, ensure harmonisation between countries to the extent possible in areas such as regulations and standards.

Recommended Implementing Agencies will be responsible for implementing National Projects and National Projects with Cross-Border Impact. It is proposed that a Regional Navigation Coordination Unit be established at the MRC Secretariat to coordinate the implementation of the projects. The assigned coordinating and working links between the RNCU and the Line Agencies in the Countries will go through the Secretariats of each National Mekong Committee.

Some of these projects should preferably be implemented at the same time in all countries to obtain synergies in terms of budget savings and harmonisation efforts.

The chart below outlines the three key modalities of implementing, coordinating and funding the Regional Action Plan:

Diagram 2: Implementation Strategy¹



Funding for 12 projects in four countries may be difficult to obtain. To implement the RAP, the following funding sources have been identified:

- national funding;
- international donor funding to individual countries;
- international donor funding to MRC to implement part of the RAP (cross-border activities); and
- private sector funding.

¹ Important Note: all coordination between the RNCU and the Line Agencies or Private Sector will go through the Secretariats of the National Mekong Committees

5 IMPLEMENTATION

At the regional level, implementation of the RAP will initially be coordinated by an MRC Regional Navigation Coordination Unit (RNCU) and initially supported financially by the MRC.

Funding to implement National Projects and Cross-Border Projects should subsequently be sought from national budgets, the private sector and international donors.

Eventually, and once the RNCU has become a self-sustainable and officially recognized inter-regional structure, the Member Countries should allocate funds for activities in their national budgets after the six-year funding provided by MRC.

The RNCU and Member Countries shall investigate further the possibilities for external donor funding through a six month “funding pre-activity” as soon as the RNCU has been established and staffed.

To facilitate the realisation of activities, partnerships with other relevant projects and/or initiatives, a framework should be established to provide for co-financing and as a basis for the involvement of relevant international financial institutions.

MRC Member Countries, under the auspices of the RNCU, will unanimously adopt the identified and jointly agreed documents for National Projects and Cross-Border Projects on which the governments or relevant national agencies or administrations must act in their national programmes and legislation.

For each Project with Cross-Border Impact identified and agreed upon, the RNCU shall act as lead to ensure coordination of activities, which might be undertaken at the national or regional level to achieve the overall objectives set.

National authorities will assist the RNCU in coordinating its activities for their assigned projects and cross-border activities. They will also oversee implementation of the RAP for their specific National Projects and, where required, develop specific implementation plans. Through this, the Member Countries will contribute to the overall regional coordination and implementation of the RAP.

Each Member Country should finance its own National Project documents through national budgets or funding from other sources, although RNCU and MRC will assist in attracting funding from international donors, especially for cross-border activities.

The RNCU will be chaired by the MRC Navigation Programme for the first three years. Thereafter, it shall be considered that the chair can rotate between Member Countries every 12 months, according to their alphabetical order in English.

The RNCU Chair will meet on a quarterly basis and undertake to:

- organise RNCU meetings;
- develop and circulate annual work plans and status reports;
- coordinate the implementation of activities under the RAP;
- monitor progress of the implementation of the RAP; and
- coordinate and assist with funding applications for projects involving more than one Member Country (cross-border).

The RAP will be adopted for a six-year year period starting in 2015 after its adoption until 2020. This first edition of the RAP is therefore operational from the date of its adoption. Every second year, the

RNCU will prepare a revised implementation plan for the RAP based on the actual implementation progress, subsequently submitted for approval by the Member Countries.

The implementation of the Regional Action Plan needs to address three modalities of:

1. Implementation;
2. Coordination; and
3. Funding.

5.1 IMPLEMENTATION

5.1.1 Identified Projects

The Risk Analysis and Recommendations of Phase 1 identified a number of high-risk areas and provided several recommendations on how to improve the safety of navigation on the Mekong River. These recommendations have been consolidated into the following projects, which now form part of the RAP:

National Projects:

- Implementation of the International Maritime Dangerous Goods (IMDG) Code and Provision of Material Safety Data Sheets (MSDS) for Inland Waterway Vessels (4);
- Emergency Response On Board Vessels (5);
- Standards for the Planning, Design and Construction of Ports and Terminals (6);
- Maintenance, Inspection and Testing of Critical Equipment (7);
- Port Safety Health and Environmental Management System (PSHEMS) (8); and
- National Vessel and Port Waste Management (10).

National Projects with Cross-Border Impact:

- Mekong Tanker Safety Management (1)
- Minimum Standards for Vessel Design, Construction and Equipment (2)
- Safe Manning on Inland Waterway Vessels (3)
- Emergency and Oil Spill Response in Ports and Terminals (9)
- Introducing Geographical Zones in the Mekong River and Related Technical and Operational Requirements for Tankers (12)

Cross-Border Projects:

- Cross-Border Vessel and Port Waste Management (11)

Detailed project descriptions are provided in Part II (project documents).

5.1.2 Management, Implementation and Implementing Agencies

Most projects focus on issues of national interest but also, to some extent, address issues of cross-border interest due to the need to harmonise regulations, standards and guidelines to the extent possible.

It is expected that all projects (except those which are solely cross-border projects) shall be managed and implemented on a national basis by the identified Implementing Agency for each country. The identified Implementing Agencies are listed in Annex 1 and further described in more detail in Part II under each project. The identified Implementing Agencies will hold overall responsibility for project implementation (activities and budgets to reach outputs and objectives) but shall carry out the implementation in close cooperation with other relevant identified agencies and authorities.

In principle, countries can implement solely national projects without any involvement from outside. It is, however, recommended that the MRC Navigation Programme play an overall coordinating role not only to monitor the implementation of the Regional Action Plan but also to assist where cross-border issues are involved.

For National Projects, each MRC Member Country will therefore follow its own Plan of Implementation reflecting individual needs, priorities, institutional capacity and financial resources.

Likewise for National Projects with Cross-Border Impact, although the NAP will assist and be partly involved to ensure harmonisation of relevant identified cross-border issues. To some extent, the NAP can also provide funding for activities that have a cross-border impact.

Due to their nature, Cross-Border Projects will be implemented and funded by the NAP as they are solely related to issues of cross-border interest.

5.1.3 Implementation Schedule

National Projects, National Projects with Cross-Border Impact and Cross-Border Projects have been prioritised for implementation during the six-year implementation period foreseen. The length of the implementation period depends especially, however, on access to funding and the institutional capacity of each country. Some countries will be able to implement their parts of the RAP in shorter periods than other countries. Furthermore, and depending on the nature of funding, it will make sense for some countries to implement simultaneously some projects, especially National Projects with Cross-Border Impact where some activities have a cross-border nature and require harmonisation. This will save time and budgets.

It should be noted, however, that the “legalisation process” takes longer in some countries, which might delay the proposed implementation period. It is therefore recommended that the proposed Regional Navigation Coordination Unit (see below) agree on the schedule in cooperation with the countries.

5.2 COORDINATION

Detailed coordination is required to implement the Regional Action Plan to ensure that it is being implemented, to monitor activities and progress and finally to assist regarding issues of cross-border interest. This is anticipated to be a very complex process involving close liaison with the four countries and the respective Implementing Agencies. To secure smooth implementation, it is proposed to establish a Regional Navigation Coordination Unit at the MRC Secretariat.

5.2.1 Regional Navigation Coordination Unit

The Regional Navigation Coordination Unit (RNCU) is proposed to be established under the MRC with active participation from all Member Countries. The RNCU shall be initially hosted, financed and managed by the MRC in the six-year implementation period.

The main objective of the RNCU shall be to coordinate cross-border activities and national activities with cross-border impact during the implementation of the RAP and at the same time exchange knowledge and practices between the Member Countries.

In relation to the Regional Action Plan, the RNCU shall initially be responsible for:

- overall implementation, monitoring and coordination of the RAP;
- monitoring the implementation and progress of National Projects;
- assisting countries to implement National Projects with Cross-Border Impact;
- implementing Cross-Border Projects;
- arranging and holding quarterly RNCU meetings;
- exchanging ideas on relevant regional issues (such as how to address certain issues at a national level, exchange of expertise, provision of specific support, discussion of possible solutions and options to pertinent national problems with regional or cross-border impact);
- developing terms of reference for any technical assistance support needed for navigation safety and environmental protection in close collaboration with the NAP;
- investigating and coordinating potential funding for the RAP;
- joining forces on forthcoming events (such as participating in conferences, pooling resources, aligning relevant strategies and pre-discussion of desired outcomes of conferences, and providing specific support to each other); and
- providing overviews of RAP implementation and updating the RAP Implementation Plan every second year starting in 2017.

The Regional Navigation Coordination Unit shall be managed by MRC and is proposed to comprise:

- a Regional Action Plan Project Manager;
- high-level officials from each Member Country;
- experts representing maritime administrations or similar from each Member Country;
- representatives from NAP; and
- ad hoc participation from other relevant organisations as deemed necessary and desirable.

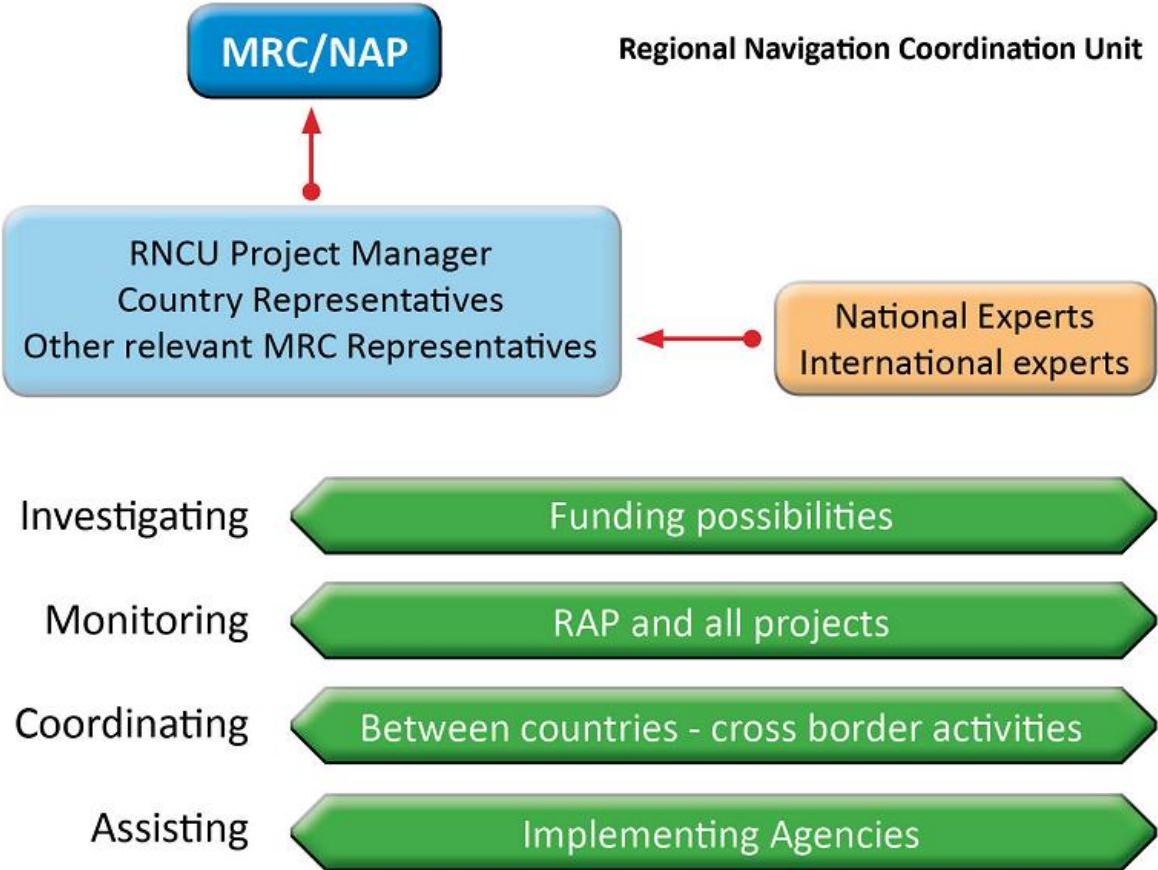
Coordination through the National Mekong Committees:

The assigned coordinating and working links between the RNCU and the Line Agencies/Private Sector in the Countries will go through the Secretariats of each National Mekong Committee.

The importance of public participation, coordination and the formation of partnerships is an essential working principle for the MRC and the National Mekong Committees (NMC's) will have an active role in this. Through the NMCs, strong involvement and commitment from government line agencies, by the public and by national and regional initiatives is fundamentally required for an effective MRC Navigation Programme. Strong involvement by the private sector and local/national ownership of activities must be ensured throughout every aspect of MRC Navigation Programme implementation. The NMCs are the national focal points for the implementation. They provide the link between the MRC Secretariat with the national Ministries, line agencies, and local authorities.

The NMCs assist their Government in managing all cooperative activities with the MRC and submit to the Government for consideration all policies on the RAP cooperation with the aim to achieve the development objective. Through the MRCS each NMC is required to cooperate with other member countries in elaborating and implementing the Agreement on the Cooperation for Sustainable Development of the Mekong River Basin.

Diagram 3: Regional Navigation Coordination Unit



Terms of Reference for the Regional Navigation Coordination Unit are provided in Annex 2.

The RNCU shall be established as soon as the RAP has been endorsed by the countries and the MRC according to the tentative schedule below:

Table 1 Tentative Schedule

ACTIVITY	TIME	RESPONSIBILITY
Agreement on RNCU terms of reference	March 2015	NAP
Establishment of RNCU	May 2015	NAP and Member Countries
Appointment of RNCU members	June 2015	NAP and Member Countries
First RNCU meeting	August 2015	NAP and Member Countries
Preparation of 6-month work plan for RNCU	September 2015	NAP

5.3 BUDGET AND FUNDING OF THE REGIONAL ACTION PLAN

The budgeting of individual project activities is difficult to estimate. However, a budget estimate is provided in each project document based on the project being financed by external donors. If solely national funding is provided for a project, it is most likely that budgets can be reduced due to different requirements for implementation and the use of national and international consultants.

Funding of RAP implementation activities has not yet been secured. NAP will continue to approach potential relevant donors, explain about the RAP, the Implementation Strategy and the projects, and will also prepare national reviews regarding funding of activities related to RAP implementation.

5.3.1 Overall Budget

Below is the total budget for RAP implementation. The budget figures assume that external donors will finance each project. If national funding is available, the budgets will most likely be lower.

Table 2 Overall Budget

Project Document No.	Title	Project Type	BUDGET USD				
			Cambodia	Lao PDR	Viet Nam	Thailand	All countries
1	Mekong Tanker Safety Management (Vessels)	National with Cross-Border Impact	525,000	585,000	450,000	440,000	2,000,000
2	Minimum Standards for Vessel Design, Construction and Equipment (Vessels)	National with Cross-Border Impacts	411,000	459,000	336,000	385,000	1,591,000
3	Safe Manning on Inland Waterway Vessels (Vessels)	National with Cross-Border impacts	566,000	586,000	559,500	540,500	2,252,000
4	Implementation of the IMDG Code and provision of the MSDS for inland waterway vessels. (Vessels)	National	346,500	326,500	354,500	322,500	1,350,000
5	Emergency Response Onboard Vessels (Vessels)	National	279,500	271,500	294,500	279,500	1,125,000
6	Standards for the planning, design and construction of ports and Terminals	National	404,000	400,000	399,000	411,000	1,614,000
7	Maintenance, Inspection and Testing of Critical Equipment (Ports and Terminals)	National	255,000	245,000	275,000	245,000	1,020,000
8	Port Safety Health and Environmental Management System (PSHEMS) (Ports and Terminals)	National	300,000	235,000	335,000	295,000	1,165,000
9	Emergency and Oil Spill Response in Ports and Terminals	National with Cross-Border Impact	340,000	330,000	385,000	335,000	1,390,000
10	National Vessel and Port Waste Management (Environment)	National	357,000	387,000	596,000	454,000	1,794,000
11	Cross Border Vessel and Port Waste Management (Environment)	Cross-Border (MRC)	0	0	0	0	155,000
12	Introducing Geographical Zones in the Mekong River , and related Technical and Operational Requirements for Tankers (Waterways)	National with Cross-Border Impact	385,000	420,000	470,000	370,000	1,645,000
TOTAL USD - All projects			4,169,000	4,245,000	4,454,500	4,077,500	17,101,000

The table above shows only the budgets for implementing the 12 projects in each country. On top of this comes the funding of the Regional Navigation Coordination Unit (RNCU), which at this point is expected to be secured by contributions from the Belgian Government. The estimated yearly budget for operating the RNCU is **380,000 USD**.

5.3.2 Funding of RAP through national budgets

National Projects and National Projects with Cross-Border Impact can be financed through national budget allocations. However, not all countries have this opportunity and need to seek external funding through donors, for example.

In August 2014, an analysis showed that only a few agencies were financially supported regarding the transport of dangerous goods on the Mekong River.

5.3.3 Funding of RAP through external donors

Some countries will be able to secure funding through external donors – and others will not, for various reasons. There is ongoing donor funding to the maritime transport sector in some countries, although not specifically for RAP implementation.

5.3.4 Funding of RAP with assistance from the private sector

Another source of funding is the private sector. Although it is not expected that it will participate in “basket funding”, some specific activities can to some extent be funded by the private sector. Such co-financing shall be seen partly as compliance to new regulations and standards being implemented. Any funding from the private sector shall be carefully coordinated by the RNCU in order not to disturb fragile competition or indirectly promote road transport before inland water transport. Examples of co-funding are implementation of pilot projects and procurement of equipment.

5.3.5 Funding of RNCU activities

The Belgian Government has financed the formulation of Phase 1 (Risk Analysis and Recommendations) and Phase 2 (Regional Action Plan for the Sustainable Transport of Dangerous Goods along the Mekong River). An important pledge has also been discussed to finance activities of the Regional Navigation Coordination Unit with 380.000 USD per year.

5.3.6 Six-month funding activity plan

As soon as the RNCU has been established, it is proposed that the coordination unit continue the work of securing funding for the RAP. This work shall concentrate on:

- securing the financing of MRC activities (RNCU and cross-border activities);
- exploring further the possibilities of funding for all projects identified in the RAP;
- preparing a plan for how to approach and follow up with international donors and promote the RAP;
- coordinating RNCU with national authorities regarding funding; and
- discussing new requirements for the private sector to invest in relevant improvements

A six-month outline funding activity plan is proposed below.

Table 3 Six-month outline funding activity plan

ACTIVITY/TIME	MONTH					
	1	2	3	4	5	6
Secure financing of MRC activities (RNCU and cross-border activities)	Expected					
Explore further funding possibilities for all projects identified in RAP						
Prepare plan for how to approach and follow up with international donors and promote RAP						
Coordinate RNCU with national authorities regarding funding						
Discuss new requirements for private sector to invest in relevant improvements						
Prepare and present a status report regarding the financing of RAP to MRC and Member Countries for further action						

5.4 IMPLEMENTATION SCHEDULE

Implementation of the various projects by each country is proposed in the implementation schedules below. It would be beneficial if countries can arrange and implement projects at the same time or at least in a way that coordination and optimising the use of resources are possible, and that lessons learned and other experience can be used in the best possible way.

It will be a major challenge for the Regional Navigation Coordination Unit (RNCU) to coordinate the implementation of the projects between the four countries. Changes to the proposed implementation schedules for each country are likely to be adjusted, when implementation starts. The schedules below are an initial proposal.

Table 4 Implementation Schedule

Project No.	Project Document Title	Category	National or Cross Border	Year															
				2015	2016	2017	2018	2019	2020										
1	Mekong Tanker Safety Management	Vessel	National and Cross	Blue	Green	Yellow	Red												
2	Minimum Standards for Vessel Design, Construction and Equipment	Vessel	National and Cross					Blue	Green	Yellow	Red								
3	Safe Manning on Inland Waterway Vessels	Vessel	National and Cross					Blue	Green	Yellow	Red								
4	Implementation of the IMDG Code and provision of the MSDS for inland waterway	Vessel	National									Blue	Green	Yellow	Red				
5	Emergency Response onboard Vessels	Vessel	National					Blue	Green	Yellow	Red								
6	Standards for the planning, design and construction of ports and terminals	Port	National					Blue	Green	Yellow	Red								
7	Maintenance, Testing and Inspection of Critical Equipment	Port	National									Blue	Green	Yellow	Red				
8	Port Safety Health and Environmental Management System (PSHEMS)	Port	National									Blue	Green	Yellow	Red				
9	Emergency and Oil Spill Response in Ports and Terminals	Port	National and Cross	Blue	Green	Yellow	Red												
10	National Vessel and Port Waste Management	Environment	National	Blue	Green	Yellow	Red												
11	Cross Border Vessel and Port Waste Management	Environment	Cross Border		Blue	Green	Yellow	Red											
12	Introducing Geographical Zones in the Mekong River , and related Technical and Operational Requirements for Tankers	Waterways	National and Cross Border					Blue	Green	Yellow	Red								

Blue	Viet Nam	Yellow	Lao PDR
Green	Cambodia	Red	Thailand

6 AGREEMENT

6.1 PRINCIPLES

By adopting the RAP, Member Countries agree to apply the following Principles:

- **Responsibility:** In order to improve navigation safety and to protect the ecosystems of the Mekong River and thus preserve the ecological balances, the Member Countries shall individually or jointly take all appropriate legislative, administrative or other measures to prevent and eliminate accidents, illicit acts and pollution following on from inland water transport on the Mekong River.
- **Provisions from International Conventions and Best Environmental Practices** will be promoted by the Member Countries and their inland water transport industries to prevent pollution of the Mekong River. Additional measures shall be taken if the consequent reductions of inputs do not lead to acceptable results.
- The "**Polluter Pays**" principle should serve as the economic basis for the control of environmentally harmful activities, emphasising the importance of responsibility by forcing polluters to pay for the true costs of their activities.
- **Avoiding risks:** Implementing the RAP should result neither in transboundary pollution or negative actions affecting regions outside the Member Countries, nor involve increases or changes in ship-generated waste disposal or other activities that could increase health risks. Any measures taken must not lead to unacceptable environmental strains on the atmosphere, soils, water bodies or groundwater.

6.2 AGREEMENT

By adopting the Regional Action Plan (RAP), Member Countries agree to:

- promote the implementation of the RAP;
- share information and experiences on the implementation of relevant Conventions on maritime safety of the International Maritime Organization (IMO) and the International Labour Organization (ILO);
- share information and experiences on the formulation and adoption of national and regional standards, rules and regulations on navigation safety, and harmonise as much as possible;
- strengthen regional and cross-border cooperation to ensure integration of the RAP Objectives; and
- develop or incorporate into relevant existing National Action Plans activities in accordance with the National and Cross-Border Projects agreed in the RAP.

ANNEX 1: SUMMARY OF PROJECTS

The projects are divided into national projects, national projects with cross-border impact and cross-border projects:

1. NATIONAL PROJECTS	
Project Document 4	Implementation of the IMDG Code and Provision of MSDS for Inland Waterway Vessels
Project Document 5	Emergency Response On Board Vessels
Project Document 6	Standards for the Planning, Design and Construction of Ports and Terminals
Project Document 7	Maintenance, Inspection and Testing of Critical Equipment
Project Document 8	Port Safety Health and Environmental Management System (PSHEMS)
Project Document 10	National Vessel and Port Waste Management
2. NATIONAL PROJECTS WITH CROSS-BORDER IMPACT	
Project Document 1	Mekong Tanker Safety Management
Project Document 2	Minimum Standards for Vessel Design, Construction and Equipment
Project Document 3	Safe Manning on Inland Waterway Vessels
Project Document 9	Emergency and Oil Spill Response in Ports and Terminals
Project Document 12	Introducing Geographical Zones in the Mekong River , and Related Technical and Operational Requirements for Tankers
3. CROSS-BORDER PROJECTS	
Project Document 11	Cross-Border Vessel and Port Waste Management

1.1 NATIONAL PROJECTS

PROJECT DOCUMENT 4: IMPLEMENTATION OF THE IMDG CODE AND PROVISIONS OF MSDS FOR INLAND WATERWAY VESSELS																
CATEGORY	National															
OBJECTIVE	<i>To implement provisions of 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>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. The IMDG Code with regard to inland navigation and the MSDS implemented. 2. An Operational Manual for Material Safety Data Sheets (MSDS) and the International Maritime Dangerous Goods (IMDG) Code on board inland waterway vessels prepared. 3. Standard transport documents and administrative procedures for practical use on board prepared. 4. Training for vessel crew in job-specific knowledge of the IMDG Code and the use of documents for carriage of dangerous goods including the Material Safety Data Sheets 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. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	346,500 USD				326,500 USD				322,500 USD				354,500 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Inland Waterway Transport Department (IWTD) under the Ministry of Public Works and Transport (MPWT)														
	Lao PDR	Waterways Department under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport														

PROJECT DOCUMENT 5: EMERGENCY RESPONSE ON BOARD VESSELS

CATEGORY	National															
OBJECTIVE	<i>To ensure that the shipmaster and the crew can manage and respond successfully to any emergency on board a vessel</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. Regulations for Emergency Response Management on board inland waterway vessels prepared or updated 2. Emergency Response Management on board inland waterway vessels implemented 3. Operational training on handling emergencies conducted 4. List of all necessary emergency equipment needed on board vessels prepared 5. Two pilot projects involving a shipping company/vessel operator and inspection authorities on the minimum equipment and training requirements for emergency preparedness. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	279,500 USD				271,500 USD				279,500 USD				294,500 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Inland Waterway Transport Department (IWTD) under the Ministry of Public Works and Transport (MPWT)														
	Lao PDR	Waterways Department under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport														

PROJECT DOCUMENT 6: STANDARDS FOR THE PLANNING, DESIGN AND CONSTRUCTION OF PORTS AND TERMINALS

CATEGORY	National															
OBJECTIVE	<i>To ensure that ports and terminals are planned, designed and constructed in a safe and sustainable manner so that this will provide the best achievable protection of public health, safety and the environment.</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. Responsible Agency(ies) identified for the development of ports and terminals handling dangerous goods along the Mekong River. 2. Necessary rules, regulations and other legal instruments to support the Agency(ies) responsible for the development of ports and terminals handling dangerous goods prepared, reviewed or updated. 3. Application and approval process for port and terminal planning and development including Environmental Impact Assessment of dangerous risks reviewed and updated if needed. 4. Minimum technical standards for the design and construction of ports and terminals including standards for fire prevention, detection, and suppression developed, reviewed and updated. 5. A database of existing ports, terminals and landing stages that handle dangerous goods prepared (this database shall support the capacity needs assessment for the authorities in charge of auditing, inspections and evaluations). 6. Training for relevant authorities regarding monitoring audits, inspections and evaluations (to verify compliance to technical standards) prepared and carried out. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	404,000 USD				400,000 USD				411,000 USD				399,000 USD			
TIME SCHEDULE	3 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Private Port Management Committee of Ministry of Public Works and Transport in close cooperation with Ministry of Environment.														
	Lao PDR	Waterways Department under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport														

PROJECT DOCUMENT 7: MAINTENANCE, INSPECTION AND TESTING OF CRITICAL EQUIPMENT

CATEGORY	National															
OBJECTIVE	<i>To develop and implement a Maintenance, Inspection and Testing Program (MITP) for critical equipment in ports and terminals to secure functioning in a safe and efficient manner and reduce the downtime required for repairs or replacements.</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. Critical equipment for handling dangerous goods for ports/terminals identified (register of critical equipment prepared). These shall include characteristic descriptions and explanations on the functions. 2. Maintenance, inspection and testing requirements and procedures for dangerous goods critical equipment revised and/or developed based on manufacturer recommendations, recognized international standards and generally accepted engineering best practices. 3. Training programme for relevant authorities and port/terminal operators and personnel involved in the Maintenance, Inspection and Testing Programme. 4. Two ports/terminals selected for pilot projects testing of the Maintenance, Inspection and Testing Programme (MITP). 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	255,000 USD				245,000 USD				245,000 USD				275,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia		Private Port Management Committee of Ministry of Public Works and Transport.													
	Lao PDR		Waterways Department under the Ministry of Public Works and Transport.													
	Thailand		Marine Department under the Ministry of Transport.													
	Viet Nam		Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.													

PROJECT DOCUMENT 8: PORT SAFETY HEALTH AND ENVIRONMENTAL MANAGEMENT SYSTEM (PSHEMS)

CATEGORY	National															
OBJECTIVE	<i>To develop and implement a Port Safety, Health and Environmental Management System (PSHEMS) for ports and terminals on the Mekong River.</i>															
EXPECTED OUTPUT	<p>1. PEMSEA's Port, Safety, Health and Environmental Management System Development and Implementation Guidelines reviewed and adapted where necessary to a common system for Mekong inland waterway ports and terminals.</p> <p>2. Mekong PSHEMS development and implementation guidelines explained and distributed to other ports and terminals.</p> <p>3. Technical support and provisions for training to port personnel on the development of a PSHEMS prepared and carried out.</p> <p>4. Two ports/terminals selected for pilot projects for Mekong PSHEMS implementation.</p>															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	300,000 USD				235,000 USD				295,000 USD				335,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia		Private Port Management Committee of Ministry of Public Works and Transport in cooperation with with the Department of Occupational Safety and Health (DOSHS) under the Ministry of Labour.													
	Lao PDR		Waterways Department under the Ministry of Public Works and Transport.													
	Thailand		Marine Department under the Ministry of Transport in close cooperation with the Port Authority of Thailand (PAT).													
	Viet Nam		Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.													

PROJECT DOCUMENT 10: NATIONAL VESSEL AND PORT WASTE MANAGEMENT

CATEGORY	National															
OBJECTIVE	<i>To establish efficient vessel and port waste handling in ports and terminals on the Mekong River</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. Relevant national legislation reviewed, updated and developed regarding waste management in ports and from vessels in order to comply with national as well as international requirements 2. Country Waste Management Guidelines for most country ports, terminals and vessels reviewed and applied (contractual framework for private waste operators will be also included) 3. Technical study tour and training of relevant staff from inland waterway ports and authorities arranged and carried out and best practice and international experience on vessel and port waste management compiled and disseminated 4. Individual Port Waste Management Manuals developed for all inland waterway ports and terminals and three pilot projects carried out in identified inland waterway ports and/or terminals regarding full implementation 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	357,000 USD				387,000 USD				454,000 USD				596,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Ministry of Public Works and Transport in cooperation/coordination with Ministry of Environment														
	Lao PDR	Waterways Department under the Ministry of Public Works and Transport.														
	Thailand	Marine Department under the Ministry of Transport														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.														

1.2 NATIONAL PROJECTS WITH CROSS-BORDER IMPACT

PROJECT DOCUMENT 1: MEKONG TANKER SAFETY MANAGEMENT																
CATEGORY	National with cross-border impact															
OBJECTIVE	<i>To improve safety on board inland waterway tankers through the preparation and implementation of a Vessel Safety Management System, thereby reducing the risks for accidents.</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> Mekong Tanker Safety Management (MTSM) Code/ Sub Decree for inland waterway tankers drafted approved and legalised. Mekong Tanker Safety Management Code between the countries harmonised, at least on a bilateral basis between Cambodia and Viet Nam or between Thailand and Lao PDR. Vessel Inspection System (VIS) procedures prepared for relevant inspection. Training conducted for ship operators, ship owners, crewmembers and authorities in the practical use of the Mekong Tanker Safety Management Code, the Vessel Safety Management System and the Vessel Inspection System. Two pilot projects implemented with a shipping company/vessel operator and inspection authorities on the practical implementation of Mekong Tanker Safety Management Code/ Sub Decree. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	525,000 USD				585,000 USD				440,000 USD				450,000 USD			
TIME SCHEDULE	2 - 2,5 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Inland Waterway Transport Department (IWTD) under the Ministry of Public Works and Transport														
	Lao PDR	The Department of Waterways under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport.														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.														

PROJECT DOCUMENT 2: MINIMUM STANDARDS FOR VESSEL DESIGN, CONSTRUCTION AND EQUIPMENT

CATEGORY	National with cross-border impact															
OBJECTIVE	To reduce shipping accidents from structural and technical shortcomings and improve the safety on board inland waterway vessels by establishing minimum standards for vessel design, ship construction and equipment, and by developing a regularly controlled mechanism to certify and control that these standards are complied with.															
EXPECTED OUTPUT	<ol style="list-style-type: none"> Existing regulations on vessel design, construction and equipment reviewed and recommendations made. Harmonisation process between Cambodia and Viet Nam or between Thailand and Lao PDR started. Regulations amended and additional regulations prepared where needed, standards approved and legalised. Advanced training on the regulations, standards and guidelines prepared and carried out and eventually incorporated into the existing navigation training programme. Detailed institutional strengthening scheme for inspection and control for identified relevant agencies and operators proposed. Capacity building carried out. A pilot project with a shipping company/vessel operator on the practical implementation of minimum equipment requirements for existing vessels implemented. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	411,000 USD				459,000 USD				385,000 USD				336,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Inland Waterway Transport Department (IWTD) under the Ministry of Public Works and Transport														
	Lao PDR	The Department of Waterways under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport.														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.														

PROJECT DOCUMENT 3: SAFE MANNING ON INLAND WATERWAY VESSELS

CATEGORY	National with cross-border impact															
OBJECTIVE	<i>To ensure that vessels are operated safely and manned with sufficient and qualified crew to prevent accidents or pollution from the handling and transport of dangerous goods and cargo</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> Safe Manning Standards and Certification Requirements for all types of inland waterway vessels (tanker vessels, cargo vessels, passenger vessels and ferries) prepared on national basis and regional harmonisation initiated. Training Needs Assessment for all specific subjects regarding safe manning on board vessels conducted. Curricula, syllabi and training course material regarding safe manning on board vessels reviewed and updated with training carried out. Training programme on Safe Manning Standards and the training certification process incorporated into the existing national maritime training portfolio. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	566,000 USD				586,000 USD				540,500 USD				559,500 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Phnom Penh Autonomous Port and Sihanoukville Autonomous Port under the Ministry of Public Works and Transport in close cooperation with Inland Waterway Transport Department.														
	Lao PDR	The Department of Waterways under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport.														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.														

PROJECT DOCUMENT 9: EMERGENCY AND OIL SPILL RESPONSE IN PORTS AND TERMINALS

CATEGORY	National with cross-border impact															
OBJECTIVE	<i>To reduce the impact on the water environment of the Mekong River System, its tributaries and lakes, 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.</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 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 national level for emergency and oil spill response management analysed 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. 															
INPUT	Approximate budget for each country (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	340,000 USD				330,000 USD				335,000 USD				385,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia	Private Port Management Committee of Ministry of Public Works and Transport in close cooperation with the Ministry of Environment (MoE), Ministry of Industry, Mines and Energy.														
	Lao PDR	The Department of Waterways under the Ministry of Public Works and Transport														
	Thailand	Marine Department under the Ministry of Transport.														
	Viet Nam	Viet Nam Inland Waterway Administration (VIWA) under the Ministry of Transport.														

PROJECT DOCUMENT 12: INTRODUCING GEOGRAPHICAL ZONES IN THE MEKONG RIVER AND RELATED TECHNICAL AND OPERATIONAL REQUIREMENTS FOR TANKERS

CATEGORY	National Project with cross-border impact															
OBJECTIVE	To assess, identify, define and approve different zones in the Mekong River and ensure that the technical and operational requirements for tankers using these zones are met															
EXPECTED OUTPUT	<ol style="list-style-type: none"> 1. Desk study and in-depth analysis 2. Different zones in the Mekong River in Cambodia, Lao PDR, Thailand and Viet Nam are assessed, identified and defined 3. Risk mitigation measures for operational use by tankers on the Mekong River are identified 4. Draft National Regulations for temporally and/or permanently restricted used of tankers along the Mekong River in Cambodia, Lao PDR, Thailand and Viet Nam prepared. 5. National Technical and Operational Standards and Regulations prepared under Project Document 1 (Mekong Tanker Safety Management) and Project Document 2 (Minimum Standards for Vessel Design, Construction and Equipment) are adjusted to incorporate the zone requirements 6. Draft National Regulations are harmonized with draft National Regulations between Cambodia and Viet Nam or between Thailand and Lao PDR through bilateral discussions with MRC assistance 7. National Regulations and Geographical Zones in the Mekong River in Cambodia, Lao PDR, Thailand, Viet Nam and Related Technical and Operational Requirements for Tankers are approved by each country. 8. National Regulations and Guidelines are incorporated in training curricular and training carried out. 9. Awareness campaigns for vessel/tanker operators and shipping lines prepared and carried out 															
INPUT	Approximate budget for all 4 countries (technical assistance, training and capacity building, and equipment).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	385,000 USD				420,000 USD				370,000 USD				470,000 USD			
TIME SCHEDULE	2 Years															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia		Waterways Department under the Ministry of Public Works and Transport is recommended as Implementing Agency													
	Lao PDR		Department of Waterways is recommended as Implementing Agency													
	Thailand		Marine Department under the Ministry of transport in cooperation/coordination with Lao transport authorities													

	Viet Nam	Vietnam Inland Waterways Administration (VIWA) is recommended as Implementing Agency
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1.3 CROSS-BORDER PROJECTS

PROJECT DOCUMENT 11: CROSS- BORDER VESSEL AND PORT WASTE MANAGEMENT																
CATEGORY	Cross-Border impact															
OBJECTIVE	<i>To introduce cross-border measures to incentivise vessel waste delivery through implementation of economic incentives, harmonised uniform measures and a strengthening of cross-border inspection and communication.</i>															
EXPECTED OUTPUT	<ol style="list-style-type: none"> Existing mechanisms for cross-border cooperation reviewed, taking into account MRC Core Functions, decentralisation and implementation. Recommendations on regional cooperation provided. Issues of regional interest and concern identified for discussion and recommendations made (e.g. cost recovery principle, waste registration procedures and forms, port waste management plans and requirements, inspection procedures, roles and responsibilities and waste characterisation). Cross-border cooperation on vessel waste management in Europe and beyond reviewed and adapted to the Mekong context 															
INPUT	Approximate budget for MRC (technical assistance, training and capacity building).															
	Cambodia				Lao PDR				Thailand				Viet Nam			
	MRC (for all 4 countries): 155,000 USD (2-year period)															
TIME SCHEDULE	2 Years, to be continued as long as necessary															
PRIORITY	Cambodia				Lao PDR				Thailand				Viet Nam			
	L	M	H	VH	L	M	H	VH	L	M	H	VH	L	M	H	VH
IMPLEMENTING AGENCY	Cambodia		Mekong River Commission: Navigation Programme will host and manage a Regional Navigation Coordination Unit (RNCU).													
	Lao PDR															
	Thailand															
	Viet Nam															

ANNEX 2: TERMS OF REFERENCE FOR THE REGIONAL NAVIGATION COORDINATION UNIT (RNCU)



Establishment of a Regional Navigation Coordination Unit at MRC to Implement the Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River

Terms of Reference

October 2014

1. BACKGROUND

Under the traffic safety and environment outcome of the MRC Navigation Programme, a Risk Analysis of the Carriage, Handling and Storage of Dangerous Goods began in 2010 (Phase 1). The objective was to identify and determine the magnitude of risks associated with the storage, carriage and handling of dangerous goods along the Mekong River and determine the prevention and mitigation measures required to manage the risks. Phase 1 detailed the baseline conditions and determined the priority areas for improving the transport of dangerous goods in each of the MRC Member Countries: Cambodia, Lao PDR, Thailand and Viet Nam. The risk analysis project was a significant body of work involving local and international experts encompassing the establishment of National Working Groups for data collection, and capacity building through training in risk management and the risks associated with the transport of dangerous goods. The result of this work was a two-volume publication Carriage, Handling and Storage of Dangerous Goods along the Mekong River comprising the Risk Analysis (Volume I) and Recommendations (Volume II). The outcomes provide a useful framework to ensure a balance between inland water transport and environmental protection.

Phase 2 began in June 2013 to prepare a Regional Action Plan (RAP) for Sustainable Transport of Dangerous Goods along the Mekong River consisting of national and cross-border project documents as a basis to reduce the risks of accidents, spillages and pollution and enhance emergency response and regional coordination. The RAP includes an Implementation Strategy for the national and cross-border projects.

Project documents are based on consolidated recommendations approved and presented in Phase 1. The consolidation of these recommendations into project documents has been discussed and reviewed by each MRC Member Country through national consultations with National Working Groups and Line Agencies.

The Implementation Strategy has been prepared taking into account the institutional capacity of the MRC and proposed Implementing Agencies after national consultations with Member Countries.

The RAP identifies three types of projects that require different implementation approaches:

National Projects which require national implementation;

National Projects with Cross-Border Impact which require national implementation but also regional coordination; and

Cross-Border Projects which require regional implementation and coordination.

Lack of regional coordination can easily lead to insufficient and ineffective implementation. With Cross-Border Projects and National Projects with Cross-Border Impact, the MRC seems to be the most relevant regional institution to coordinate and, with the right momentum, ensure harmonisation between countries to the extent possible in areas such as regulations and standards.

It is therefore proposed to establish a Regional Navigation Coordination Unit under the MRC to undertake the huge challenge of coordinating RAP implementation.

2. OBJECTIVE

To establish and operate a Regional Navigation Coordination Unit (RNCU) at the MRC Secretariat which can undertake coordination between Member Countries and ensure coordination and implementation of the Regional Action Plan (RAP) for Sustainable Transport of Dangerous Goods along the Mekong River.

3. PROJECT DESCRIPTION – SCOPE of WORK

Detailed coordination is required to implement the Regional Action Plan to ensure that it is being implemented, to monitor activities and progress and finally to assist with issues of cross-border interest. This is anticipated to be a very complex process involving close liaison with the four countries and the Implementing Agencies. To secure smooth implementation, the establishment of a Regional Navigation Coordination Unit at MRC is proposed.

One of the key tasks of the RNCU shall be to coordinate cross-border and national activities with cross-border impact during the implementation of the Regional Action Plan and at the same time exchange knowledge and practices between the Member Countries.

RNCU responsibilities shall include:

- overall implementation, monitoring and coordination of the RAP;
- monitoring the implementation and progress of National Projects;
- assisting countries to implement National Projects with Cross- Border Impact;
- implementing Cross-Border Projects;
- arranging and holding quarterly RNCU meetings;
- exchanging ideas on relevant regional issues (such as how to address certain issues at a national level, exchange of expertise, provision of specific support, discussion of possible solutions of and options to pertinent national problems with regional or cross-border impact);
- developing terms of reference for any technical assistance support needed for navigation safety and environmental protection in close collaboration with the MRC Navigation Programme;
- investigating and coordinating potential funding for the RAP;
- joining forces on forthcoming events (such as participating in conferences, pooling resources, aligning relevant strategies and pre-discussion of desired outcomes of conferences, and providing specific support to each other); and
- providing overviews implementation of the RAP and updating the RAP Implementation Plan every second year starting in 2017.

Management of the RNCU:

The RNCU shall be managed by MRC/NAP and is proposed to comprise:

- a RAP Project Manager;
- high-level officials from each Member Country;
- experts from “maritime administrations” or similar from each Member Country;
- representatives from the Navigation Programme; and
- ad hoc participation from other relevant organisations as deemed necessary and desirable.

4. OUTPUTS

- Output 1:** Regional Navigation Coordination Unit established
- Output 2:** Regional Navigation Coordination Unit staffed and operational
- Output 3:** Financing commitment in place
- Output 4:** One-year work plan including a six-month funding activity plan

5. IMPLEMENTATION ARRANGEMENTS

The establishment of the RNCU requires full commitment and support from Member Countries as well as the MRC. The following steps are foreseen:

- Endorsement of the RAP by the MRC and Member Countries;
- Final agreement regarding establishment of the RNCU;
- Securing funding for the RNCU;
- Appointment of country members of the RNCU;
- Appointment of internal MRC staff; and
- Finalising the organisational structure of RNCU.

The time schedule for the establishment of the RNCU depends on the commitment and approval process within MRC and by Member Countries but could follow the time schedule below (only the first 8 months are shown):

Table 1 Schedule for the establishment of the RNCU

OUTPUT	ACTIVITIES	MONTH							
		1	2	3	4	5	6	7	8
1. Regional Navigation Coordination Unit established.									
	1. Have the RAP endorsed by MRC and Member Countries.								
	2. Final agreement regarding establishment of RNCU								
	3. Prepare profiles for MRC staff and country members for the RNCU								
	4. Identify internal MRC staff								
	5. Liaise with the countries regarding their appointment of members for the RNCU								
2. Regional Navigation Coordination Unit staffed and operational.									
	7. Appoint MRC staff								
	8. Appoint country members								

	9. Establish the management of the RCNU																		
	10. Finalising the organisational structure of RNCU																		
3. Financing commitment in place.																			
	11. Secure the funding of RNCU																		
	12. Prepare an outline six year budget and a detailed one year budget for MRC/Donor approval																		
4. One year workplan including a six month funding activity plan.																			
	13. Prepare a one year workplan																		
	14. Prepare a six month "funding activity plan"																		

6. ESTABLISHMENT OF THE RNCU

The process of establishing the RNCU shall be managed by the Navigation Programme and facilitated by the MRC, the four Member Countries and their National Mekong Committees.

The process will follow an agreed time schedule and activity flow.

The existing NAP staff will carry out this task.

7. FINANCIAL ARRANGEMENTS

The financing of the RNCU during the six-year period from 2015 to 2020 is expected to be provided by the Belgian Government. The final commitment and budget is still to be negotiated.

At this very early stage, the annual budget is estimated at 380,000 USD per year. This budget can vary from year to year and shall therefore be seen as an average budget per year.

The budget shall cover:

- Administration costs at the RNCU;
- Internal staff;
- External consultants;
- Assistance to cross-border activities; and
- Implementation of cross-border projects.

Table 2 Indicative yearly budget for RNCU

	BUDGET (USD)
RAP Coordinator (part-time of NAP Coordinator)	30,000
Navigation Programme Officer (PO) (full time PO for NAP)	30,000
Regional consultancies	64,000
International consultancies	64,000
Regional travel, DSA	30,000
Budget for regional workshops	80,000
Miscellaneous and contingency	44,342
Subtotal	342,342
11% MRCS Support Costs	37,658
Total	380,000

PART II

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For more information on the **Navigation Programme**, visit
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