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| **Asian Development Bank** | **Government of Vietnam**  **Ministry of Natural Resources**  **and Environment** |

**TA7629-VIE: Capacity Building for River Basin Water Resources Planning**

**Component 2: Planning Tasks for the Red-Thai Binh River Basin**

**Guidelines for the preparation of Planning Tasks**

Prepared for**:**

**The Department of Water Resources Management on behalf of the Government of Viet Nam and the Asian Development Bank**

Prepared by

**AECOM Asia Co. Ltd.**

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Acknowledgments

This component of *CDTA 7629-VIE: Capacity Building for River Basin Water Resources Planning* supports the Ministry of Natural Resources and Environment in undertaking activities related to the preparation of planning tasks for the management of water resources of the Red-Thai Binh river basin. Planning tasks are prescribed in the 2012 Law on Water Resources and precede the formulation of a Water Resources Plan. Planning tasks make provide a framework and recommendations for the preparation of river basin water resources planning. The CDTA also aimed to develop and pilot a cost-effective framework for formulating planning tasks that could be replicated in other basins of Viet Nam.

The contributions to this report are acknowledged: Des Cleary (Water Basin Planning Expert (International), Mrs. Nguyen Thi Phuong Lam (Deputy Team Leader) and Dr. Eric Biltonen (TA Team Leader).

Limitations Statement

The sole purpose of this report and the associated services is to set out guidelines for the preparation of planning tasks as set out in the Law on Water Resources.

The passage of time may require re-evaluation of the findings, proposals and conclusions expressed in this report.

No warranty or guarantee, whether express or implied, is made with respect to the information reported or to the findings, observations and conclusions expressed in this report. Further, such information, findings, observations and conclusions are based solely upon information in existence at the time of report preparation.

**TA7629-VIE: Capacity Building for River Basin Water Resources Planning**

**Component 2: Planning Tasks for the Red-Thai Binh River Basin**

**GUIDELINES FOR THE PREPARATION OF PLANNING TASKS**

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**ABBREVIATIONS**

|  |  |  |
| --- | --- | --- |
| ADB |  | Asian Development Bank |
| DoNRE |  | Department of Natural Resources and Environment (Provincial) |
| DWRM |  | Department of Water Resources Management (MoNRE) |
| EIA |  | Environmental Impact Assessment |
| EVN |  | Electricity Viet Nam |
| GDP |  | Gross Domestic Product |
| GIS |  | Geographical information system |
| GSO |  | General Statics Office (of Viet Nam) |
| GTF |  | Government Task Force |
| GWh |  | Gigawatt hour |
| HCMC |  | Ho Chi Minh City |
| I&DSS |  | Irrigation and Drainage Sub-Sector |
| IWRM |  | Integrated Water Resources Management |
| MARD |  | Ministry of Agriculture and Rural Development |
| MDG |  | Millennium Development Goals |
| MoC |  | Ministry of Construction |
| MoH |  | Ministry of Health |
| MoLISA |  | Ministry of Labor, Invalids, and Social Affairs |
| MoNRE |  | Ministry of Natural Resources and Environment |
| NGO |  | Non-Government Organization |
| NWRC |  | National Water Resources Council |
| NWRS |  | National Water Resources Strategy |
| ONRC |  | Office of the National Water Resources Council |
| RTBRB |  | Red-Thai Binh River Basin |
| SEDP |  | Socio-Economic Development Plan |
| SERC |  | South East Rivers Cluster |
| SoE |  | State of Environment |
| SPP |  | Stakeholder Participation Plan |
| TA |  | Technical Assistance |
| VEA |  | Viet Nam Environment Administration (MoNRE) |
| VND |  | Vietnamese Dong |
| VWSA |  | Viet Nam Water Supply and Sewerage Association |
| WASECO | | Water Supply and Sewerage Companies |
| WHO |  | World Health Organization |
| WSR |  | Water Sector Review |

**DEFINITIONS**

A **river basin** is an area where surface and ground water sources naturally run into a surface river and flow out at a common point or into the seas.

The river basin includes both the rivers that convey the water as well as the land surfaces from which water drains into those channels, and is separated from adjacent basins by a drainage divide.

A **river sub-basin** is an area of land where surface and ground water sources naturally run into a surface river and flow out at a common point, usually another river or a lake or estuary within the river basin.

The river sub-basins are normally based on the main rivers and tributaries of the river basin, and include both the rivers that convey the water as well as the land surfaces from which water drains into those channels, and is separated from adjacent sub-basins by a drainage divide within the overall river basin.

**TA7629-VIE: Capacity Building for River Basin Water Resources Planning**

**Component 2: Planning Tasks for the Red-Thai Binh River Basin**

# INTRODUCTION

1. These guidelines are aimed at water resources planners who will be responsible for the preparation of Planning Tasks for a river basin.
2. Planning tasks are defined in Article 20 of the 2012 Law on Water Resources (LWR).[[1]](#footnote-1)

**Article 20. Tasks of water resources planning**

1. Contents of the tasks of water resources planning:

a) An overall assessment of the natural, economic and social conditions, the status of water resources, situation of the protection, exploitation, and use of water resources, prevention, combat against and overcoming of the harms caused by water;

b) A preliminary definition of the functions of water sources, the needs for water supply and water drainage, issues to be addressed in the protection, exploitation, and use of water resources, prevention, combat against and overcoming of the harms caused by water;

c) A definition of the subjects, scope and contents of the plans in order to achieve the water resources objectives and solve the issues identified at Item b of this Article;

d) Identification of the measures, funds, plan and schedule of the formulation of planning.

2. The organizations that prepare water resources planning shall take the responsibility to approve the tasks of water resources planning.

1. Planning Tasks focus on high level issues, objectives and management solutions, specifically identifying activities for subsequent river basin water resources planning – in effect, setting ‘terms of reference’ for river basin planning.
2. Planning tasks set both long term outcomes for the river basin (vision, water sources functions, and objectives), and also five-year targets for overall water management. This is based on a principle of continuous improvement in water resources management and on the social and economic benefits the community receives from its water sources and their dependent ecosystems.
3. There are many activities involved in the formulation of the planning tasks. These activities provide the data and information (INPUTS) necessary to develop the Planning Tasks (OUTPUTS) – see Figure 1.

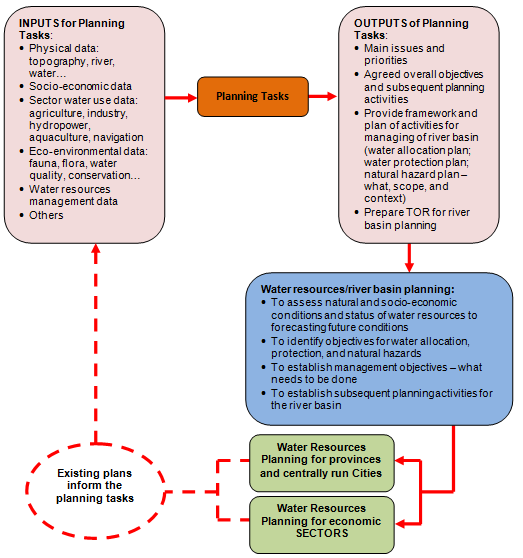


Figure 1: Planning Tasks and how they fit in the river basin planning process

1. Planning Tasks provide a framework for the subsequent water resources planning activities for the river basin. River basin planning is necessary so that water resources are effectively managed for the mutual benefit of all stakeholders. This is especially necessary when water resources are not available in sufficient quantities and quality to meet all demands, and/or where pollution, degradation, and natural hazards pose a threat. Planning allows water resource policy decision makers and managers to make well-informed decisions to meet current and future challenges based on sound information and analysis. Without effective planning, water management will lack purposeful direction and possibly cause harm to those who depend upon the water resources.
2. One aspect of planning tasks identified in the LWR involves an assessment of the current status of water resources including the physical water resource, demand and use, protection of quality and environment, and protection and mitigation against negative impacts caused by water. The assessment also examines the socio-economic features of the basin as related to water management. The analysis and key findings of the assessment are included in a Status Report, the preparation of which is a major activity address in these guidelines.
3. The Status Report should be “comprehensive” in scope, but it does not need to be very “detailed” in scale. The Status Report will present enough information for sound decision-making, without going into excessive detail.
4. The Status Report will identify the major issues facing the Basin which can be formulated as priorities, options, and tasks. The issues will cover water resources management aspects such as water monitoring, water availability, water related disasters, water quality, water related environments, water sources (including reservoirs), sand & gravel extraction, etc., as well as issues involved with the various economic sectors - irrigation, agriculture, urban water and sanitation, rural water and sanitation, industry, hydropower, aquaculture and navigation. The Status Report will also assess the adequacy of the institutional, legal, and capacity situation for effectively managing water resources, especially for MoNRE.
5. The key issues will relate to one or more of the functions of water source, which are the beneficial use purposes for which water is used. During the process, objectives will be identified or formulated. Objectives identify how stakeholders want water to be managed, used, and protected. Sometimes objectives are based on the resolution of an issue. Other times, a set of objectives is the basis for identifying an issue.
6. Planners will identify and prepare a range of subsequent planning activities for addressing the key issues in order to work towards the objectives. These will be presented in a Planning Tasks Report that will bring together the above steps as a basis for formulating the subsequent planning activities in the Planning tasks.
7. The Guidelines for the Preparation of Planning Tasks provide a structured outline of all the steps required for formulating the Planning Tasks. These steps address the following items:

* A description of a number of activities that should be undertaken before you can actually begin the planning process.
* Undertaking the Status Report for the river basin, including identification of all issues.
* Based on the Status Report, determine a list of priority issues that the Planning Tasks will address for the river basin.
* Establish objectives for water resource management (related to preliminary functions of water sources).
* Determining a range of subsequent planning activities for addressing how the river basin water resources planning will be implemented.
* Preparing the Planning Tasks Report.
* Establishing accountabilities, roles and responsibilities of agencies for undertaking subsequent planning activities in the Planning Tasks, and establishing arrangements for monitoring, evaluating and reporting on these planning activities.

Specifically, the structure of the steps and this report are show in Figure 2.

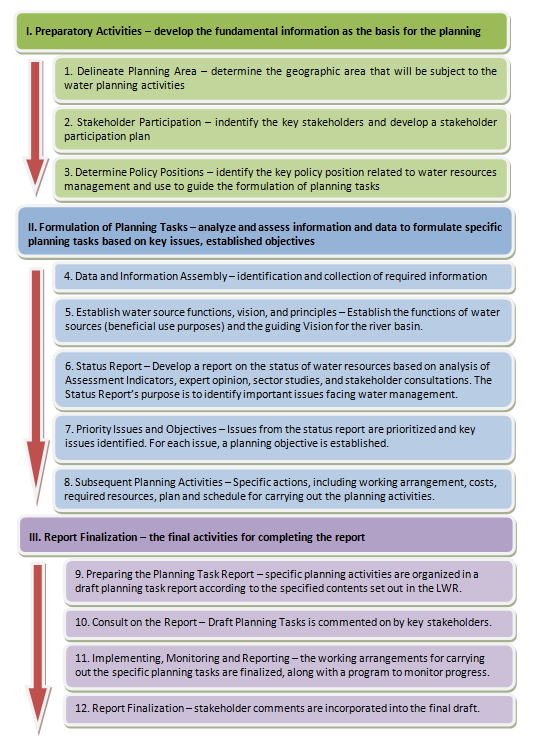


Figure 2: Structure of steps for formulation of Planning Tasks

# THE CONTEXT FOR THESE GUIDELINES

1. Planning tasks are an organized and rational list of subsequent planning activities for water resources planning for a river basin. They are based on a comprehensive rapid assessment of the status of water resources in the basin, including the resources, its use, and its management. They are designed to move away from a Master Planning approach to a more efficient and focused approach to address key issues.
2. Planning Tasks focus on high level issues, objectives and solutions. Planning tasks will:

* Identify the main issues for water resources, their management, and exploitation and use.
* Identify functions of water sources and objectives for what the river basin planning activity should achieve;
* Identify priorities for planning activities - what are the key issues and areas for which management activities are required. Examples of issues that may be included are: dealing with water shortages, pollution control, flood mitigation, protection of the stability of the river channel structure, or groundwater management for a specified area;
* Propose subsequent planning activities - what needs to be done to achieve the objectives. In effect, setting ‘terms of reference’ for the river basin planning. Also, more immediate general planning related activities may be proposed, such as the need for community awareness campaigns, capacity building, research, or specific monitoring. Detailed planning activities will be undertaken during the subsequent water resources planning phase for river basins.

1. Planning Tasks are to be undertaken as a rapid assessment of the river basin. The law states that the time taken for formulating planning tasks shall be no more than 6 months from the date of official assignment. With this timeframe, planning tasks must be based on existing knowledge and understanding. No additional research or monitoring will generally be undertaken.
2. Planning tasks should identify or set both long-term objectives for the river basin (vision, water source functions, and objectives), and also 5 year targets for overall water management. This is based on a principle of continuous improvement in water resources management.
3. To ensure on-going improvement, management objectives and targets for the river basin must be responsive and adaptive to improved knowledge and changing social and economic circumstances and values. Management planning should be reviewed in five to ten year cycles.

# Preparatory activities for planning tasks

1. There are a number of important preparatory steps to be taken before beginning the main activities for formulation of the Planning Tasks. The preparatory activities pull together several key pieces of information to set the foundation upon which the formulation of the Planning Tasks will be carried out.

## Delineate the planning area

1. A river basin is an area where surface and groundwater sources naturally run into a river and flow out at a common point or into the sea.[[2]](#footnote-2) The topographic boundary that separates runoff between two basins is called the drainage divide. These guidelines are focused on the planning for inter-provincial river basins; the planning of which will be carried out by MoNRE according to the LWR.
2. The first task is to prepare detailed maps clearly showing the following aspects, as a minimum:

* The boundaries of the Basin as formed by the drainage divide. For international river basins this may extend into other countries.
* The hydrological sub-basins, which are the areas of land within the river basin where surface water from rain converges to a single point.
* The rivers, streams, and other surface water features (lakes, estuaries, reservoirs, canals, etc) within the sub-basins.
* The main physical features of the Basin area such as land slope, land use, etc.
* The groundwater sources in the Basin. It is also important to clearly determine to what degree groundwater is to be included in the planning activity. If it is not, will a separate groundwater management planning activity be undertaken?
* The administrative boundaries of Provinces. For Planning Tasks this is probably a sufficient level of detail, but for full river basin planning, lower levels may need to be mapped.
* The major population centers;
* The major irrigation schemes, including boundaries and main infrastructures;
* Major infrastructures on the mainstream such as hydropower/irrigation dams or weirs, water supply and treatment plants, water locks, etc.;
* Important socio-economic and cultural features; and,
* The major environmental features (e.g. conservation areas, wildlife preserves, wetlands, and protection forests).

1. Based on the above information, a text description of the Basin area, sub-basins, and aquifers should be developed.

*A note on delineating groundwater sources*

*Managing groundwater in a large river basin is ineffective without first identifying individual groundwater resource units.*

*In the preliminary phase, the aim is to identify individual groundwater sources in the sub-basins at a general level of detail. This should consist of a basic description and characterization of each source based upon existing data and information. A description of the spatial extent of the aquifer should be included, if possible.*

*The delineation of groundwater sources should be based on geological or hydro-geological characteristics. They most often follow the known extent of geological and hydro-geological features and should be hydro-geologically continuous. Do not use administrative boundaries for the purpose of delineating groundwater management areas. Groundwater areas that cross the border into neighboring countries may be the only exception to this rule.*

*Broad scale geological maps can be used for this initial delineation. Four major categories are recommended:*

*1.    Alluvial*

*2.    Coastal Sands*

*3.    Fractured Rock*

*4.    Karst rock*

## Stakeholder Participation

1. An important part of a planning process is the active participation of stakeholders. Participation is a core principle of an IWRM approach to water management. Stakeholder participation is a two-way process necessary to:
2. Gain feedback, information, and data from key stakeholders to inform the analyses and assessments underlying the formulation of planning tasks, and to aid in the design of the specific planning tasks. Specifically:
   1. To identify and define the characteristics of key stakeholders.
   2. To assess the manner in which they might affect or be affected by the Planning Tasks or plan outcome.
   3. To understand the relations between stakeholders, including an assessment of the real or potential conflicts of interests and expectations between stakeholders.
   4. To assess the capacity of different stakeholders to participate.
3. To educate and inform stakeholders of the planning process and the results of the planning process
4. The level of stakeholder participation can vary according to purpose, from simply informing stakeholders to full empowerment, as shown in Figure 4.

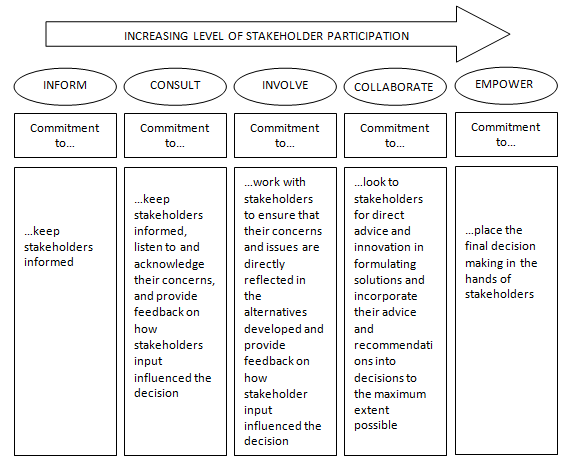


Figure 4: Degrees of Stakeholder Participation

1. This two-way collaboration and consultation process with stakeholders builds credibility in and support for both the process and results, which in turn facilitates efforts to implement the results water resources plan. International experience shows participation to be one of the keys to the long-term success of the planning activity.
2. The key stakeholders will be those involved with the main issues in the basin. That is, key stakeholders are those most likely to be affected by or impact on the important issues in the basin. As the formulation of the Planning Tasks is considered a rapid assessment, the identification and involvement of stakeholders will need to be appropriate to the timeframe and available budget and resources.
3. In the current Viet Nam context and for formulation of the planning tasks, planners will likely have a good existing general understanding of the main issues and stakeholders. This knowledge should form the basis for developing an initial list of stakeholders to be involved in the formulation of the Planning Tasks. **Ultimately, it is up to the planners to decide the appropriate scale and degree of stakeholder participation.**
4. Stakeholders should be involved with the entire planning process and not just presented with results at the end. Additionally, the SPP should remain flexible to allow adjustments throughout the planning process as new stakeholders and issues are identified
5. After identifying the key stakeholders, engagement process, activities, and expected outcomes, a SPP should be formulated as a written document. This document will serve as a basis for undertaking the various stakeholder participation activities at various stages of formulating the Planning Tasks. It also adds consistency and transparency to the planning process.

### Important points to remember about stakeholder participation

1. If resources are limited, then the extent of stakeholder involvement must be scaled back. For example, for a controversial plan, instead of using a variety of techniques to reach as wide a range of stakeholders as possible, it may be decided to set up a stakeholder advisory group and rely on the members of that to communicate with their constituents.
2. The Planning Tasks will concentrate on high level issues, outcomes, and solutions. Therefore, the stakeholders are probably best represented by peak representative bodies, rather than local provincial bodies.
3. The stakeholder for each water resources plan for a river basin will also differ as the issues to be addressed are quite different and will affect different people. Some stakeholders might have general interests in all planning issues (e.g. environmental stakeholders), but others will have a specific interest in a particular issue (e.g. industry bodies and pollution control). Some issues may be considered at the full river basin scale (e.g. for protection against flooding) while others will only concern a sub-basin or more localized area where a problem is being experienced.
4. It is important to try to get a good balance of the main stakeholders that will be involved. The stakeholders should not be dominated by one particular group of interests, for example economic development or environment protection. A balance between economic, environmental, and social interests should be specifically sought. A gender balance will also be important as women depend on water resources in many different ways to men and can provide a different perspective.

## Determine Policy positions for Plan development

1. Policy helps to ensure a common approach to important aspects - such as the determination of minimum flows or river protection corridors - and to build the commitment of stakeholders. A written policy document, formally or informally adopted by government, is a valuable indication of government directions. This is very relevant when considering a complex and cross cutting issue like water resources, where many different interests have to be considered. Without this, the planning activities will take an *ad hoc* approach to key issues, with different approaches adopted for the different river basins. Policy positions, Including strategies and programs, of the state, sectors and provincial governments will provide a basis for development of a basin vision.

### What should be done

1. MoNRE can prepare documents that record an agreed policy position on key planning issues or set out an interim position where this has not yet been formally agreed. Suggested topics for which sector strategy or policy notes may be required are as follows – all or some could be prepared.

* Policy advice for rivers whose flows are directly controlled by major dams or weirs
* Policy advice for unregulated rivers
* Policy advice for groundwater
* Policy advice for coastal/estuarine areas
* Policy advice across all water sources

1. MoNRE should determine an initial set of policy issues for the Planning Tasks, which will be extended as the further plans develop.
2. State policy will help ensure that all plans have a common base and a consistent approach to key issues. The documents do not have to be formal approved statements. They can take the form of guidelines of even simple instructions.

# Formulation of planning Tasks

## Data & Information Assembly

### Technical information on Water physical features

1. For most river basins in Viet Nam, data are very poor and where they exist, they are often poorly shared. Information requirements will vary for different planning initiatives –planning tasks require a lower level of detailed information than a water resources plan. Therefore, the list provided in these guidelines should be tailored to the specific planning activity being undertaken.
2. Information on physical features could include aspects such as the following.
3. ***What are the significant social, economic and natural features of the Basin?***

* Administrative features: Provinces and Districts within the basin and sub-basins.
* Natural features: water resources (flow, volume, hydrographs), river systems, topography, land use, geology, tidal regime (where appropriate), susceptibility to natural disasters;
* Social features: population (urban and rural), population density, ethnicity, poverty, employment/unemployment;
* Economic features: the GDP growth for the Basin/sub-basin/Provinces compared to national levels; the GDP contribution from the key sectors – agriculture, industry and services; hydropower potential and production; main irrigation and industrial areas, the nature of the sectors (industry - major types, numbers and location; craft villages - major types, numbers and location; agriculture - crop types, areas and locations; animal husbandry – animal numbers, locations; aquaculture - types, areas, locations-; river transport - traffic volume, major ports; tourism - type and location);
* Environmental features: water and environmental quality, conservation areas, wetlands and significant environmental features (management objectives, area and location), heritage and historical/cultural site (types, areas, and locations), species, river obstructions, heritage and historical sites.

1. ***How much water is there?***

* The major tributaries and effluents in the river basin/sub-basins; show any international relationships.
* The area of the basin and sub-basins and the area, if any, that is outside of Viet Nam. Provide the catchment area and length of the major sub-basins/rivers.
* The average (for basin and sub-basins):
  + annual flow;
  + dry season / wet season periods;
  + dry season flow / wet season flow ;
  + flood inundation indicators (flood water level in some critical areas, peak flow in some cross-section of river and its probability of occurrence).
* Surface water availability per basin and sub-basins – water volume per person (both current and future). [Note that by international standards, areas with average per capita water availability lower than 4,000 m3 per person per year are considered nations with inadequate water supply; those lower than 1,700 m3 per person per year suffer water stress; and lower than 1,000 m3 per person per year suffer real water scarcity].
* Current return drainage flows and their location.
* Natural discharge of surface water between sub-basins.
* Current major water infrastructure, storage and diversion works; and important infrastructure limitations which contribute to delivery problems. Describe the impacts of existing reservoirs of storages on flows*.*
* Current inter-Basin (or sub-basin) diversions using infrastructure.
* Flood damage, current flood protection works; provide maps or other indicators of maximum inundation.
* The major aquifers in the basin (boundaries, map); for each outline the aquifer type, aerial extent and depth of system, depths of main water bearing zones, how the aquifer recharges, and where it discharges to.
* The natural recharge or sustainable yield (available water) of aquifers where this has been estimated.
* Inter-connection between the land, surface water and groundwater.
* Determine the water sources for the basin/sub-basins.

1. ***How much water is extracted and used?***

* Current average yearly and dry season water demands for all sectors, for the Basin and sub-basins, and the distribution of that over the year.
* The amount of water that is stored in the reservoirs as active storage.
* Current dry season water demands for all sectors, for the Basin and sub-basins, and the distribution of that over the dry season.
* The nature and extent of current basin and sub-basin water shortages.
* The extent and severity of water shortages (scale, location and timing during the year).

1. ***How much water will be needed for the future?***

* Future average yearly and dry season water demands at current year and 20-25 years in the future for each sector, each sub-basin.
* Future basin and sub-basin water shortages (duration of shortage in year, at current year and 20-25 years in the future.
* Change in the drought indicators in the future (scale, location and when in year).
* What are the other water demand and supply issues?
* Current environmental water needs.
* Saline intrusion control flow requirements.
* Important water resources development projects (projects already identified and approved, objectives, scale) to the year 2010 and 2025 in river basins.
* Inter-basin transfers - plans/projects.

1. ***What is the current and future pollution situation (aggregate to sub-basin scale)?***

* Progress with the management of units causing serious environmental pollution under Decision No. 64/2003/QĐ-TTg by Province: how many units are listed, how many fully dealt with, how many partially dealt with and to what extent, how many not dealt with. Reasons for non-compliance.
* Progress with the application of Decree No. 67/2003 for industry and domestic. For each province, what proportion of dischargers pay the fees (separate into domestic, industry), how much revenue is generated, how is the local component of the revenue spent.
* The number of Board of Assessment environmental impact reports that have been considered and granted for production units to operate and invest in projects inside and outside of industrial zones. Describe actions and activities to ensure compliance with the approved reports.
* Current sewerage treatment plants, their level of treatment and volume of discharge.
* Volume of untreated domestic effluent in provinces – indicate key locations.
* Projected future volume of domestic wastewater discharge – indicate key locations.
* Current and future volumes of hospital wastewater discharge and locations; indicate treatment levels if any.
* Current major industries and craft villages discharging wastewater, their locations, their estimated volume of wastewater discharged and the level of treatment before discharge.
* Future projected industrial wastewater discharge.
* What is the quality of water in the water sources in the basin?
* Where does significant surface water pollution occur and where are the pollution hot-spots. What is the nature of the pollutants (biological, chemical, metal; the level of river water quality for key parameters compared to National standard QCVN 08: 2008/BTNMT at key locations)?
* Where does significant groundwater pollution occur and where are the pollution hot-spots. Describe aquifer vulnerability to contamination. What is the nature of the pollutants (biological, chemical, metal; the level of river water quality for key parameters compared to National standard QCVN 08: 2008/BTNMT at key locations)?
* What pollutants are related to which pollution sources?
* Impacts of poor water quality on human health and economic activities (e.g. higher costs of water treatment in water factories, higher costs for industry, loss of aquaculture animals etc)
* Pesticides and herbicide use in agriculture in provinces (quantities per crop type, per location).

1. ***What is the environmental health of the water sources in the basin?***

* Composition, abundance and condition of aquatic (in-stream) plants, animals and ecological communities, including fish and shell-fish, species, aquatic flora, and benthic invertebrates.
* Composition, abundance and condition of other water dependent plants, animals, and ecological communities including those existing on floodplains, wetlands and in the riparian zone.
* Extent of river affected by human activity.
* Extent of riparian zone affected by human activity.
* Extent of lakes affected by human activity.
* Extent of estuaries affected by human activity.

1. ***What*** ***are the other physical issues that can impact on the water source or its health?***

* Impacts on water resources in the basin through activities such as changes in land use, vegetation cover, catchment forestry issues, or human activities such as sand mining.
* Coastal zone, river bed/river bank stability issues.
* Impact of climate change - identify the main projections (20, 50, 100 years) for the river basin/sub-basins regarding temperature, rainfall, river flows, seasonality, water related disasters

### Information on the Non-Physical Aspects of Water Management

Sources of information and data should be identified to describe the non-physical aspects of water management covering aspects such as the following.

1. ***What institutional arrangements are in place?***

* Which Ministries, Provincial Departments, or other Government agencies are involved with water management, regulation, or use? What are their main responsibilities, tasks, and functions?
* What are the current activities of the main institutions (e.g. permitting, licensing, regulation, etc.)?
* What communication and coordination arrangements are in place for between provinces and between province and central level? What is purpose and functions?
* Existing major State Owned Enterprises operating in the basin – for service provision (Irrigations companies, water supply companies); for commercial purposes (agricultural production, aquaculture and fisheries; industry); for river boat transportation; for tourism.
* Water User Associations.
* Water related NGO’s active in the basin

1. ***What water services are currently provided?***

* Current services provided – water for living, sanitation, irrigation, drainage, etc. Describe the level and extent of services, coverage, gaps, beneficiaries, meeting standards, efficiency, etc.
* Current charges for services and the current costs – who pays, how much, how is the revenue used?
* Condition of the current physical assets on which the services are based – dams, weirs, pipelines, pumping stations, dykes, etc.

***What are the current Functions of the main water sources?***

1. “Functions” of a water sources, introduced by the LWR, is a new concept for Viet Nam and the policies for the development of the approach and is implementation have not been fully developed. However, the identification of the functions of water sources plays an important role in identifying key issues within the river basin. Functions of water sources as defined in the planning tasks will play a very important role in subsequent planning activities, as well as management of the river basin including issuance of water licenses and waste water discharge permits.

* The current uses of rivers, lakes, reservoirs, wetlands, groundwater, etc. in the basin are the starting point for setting up functions. The current uses should be established for inclusion in the Status Report.
* Those developing the Planning Tasks (or water resources plan for a river basin) should prepare a statement of current river basin functions and consult with stakeholders on this to get their agreement. This does not have to be a complicated document – a map with the functions shown for the different river sections, and a narrative explaining the assumed functions would be sufficient. The initial draft is likely to change during the consultation with stakeholders until a final agreed version is established.

***What are the other management initiatives?***

* Availability of information and data - monitoring and survey programs (surface and groundwater, quantity and quality, National and provincial levels); laboratories; use of hydrologic and other models.
* Community awareness/education – what has taken place so far, where did it take place, what was the objective, who coordinated the activity, who participated, what were the benefits?
* Water-related capacity building, training etc that has taken place - what was the aim, where did it take place, who coordinated the activity, how was the training delivered, who participated, what were the benefits?

### Information Assembly

1. Only existing sources of information and data should be used for the formulation of Planning Tasks – no additional surveys or investigations should be undertaken. During the analysis, a thorough review of data and information should be undertaken. Data and information can be assembled and analyzed in a series of background reports specific to a given sector or area. However, it is the analysis of data and information that will provide the insights necessary to formulate the planning tasks. As analyses and assessments proceed, out-of-date, irrelevant, and unneeded data and information should be discarded. Only data and information that supports the formulation of the Planning Tasks should be included in the final product.
2. Data and information should be properly cited to their source (producing person or institute, year, report title, etc.)

## Establish the water source functions, vision, and principles

### Identification of functions of water sources for the main water sources of the basin

1. Stakeholder consultation on the identified current Functions of the main water sources should seek out and identify the desired functions that cannot be currently met because of the condition of the water source (e.g. because of pollution or artificially reduced river flows). This task considers the current and future Functions to establish agreed Functions of Water Sources and to use them along with state policies to help set the Vision for the Basin, to identify the issues, and to help set the objectives for the subsequent planning activities.
2. This activity should be undertaken concurrently with the establishment of the overall Vision for the river basin. From the Vision and a comparison with the current Functions, future Functions of the main water sources can be identified. In many cases these may be the same as the current functions. But in others, these may be functions that cannot be currently met. In this case, the “functions” become a future goal and should help set the planning objectives.
3. The result will be the identification of future Functions for the Water Sources of the river basin. This does not have to be a complicated document – a map with the Functions of Water Sources shown for the different river sections, and a narrative explaining the Functions would be sufficient.
4. Once the Functions of Water Sources have been identified, this will assist the planners to identify the issues and develop planning objectives and subsequent planning activities to ensure the achievement of these over time.

### Establish a Vision statement for the planning activity

1. A Vision statement describes the overarching objective in terms of values (how things should be done.) This is a description of the best possible future outcome. The Vision reflects the current status of the basin, and points toward where the people in the basin wish to go. Ultimately, a vision creates an expectation about how the basin will be managed and developed. The gap between the Vision and the current status will help define the planning objectives and activities for the Planning Tasks.

#### Why is a water vision important?

1. The achievement of sustainability requires a strategic vision which is long-term in its perspective and links various development processes. A strategic vision for the sustainable development and management of water resources at the basin level implies the linkage of long-term outcomes to medium-term targets and short-term action.

#### What is a Vision?

1. A vision is a conceptual statement that describes a future state. It is oriented to a given time period, usually about 20 years, and should not be very long.

Water Vision – Examples

**Ohio River Basin (USA)**

“Our vision is to support and implement integrated management of the Basin’s resources to achieve sustainable economic growth, ecological integrity and public safety.”

**Thailand Water Vision**

“By the year 2025, Thailand will have sufficient water of good quality for all users through an efficient management, organizational and legal system that would ensure equitable and sustainable use of its water resources with due consideration on the quality of life and the participation of all stakeholders.”

**Anambra-Imo River Basin (Nigeria)**

“To be the best River Basin in the country in providing the sustainable water needs of all the citizens in the South East Geo-Political Zone.”

1. A problem often experienced is that a vision may be too vague and unachievable. Ideally they should be framed in the context of the national vision for development.

#### Steps in the development of a vision statement

1. The following outlines the steps for developing a vision statement:
2. Develop a draft vision statement based on:

* The real value, preferably as expressed through the established Functions, of the basin’s water sources to the people, economy, society, and nation as a guide to basin development.
* Consideration of existing national development goals and strategies for the country, sectors, and for water resources management.
* State policies, sector programs and strategies, and provincial plans and strategies.

1. Circulate the draft to interested and affected stakeholders for comment, possibly at a stakeholder consultations or an inception workshop;
2. Revise the draft based on feedback. It should be concise, inspiring, and motivating.
3. The vision statement will create expectations for sustainable management and development of water resources that will have implications on the way water is managed, including possible changes in power structures and decision making as a result of the Planning Tasks or the water resources plan for a river basin. This should be recognized and consciously addressed throughout the planning process. While the vision statement should be bold, it must be remembered that political commitment is an early test of the likely acceptability of a water resources plan.

### Establish principles to govern the planning activity

1. Identify Principles as a basis for making decisions or a guide to action. Principles form the basis on which decision for the plan or activity should be taken. Principles are often included in legislation, strategy, or policy documents. Principles are generally not developed through a stakeholder consultation process. Those leading the planning activity should prepare a set of management principles and make this draft available to interested and affected stakeholders for comment. Article 3 of the LWR sets out several principles which govern all activities undertaken under the Law and these should form one basis of the planning principles.

## Preparation of the Status Report

1. Preparation of a Status Report is one of the most important and fundamental steps in the formulation of the Planning Tasks. The status report provides an overview of the water resource and management and use status for a river basin. It further provides analysis to identify the main issues in the river basin. The Status Report should be sufficiently detailed to adequately inform decision-making for the Planning Tasks. Although the Status Report should be “comprehensive” in scope, it does not need to be very “detailed” in scale.
2. The Status Report should cover the following topics:

A. Physical description of the Basin

B. Socio-economic description of the Basin

C. Surface water and groundwater resources status

D. Water demand, exploitation and use for economic activities

E. Environment, conservation, and species

F. Legal and institutional status for water resources management

G. Major water related investments

H. Summary of issues

1. Preparing the Status report should take place by undertaking the following:

* Calculation and analysis of Assessment Indicators;
* Conduct sector studies and specialized investigations to identify data, information and issues. Sector studies should be conducted by relevant government agencies as a means to bring in official voice and information into the planning process;
* Undertake an legal and institutional analysis;
* Analysis of major investments;
* Write the Status Report;
* Consult on the Status Report – present main findings and issues, obtain stakeholder feedback, and revise report. The consultation process builds credibility and acceptance of the report’s findings, which helps support the planning process.

### Assessment Indicators for basin analysis

1. A primary aim of the sub-basin analyses is to localize the key issues, so that details of the solutions will be more precise and effective. It will be important to make a standardized analysis across sub-basins, so that comparisons will be valid. In this regard, a standardized set of **Assessment Indicators** has been developed which can be applied to each sub-basin, using existing available information and incorporating future projections, including climate change. The indicators cover water resources, economic development, social conditions, and environmental factors, and allow a standardized analysis for each sub-basin, which may be repeated in the future to assess progress.
2. Information about the indicators and their use and interpretation is provided in the ***Guidelines on the use of Water Resource Indicators,*** available on the project website and this should be downloaded for your use.[[3]](#footnote-3) The Indicator Guidelines define each indicator, discuss the results, identify the required data for its calculation, and discuss the implications for the planning tasks.
3. The Indicator Guidelines are supported by a number of Excel worksheets that have been prepared to illustrate the calculations for the indicators. There is a worksheet for each category of indicator listed above, and an analysis worksheet that helps analyze the overall results. The worksheets can also be used as a template for your own calculations and should be downloaded from the Project website for your use. Please read and follow the downloading instructions carefully.
4. After the estimation and analysis of the indicators is complete, an indicators report should be prepared, presenting the data sources used, the charts and table created, and the main findings. The indicator report will cover the results and findings for the entire set of calculated indicators. The Indicators Report for the Red-Thai Binh River Basin is available on the project website.
5. Findings presented in the Indicators Report will provide analytical input for the status report. However, not all indicators will provide useful information and some may be non critical. Only the indicators that illustrate key issues should be included in the status report. Moreover, presentation in the status report should discuss each indicator’s interpretation and its implication for the planning tasks.

### Sector Studies for basin analysis

1. While the indicators and their analysis are a very effective and efficient means to provide an indication of many water resources and sector issues, they cannot capture many of the qualitative issues with water use and management. The indicator assessment needs to be supported by detailed studies on the many aspects of water resources management and water sector development and management. These detailed studies can also provide the base data for the completion of the indicators, when other sources fail.
2. Suggested information for a study on water resources and its management (e.g. surface water, groundwater, water quality, water related environments, etc.) are shown in Table 1.
3. Suggested information for the different water sectors – irrigation, agriculture, urban water and sanitation, rural water and sanitation, hydropower, industry, aquaculture and navigation is shown in Table 2.
4. These reports are rapid assessments and should be scheduled to be undertaken early in the process for the formulation of planning tasks. If they are delayed, important information and data may be received too late to be used in the planning tasks. Ideally, sector studies pertaining to water sectors should be carried out by relevant departments or centers under related ministries. This will lend credibility to the outcomes of the Planning Tasks and can also serve as a critical mechanism for stakeholder engagement. The timeframe for carrying out a sector study should be no longer than 3 months.

Table 1: Outline for the water resources studies

|  |  |
| --- | --- |
| **Overview of Water Resources** | 1. Water resources Status: quantity, quality, flow patterns 2. Groundwater resources status 3. Water exploitation and use; flooding, drainage, and drought 4. Water quality and water source degradation 5. Data and information quality, analysis, and availability: sources of data and information; quality of data and information 6. Water resources management 7. Natural disasters 8. Water related environment and ecosystems |
| **Identification of Main Issues** | 1. Discuss the main issues: (i) water availability; (ii) water exploitation and use (iii) water quality and depletion 2. Existing or future constraints on meeting objectives as related to water use 3. Inter-sectoral linkages with water use 4. Upstream-downstream linkages 5. Inter-sub-basin issues 6. International issues 7. Impacts: (i) of economic development on water resources (ii) social and environment 8. Monitoring systems |
| **Institutional and Management Arrangement** | 1. Key strategies, plans and programs 2. Guiding laws 3. Organizational arrangements    1. Planning    2. Management    3. Regulation    4. Monitoring - data collection and processing    5. Analysis - research 4. Human resource capacity and capabilities 5. Communication channels    1. Inter-ministerial    2. Inter-departmental    3. Central to lower levels 6. Policy tools    1. Licensing and permitting    2. Use fees    3. Discharge fees    4. Finings and sanctions 7. Budget and funding |
| **Forecasts for Water Resources** | 1. Forecast quantities of water use 2. Changes in land use 3. Potential impacts of climate change |
| **Recommendations** | 1. Subsequent planning activities, working arrangements, budget, and schedule |

Table 2: Outline for the water sector studies

|  |  |
| --- | --- |
| **General Overview of sector** | 1. General description of sector 2. Production or Supply activities 3. Employment 4. Economic contribution to sub-basin, basin, and nation 5. Main infrastructure for water delivery and discharge 6. Main sources of water 7. Land use patterns or implications |
| **Water Demand Profile** | 1. Preliminary identification of water use functions 2. Quantify water demand    1. Timing    2. Quantity    3. Quality 3. Quantify drainage and discharge |
| **Institutional and Management Arrangements** | 1. Key strategies, plans and programs 2. Guiding laws 3. Organizational arrangements    1. Planning    2. Management    3. Regulation    4. Monitoring - data collection and processing    5. Analysis - research 4. Communication channels for planning and management    1. Inter-ministerial    2. Inter-departmental    3. Central to lower levels 5. Policy tools    1. Licensing and permitting    2. Use fees    3. Discharge fees    4. Finings and sanctions |
| **Forecast for sector including water demand** | 1. Sector specific objectives for growth, water use and discharge 2. Forecast quantities of water use including water sources which future want to use or change to new water sources. 3. Changes in land use 4. Potential impacts of climate change |
| **Identify main issues** | 1. Discuss the main issues: isues in water using; issues related to inter-sectors that link with Water resources management activities 2. Existing or future constraints on meeting objectives as related to water use 3. Issues linked with water use in other sectors |
| **Identify potential solutions to overcome issues** | 1. Subsequent planning activities, working arrangements, budget, and schedule |

### Institutional and Legal Analysis

1. An institutional analysis is an important component of the Status Assessment and formulation of the Planning Tasks. As institutional analysis requires assessment of qualitative information and judgment on effectiveness of arrangement, it is not fully served by the indicators.
2. Much of the information for the institutional analysis can be obtained from the sector studies. The sector studies include an analysis of the policy, regulatory, and institutional frameworks for management of water resources and related sub-sectors. Management of water is generally across a number of ministries and provinces – there are many interests and aspects to cover. However, the Planners will need to pull all the institutional and legal information together and conduct a synthesized analysis of it. An integrated perspective will assist in identifying legal and institutional issues that will constrained or facilitate good water resources management.
3. The institutional structure in Viet Nam is quite complex, so the institutional analysis should maintain a high level perspective. The institutional analysis should be purpose driven and starting at the central level working down as needed. A general guidelines to approach the institutional analysis is as follows:
4. Identify the main ministries based on management of surface and groundwater and main water using sectors (e.g. agriculture, hydropower, etc).
5. Build a profile for each institution regarding departments or centers responsible for planning, management, data & monitoring, research and analysis.
6. Provincial and district level: Each national level institution can also provide information on the structure and function of agencies at the provincial and district level, according to identified purpose.
7. Provincial People’s Committees should also be contacted regarding provincial water resources planning, use and monitoring.
8. The most efficient way to complete the profile is to meet with each organization in person. Alternatively, if the organization is part of a Ministry or an Agency of the Ministry, it may be appropriate to meet with Central level managers to obtain the information. It is helpful to review the legal documents that establish the institution before meeting with them, to have a good understanding before the visit.
9. Information from the sector studies and the synthesized analysis will highlight the key issues for legal and institutional arrangements for water management in the basin. The key issues are the existing or future conditions that will prevent effective water resources management from taking place and objectives from being met. For example, a lack of a coordination mechanism for reservoir operation rules between hydropower production and irrigation demand, would be an issue to be addressed. These findings will be a key part of the Status Report.

### Analysis of major investments related to water resources management

1. The status assessment should take note of existing and planned investments related to the water sector occurring in the basin. Investments can be from government, private sector, or international development partners. The status assessment should determine what these investments are, by whom, where they are taking place, who are they benefitting, and what their impact is on water resources in the basin and sub-basin. This information will complement the State budget information provided in the institutional profiles to provide a complete picture of the investments in water resources in the sub-basins.
2. The information from this section will help add detail as to where certain issues may already or will soon be addressed. This can be reflected in the planning tasks. For example, investment in a new industrial park will increase the need for planning on water supply, treatment and discharge, and environmental protection.

### Identification of the Key Issues

1. The process developed for the formulation of the Planning Tasks explicitly includes several methods for identifying the issues. By using multiple methods, a more comprehensive perspective is taken, as well as allowing approaches to be more credible and reliable. The approach draws on technical analysis, management knowledge, expert opinion, and stakeholder feedback.
2. While the previous activities have generated a lot of information and data, and the indicators allow for a rapid identification of issues within the basin and sub basins, as well as between sub-basins, there will still need to be considerable analysis done of the information and data. There is no easy way to make the issues reveal themselves, especially in terms of priority. Some issues will be obvious, some will need to be considered within the context of managing water resources to meet demand or objectives. Some issues will only be revealed when combining different bits of information. Identification of issues will involve individual analysis and group thinking.
3. The basic framework for approaching the identification of issues is to look for areas where water resources and management will be unable to meet water demands and objectives, achieve sustainable use and protection of water sources, or provide protection of from water related natural disasters. These should then be framed within the context of:

* The importance of water dependent economic activities to the sub-basin, basin, and nation;
* The importance of water related social conditions to the sub-basin, basin, and nation such as employment, food security, poverty, health, water supply and sanitation, and vulnerability to water related disasters;
* The importance of environmental and ecological status and conditions to the sub-basin, basin, and nation, such as pollution, loss of natural habitat or species, degradation of catchment condition; and,
* Relative level of water security currently and under future conditions, including changes in water use in upstream countries and projections of climate change.

#### Identifying Issues from the Assessment Indicators

1. The Assessment Indicators provide a systematic and transparent analysis of various water resources aspects which can be examined to identify key issues. The indicators can be studied to identify whether certain issues exist in the basin, where they exist, and to what extent they exist. The results should be set out in the Status report. Planners should note these.
2. Assessment Indicators should be reviewed individually. Some issues will become apparent from the results of a single indicator.
3. Assessment Indicators can be combined and analyzed together to see where a combination of certain indicators may point to potential problems or solutions. For example, low dry season water availability, combined with high dry season irrigation demand, and high upstream storage capacity can point to the need for integrated operation rules for upstream dams. Or poor water quality in an area with high domestic water demand may point to the need for river restoration efforts, alternative water supply sources, or more stringent discharge regulation and enforcement.
4. There is no blue print for this type of integrated analysis. However, planners should think in terms of MoNRE’s water management functions and mandates as related to helping water supply meet water demands and protecting water sources (water source functions and objectives). Input from sector studies and stakeholder consultations can also highlight issues, and the Assessment Indicators can be used to confirm these issues.
5. To assist the complete analysis, all of the indicator results are brought into one work sheet - “Worksheet 7 - Example calculation sheets – Analysis”. The results from all of the indicator worksheets are automatically transferred to this work sheet, provided that you have linked all of the worksheets as set out in the downloading instructions on the project website.
6. A more detailed analysis of the indicator results can be done in two ways:

* Look at groups of indicators that allow you to explore a number of main issues such as: international water dependence, dry season water availability, annual water exploitation and stress levels, water storages and their interaction, population and its growth, poverty or interlink indicators between poverty and low GDP per capita, fair provision of urban water services, fair provision of rural water services, natural disasters, economic development, economic and efficient use of water, protection of water generating areas, protection of water related ecosystems, preservation of natural flows in the Basin, water quality, basic survey and assessment, use of regulatory instruments (licensing, EIA), use of economic instruments.
* Look at each sub-basin separately. Analyze the indicator results for each sub-basin to identify its features, the main issues, the linkages between the sub-basins, and how each sits in the context of the Basin as a whole. You should prepare a summary for each sub-basin.

#### Identifying issues from the Sector Studies

1. The sector studies should be prepared by departments or centers within Ministries directly responsible for the management of a specific sector. The sector studies specifically ask for an identification of the main issues. These issues should be linked supporting data and information within the study. It may be necessary to ask for clarification on why a particular issue has been identified.
2. By their nature, sector studies will be sector specific. The issues presented should be assessed to see where they may be cross-cutting issues with other sectors. Additionally, missing issues should be identified. For example, a sector study on industrial water use may neglect to include issues concerning wastewater treatment and discharge. Whereas, a sector study on water resources may have identified water quality problems around industrial zones. This issue should be clearly identified and linked.
3. It will be the responsibility of the planners to place sector specific issues within an overall priority ranking of all issues. This can be done by reviewing the issues within the framework presented earlier concerning important to economy and employment, as well as level of water use. It is important to build credibility and reliability by ensuring that all sources of information are properly sited, including date and source.

#### Identifying Issues from the Stakeholder Consultations

1. Stakeholder consultation will purposively draw issues out to serve as basis for further analysis. Stakeholders can add significant insight to how specific issues affect end water users. Issues from stakeholder are important for building credibility in the results as well as generating support for the process and acceptance of the outcomes. It will be most likely that issues identified by stakeholders will be very general in nature and without supporting analysis, information and data.
2. Issues should be reviewed by the planners to confirm their existence and help assess their priority. Issues that are repeated frequently are likely to be more important and should be noted. Stakeholder identified issues can be assessed against the indicator results, sector studies, and technical expert opinion to verify them. However, even in the absence of support information and data, stakeholder opinions should be taken seriously and included in the overall identification of issues.

#### Identifying issues from Expert Opinion

1. Technical experts will have a deep knowledge of water resources and sector issues and will be able to provide objective assessments. Technical experts may have better technical insights into issues than the managers, including an understanding of the real limitations and options for solving problems. Technical expert opinion can be gathered through consultant reports, participation at workshops, personal meetings, etc.
2. Technical expert opinion should be assessed against supporting information and data. Issues identified by technical experts should be framed with the context related to economy, employment, and water use. It is important to build credibility and reliability by ensuring that all sources of information are properly sited, including date and source.

#### Synthesizing the issues

1. All identified issues should synthesize and assessed against the information, data, and issues developed from all sources. This will ensure that the issues that are most widely recognized and supported with sound information and analysis “rise to the top”. The results of this analysis should be incorporated into the Status Report.

### Write the Status Report and consult

1. With the completion of the previous activities, the Status Report can now be finalized. A general outline for the Status Report is suggested below. The Status Report should focus in on the key issues along with the data and information required to support those findings. Additional information may be included if it will aid decision making required for the formulation of the planning tasks. The Status Report should not be a sprawling collection of all the data and information collected, but rather a focused report reflecting careful analysis and judgment of issues and content. The suggested outline is as follows:

Section A. Introduction

Section B. Physical description of the Basin

Section C. Water resources status

Section D. Groundwater resources status

Section E. Socio-economic description of the Basin

Section F. Water related sectors: Status and major issues

Section G. Investments in the water and related sectors

*Section H: Summary of issues*

1. As the Status Report is an important milestone in the planning process, consultation is essential to present, discuss and receive feedback on the findings in the Report and the main issues it raises. The consultation should focus on presenting the findings to a wide range of stakeholders and getting initial support and/or clarification for the main issues.

## Prioritizing issues and identifying objectives

1. The aim of this activity is to clearly establish the priority issues that the Planning Tasks (or water resources plan for a river basin) will address, and based on these, the identification or formulation of objectives. The planners will need to:

* Identify major issues from the Status Report;
* Prioritize issues to focus on those that are the most critical for the Plan to address;
* Obtain stakeholder input on the priority of issues,
* Establish objectives for the planning process and the resultant Planning Tasks or water resources plan.

### Prioritizing issues

1. The Status Report will identify a wide range of issues that that are identified in the Status Report; too many to deal with effectively in the Planning Tasks. In order to keep the process manageable, the issues will need to be prioritized. The prioritization process can consider whole basin issues, sub-basin issues, management issues, and sector specific issues.
2. The issues should be extracted for the Status Report, placed in a master list, categorized, and numbered. There will be many issues identified in the Status Report, so some specific issues will need to be grouped into a less specific issue for on-going analysis. The list should be reviewed to minimize any duplication or ambiguity.
3. The process for prioritizing issues should establish criteria against which to determine priorities. Such conditions may include:

* Management factors necessary for effective water management and planning;
* Large gap between existing conditions and the sustainable use and protection of water sources, or the protection of the community from natural disasters; as well as water demands or objectives;
* Projected conditions that will create a large gap between water resource conditions and the sustainable use and protection of water sources, or the protection of the community from natural disasters; as well as demands or objectives;
* Issues related to matters especially important for economic growth and development;
* Issues related to employment, poverty, food security, or other key social factors; or
* Issues related to environmental conditions, pollution or degradation of the water sources.

1. Planners and stakeholders should work together to determine the ultimate prioritization criteria; some of which may have been identified earlier during the process to establish policy positions.
2. It will be important to involve stakeholders in setting priorities for issues for the Planning Tasks (or a water resources plan for a river basin), and that common understanding is reached on the most critical issues for attention. The process for engaging stakeholders in the priority setting should be clearly identified in the SPP.
3. The result of this activity will be the identification of short list of major issues that the Planning Tasks will address. These are the issues for which the Planning Tasks will make recommendations for further actions during the full planning phase. For example, such recommendations may include one covering the preparation of a water resources plan setting out its scope and water management aspects to be covered (e.g. water allocation, pollution control, flooding), its geographical extent, its timeframe, responsibilities, etc

### Establishing objectives for water resource planning and management

1. While the prioritized issues highlight the main **problems** that need to be overcome, the objectives help define what the **solutions** to the issues will accomplish. For example, an issue may be dry season water shortages are preventing adequate irrigation in the delta. The objective for that issue could then be framed in terms of increasing dry season stream flows in the delta to meet irrigation demand. This then guides planners toward the types of options they should be considering (i.e. options that increase stream flow).
2. The aim here is to identify or formulate a number of objectives that the measures and solutions of the water resources planning must cover: these will provide a focus for all of the planning task activities. Objectives may be (i) objectives for the overall river basin, or (ii) specific objectives for a sub-basin or specific areas/subjects.
3. An objective is an issue-oriented statement that reflects the realistic priorities for the Planning Tasks. It will chart the future direction by focusing the Plan’s actions toward clearly defined purposes and policy intention. Objectives should be specific and realistic. The process for formulating objectives is:
4. Identify priority issues;
5. Determine or identify objectives; and
6. Identify policy or strategy to solve issues to meet the objectives.
7. Setting objectives before taking action is important for several reasons:

* To define specific targets, so that all actions and efforts will be focused.
* To provide a clear idea about what needs to be done within a certain time frame.
* To motivate the leaders and their teams by defining achievable outcomes.
* To provide a means of evaluating the progress or success of an action or project.

1. Objectives are important to guide the selection of measures and options of the Planning Tasks. Objectives define the focus of the planning process, and should be established based on identified priority issues, which in turn should be a true reflection of community needs and desires, and after consultation with stakeholders. Objectives can come from existing strategies and plans for provinces or sectors and can be adopted directly or modified for the Planning Tasks.
2. Each objective should cover a given issue or group of issues. The objective should be expressed in a way that is broad enough to encompass all aspects of the issue, but also be specific enough to allow measurable targets to be defined.
3. In other cases, objectives will need to be defined by the planners. The best way to establish the planning objectives is to take each of the priority issues and re-state it as an outcome statement. An outcome statement is a description of what would be needed to resolve the issue. From the outcome statements, the water resources planning objectives can be established.
4. The task for the planners is to take each of the agreed priority issues and turn them into outcome statements as the basis for determining water resources planning objectives. However, outcome statements lack the measurable specificity to make them really useful for planning, and especially implementation of a plan. The next step is to revise the outcome statements into well-defined objectives that can aimed at and be measured for progress within the planning horizon. These types of objectives embody the “SMART” characteristics.

### Making Objectives "SMART"

1. The "SMART" characteristics are Specific, Measurable, Achievable, Relevant and Time-dependent, which are described below.

***S*pecific**: Objectives should be specific. They should describe specifically the result that is desired. Instead of “build capacity in DWRM”, the objective should be “build capacity by providing training in water demand modeling and forecasting.”

***M*easurable**: Objectives should be measurable. In order to be able to use the objectives as a part of a review process it should be very clear whether the objective was met or not. Instead of "strengthen stakeholder awareness," the objective should be "improve stakeholder awareness by 15% using the HLSS survey".

***A*ttainable**: Objectives should be achievable. For instance, an objective which states "100% stakeholder awareness" isn't realistically achievable. It's not possible to expect that everyone must be 100% aware. A goal of "15% improvement in stakeholder awareness" is achievable.

***R*elevant**: Objectives should be relevant. They matter to the planners, managers and stakeholders. Relevant objectives are those that relate to the real conditions of the water resources and their use and exploitation. They are also related to the planning, functions, and capabilities of managing institutions.

***T*imely**: Objectives should be time-based. In other words, it's not simply, "improve stakeholder awareness by 15%", it's "improve stakeholder awareness by 15% by June 2015." This is the final anchor in making the objective real and tangible.

1. Outcome statements, which were derived for the priority issues, can now be turned into SMART objectives. Planners should continually strengthen the planning objectives by making sure that they include SMART characteristics.

## Defining Subsequent Planning Activities (Options & Measures)

1. After key issues have been identified and corresponding planning objective established, then the specific Subsequent Planning Activities need to be defined; essentially preparing the TOR for the water resources subsequent planning phase. The purpose of a specific Subsequent Planning Activity is to describe what water resources planning will do, through the planning process, so that issues can be overcome and objectives met. This includes the full contents as defined in Article 20 (c and d) of the LWR. Each Planning Task will be comprised of a set of planning activities that, taken together, comprehensively address key issues within the context of achieving the stated objectives.
2. Planning Tasks will be developed to address specific priority issues for the basin and for each sub-basin or local area, as appropriate. Each planning task will include specific objectives to guide planning activities to address each issue. The planning tasks will further identify a plan, general budget, and needed resources for each activity according to the objective. Further detail or additional activities may be developed during the subsequent planning activities.
3. Each planning task will be developed in a logical framework that outlines the priority issues, the related objectives, and the planning activities to address each issue.
4. This step will be undertaken carefully for the basin and each sub-basin or local area, as needed. An example if presented below (Table 5).

### Defining Subsequent Planning Activities

1. To define the specific planning activities, the preliminary steps can be taken:
2. Identify the scale of each issue as basin, sub-basin, or other locally defined region;
3. Categorize each issue as relating to water resource allocation, water resource protection, or mitigation of harm caused by water. An issue can belong to one, two, or all three.
4. Categorize each issue by involved sector (e.g. flood protection, irrigation, hydropower, etc.); listing multiple sectors if appropriate.
5. Once this is completed, a specific Planning Tasks can be constructed for the basin, sub-basin, or other river segment using a matrix constructed by issue, objective, and activity. The issues and objectives have been previous identified and can be filled in accordingly. The planners can then define which activities are appropriate to be filled in the matrix as shown in Table 5.

Table 5: Day-Nhue Sub-Basin Planning Task

|  |  |  |
| --- | --- | --- |
| **Priority issues** | **Objectives** | **Planning Activities** |
| - Water shortage results in river depletion (whole Day – Nhue sub-basin) | -Restoration of river to meet QCVN 08:2008 standards for 40% of the river | + Develop a water allocation plan (at basin level) to take into account of water regulating from other sub-basins; |
| - Water pollution (whole sub-basin) | Improve water quality to meet QCVN 08:2008 Standard for 40% of river length | +Develop a water protection plan for Nhue – Day sub-basin |
| - Water logging in areas of…… | -Flood retention and drainage to reduce flood flows by 10% for a 250 year flood event  -Reduce areas experiencing regular water logging by 75% by 2025. | + Improve flood drainage way to the sea and Develop a water drainage plan taking into account land and city drainage (in combination with flood control planning) |
| … | … | … |

*Note: This table is an example only is does not represent or cover the actual range of issues within the particular sub-basin.*

### Working arrangement and Resources for undertaking the subsequent planning activities of Water Resources Planning (WRP)

1. After the planning activities have been completely identified, then the working arrangements and required resources need to be defined for the particular Planning Task. The following subjects must be covered for each planning task.

* Identify the way to manage the implementation of WRP; financial management; implementation organizations (what line agencies required? In what sector?); key programs?
* List all resources required to implement WRP, for example:
  + Professional: agriculture, irrigation, industry, urban water supply, rural water supply, social, economic, hydropower, environment…experts
  + Mathematical models required to implement Water allocation Plan, water protection Plan, natural disaster plan…
  + …
* List of additional data and information required to implement WRP (almost data and information have been collected in Planning Tasks stage)
  + Other sectors: planning, plans, strategy, norms, international agreements; socio-economic development
  + Water exploitation and use, existing water regulation plans; water services
  + Hydro-meteor data: stations? Time series? Rainfall? Run-off? Sunlight hours? To estimate water demands.
  + Topographical data: cross sections (where? Time?) to apply in Hydraulic model (if any)
  + Land use; GSO; provincial statistic book of provinces (what provinces)
  + Maps: digital or hardcopy maps
  + Water quality data: where? Period?
  + …
* Field survey required: how many trips? Where? Purpose
  + Identify any required surveys: e.g. General survey to collect data and field survey to check water exploitation and use at some key sites
* Investigation required: What type of investigation; where? What time (for example: measurement of dry flow in January in lower Thac Huong weir...)
* List of additional studies/programs:
  + Eco-environmental study for area of ….(e.g. Red – Thai Binh Data)
  + Fishery study
  + …
* List of workshops required
* Others

### Funds required to undertake the activities of WRP

1. After the working arrangements and required resources are established, appropriate government cost norms can be consulting to estimate the necessary budget for each planning task. The required water resources planning budgets are based on the planning activities identified previously (Water Resources Planning activities) and on MoNRE Circular 15/2009, dated 4 October 2009, on the “Norm of Preparation of Water Resources Planning”. These will be used to estimate budgets required to prepare WRP (all basin and sub-basin/local areas; and all water protection/allocation or flood control plans) including:

* Budget required to prepare any Water allocation plan or water Protection Plan or Plan for negative effects caused by water or all three or two of them; and
* Budgets required to purchase computer modelling packages (if any)
* Budgets required for investigation (if any)
* Budgets required for special data and information
* Budgets required for additional studies
* Budgets required for workshops
* Contingency
* TOTAL budgets required

1. Continuing the Day-Nhue Sub-Basin example, as example budget is presented below:

#### Example: Cost estimation for Planning Task 1: Day Nhue Sub-basin

Planning activities shown in Table 1:

- Water allocation Plan – scope: **Red – Thai Binh river basin**

- Water protection Plan – scope: **Day Nhue sub-basin**

- Land and city drainage Plan – scope: **Day – Nhue sub-basin**

Table 6: Cost estimation for Planning Task 1: Day Nhue Sub-basin

| **Type of Plan** | **Area (km2)** | **Details for cost estimation** | **Cost estimation (million VND)** |
| --- | --- | --- | --- |
| 1. Water allocation Plan | 87,800 (whole Red-TB basin – Vietnam part) | 1. **Cost estimation for Water allocation Plan:**  * Estimate catchment areas – study area * Estimate all coefficients used to cost estimation for WRP: k1, K2, K3, K4, Kf, Kkh (*for Red – TB: K1=1.5; K2=1.3; K3=1.3; K4=1.1; Kkh=0.85; Kf=8.4*) * Compute integrated coefficients (from K1 – Kkh) *Kintegrated=15.078 (for Red – Thai Binh basin*) * Estimate Direct cost (according to the Circular 15/2009 dated 5 October 2009 by MoNRE) * Estimate general cost for Component Plan of water allocation | 10,367.665 |
| 1. Water protection plan | Day Nhue sub-basin  Area: 6600 km2 (including Day and Nhue river) | 1. Cost estimation for Day – Nhue water resources protection Plan   *for Day - Nhue: k1=1.15; K2=1.15; K3=1.3; K4=0.85; Kkh=0.85; Kkh=2.85*) | 1,718.737 |
| 1. ….. | ….. | 1. …………….. | …………. |
| Sub-total (1-n) |  |  | C(1-n) |
| Other cost   * Workshop | 1.5% C |  | D=1.5% C(1-n) |
| * Additional expenditures for investigation…. |  |  | AD |
| TOTAL COST |  |  | = C(1-n)+D+AD |

*Note: This table is an example only is does not represent or cover the actual costs associated with planning activities for the particular sub-basin.*

### Plans and schedule for the subsequent planning activities

1. Finally, plans and schedule for implementing the Planning Tasks need to be prepared. It is necessary to prepare the schedule to undertake all activities of each Planning Task so that the budget may be devised and followed. The plan should show individual sequent planning activities, identify who are counterparts, and identify implementing organization(s). An example summary of the plan and schedule showed below:

Table 7: Example Schedule to Implement Activities of Water Resources (Subsequent) Planning Activities



### Assessment of the Planning Tasks activities

1. Assessments are general in nature and will assist planners in ensuring that subsequent water resources planning activities sufficiently address the different components of sustainable development: economic, environmental, and social. The effort that should go into the assessments and the detail to be considered is a matter for planners to decide. A general principle for determining this is that the resources devoted to assessment should be in proportion to the scale or importance of the objectives and resources available to the planners. Judgment of proportionate effort must take into consideration the totality of the resources involved in a proposal. The assessment at the Planning Tasks level will be much simpler than that for a water resources plan, and is meant to ensure a full consideration of sustainable development principles is reflected in the planning tasks.
2. The overall aim at this stage is to identify the specific planning activities that are likely to make significant contribution to the objectives. If the assessments of the Planning Tasks reveal a shortfall in either economic, social, or environmental aspects, then the Planning Tasks should be revised to bring about a more desired balance.
3. Given the importance of stakeholder involvement at this stage - the selection of options that will impact on them is many ways - it will be important to involve stakeholders in the determination of options and this should be included in the stakeholder participation plan.

### Write up the results for subsequent planning activities

1. At this stage, the assessment of subsequent planning activities can be finalized. The remaining steps are:

* Write up the details of any assumptions and calculations;
* Include a summary of the main results for each planning activity, including explanations of rejected options; and,
* Briefly outline any recommended planning activities based on the assessment and as related to relevant objectives or key issues.
* Finalize needed resources, budgets, and working arrangements.
* Include work schedule for implementation of each planning task.
* Identify further activity for the subsequent planning activities.

# PLANNING TASKS FINALISATION

1. The remaining activities for the finalization of Planning Tasks are:
2. to finalize the draft Planning Tasks,
3. to present and hold consultations on the draft Planning Tasks, and,
4. to obtain final approval.

## Prepare the draft report

1. The Law on Water Resources outlines the required content of Planning Tasks. The Planning Tasks report should be structured based on the content described in Article 20.
2. Based on Article 20 and the example set out in Section 4.5, the final Planning Tasks Report can be drafted.
3. The Planning Task Report must provide clear guidance on the actions to be undertaken during the subsequent water resources planning activities. Each Planning Task should address each item of the contents. The Planning Tasks should state the main issue(s) and objective(s) to which they are responding. This makes a very clear statement of what is the problem and what it is planning trying to achieve. This is followed by a brief presentation of supporting information to describe the issue and justify the task (e.g. what is the nature of the issue, where is it happening, at what level, etc?). The brief statement should only address the most basic information, but also reference the Status Report as to where more detailed information can be obtained, to explain why the task is included in the Planning Task Report.
4. The Planning Tasks should also list the subsequent planning activities addressing the key issues. This part will identify the subjects and scope of each activity. It is important to remember that planning tasks define planning actions, not implementation of specific solutions. Finally, each planning tasks should set out the specific actions, estimated funds, and implementation plan for the planning task.
5. The Planning Tasks report should identify the resources required for the completion of each planning activity. The Planning Tasks should assess whether the specific planning activities match the capacities of proposed responsible bodies, and if not, they should elaborate on how these capacities will be strengthened to enable the Planning Task and activities to be carried out effectively.
6. An overall summary of the measures and requirements for all Planning Tasks should be included. This part summarizes all linked activities together and the planning activities are the input for subsequent Water Resources Planning activities in the next phase.
7. The Planning Tasks report should also recommend an agency or organization responsible for the specific proposals and associated activities, including identifying:

* Accountabilities, especially where roles are shared between responsible bodies.
* Existing processes that might be effective for coordination and communication between responsible bodies.
* Appropriate stakeholders (within Government and in the community) for implementing their assigned tasks.

## Consult on draft report

1. After the draft Planning Tasks report has been completed, MoNRE can begin stakeholder consultations as part of the process of approving the planning tasks. After receiving feedback, the planners will need to address all concerns expressed by the stakeholders.
2. The Planners should:

* Advise stakeholders that a draft Planning Tasks report is available for review and comment, along with details of how to obtain the draft and provide feedback.
* Encourage written comments and make them part of a comments register. A brief record containing all feedback can be compiled and circulated to stakeholders during this period;
* Analyze the comments and decide how to respond to each;
* Record any decisions and actions in the comments register; and,
* Inform people of the comments received and how they were dealt with.

1. Consultation on the draft Planning Tasks is an important aspect of working with stakeholders. Having involved them through the process, this is the time when the results of all the discussions and analysis come together. This process should be outlined in the Stakeholder Participation Plan.

### Description of activities

1. After MoNRE has agreed to open the draft Planning Tasks report for stakeholder consultations, it should be made available to stakeholders with a request for review and comment. A minimum 30-day commenting period should be established for stakeholders to review the Draft. Planners may determine the most effective communication techniques to interact with stakeholders and this should be part of the SPP.
2. All comments received should be carefully noted and participants should be encouraged to provide written comments during the review period. The planners should keep a copy of all comments received on a register.
3. After the comment period has closed, the planners should analyze the comments and decide how to respond to each. Even if a person’s comments are not fully accepted and incorporated into the report, it is important for people to see how their comments were considered and the reasons for any action.
4. The planners should prepare a “response to comments” document. There is no specific format for preparing such documents. Response to Comments documents should be made available to each person who submitted written comments or requested notice of the final decision.

## Monitoring and reporting

1. Monitoring the Planning Tasks provides the crucial information necessary for decision makers and stakeholders to revise and improve efforts to manage and protect water sources over time. Monitoring should focus on progress towards meeting specific objectives developed in the Planning Tasks. Effective monitoring will facilitate reporting.
2. To assist the monitoring, performance indicators should be developed for each of the objectives and actions and the means of assessing these performance indicators should be specified. If the objectives have been formulated according to SMART characteristics, the performance indicators will be based directly on the measurable component of each objective. Performance Indicators provide the basis for monitoring plan progress (completion of activities and the delivery of outputs) and evaluating the achievement of outcomes (plan objectives and its vision).
3. An agreed process should be outlined for clear and accessible reporting of progress against performance indicators. The reporting should be accessible to all key stakeholders, including those most dependent on the water resource. Responsibilities, key tasks, and timing should be determined for evaluating progress against performance indicators.
4. The Planning Tasks should specify how the lessons learned through monitoring and evaluation will be applied to future planning and management actions. It should specify the circumstances in which the Planning Tasks should be amended (i.e. what conditions would trigger an amendment; who can seek an amendment; and how will an amendment be undertaken).
5. The mechanisms for reporting should be formulated with stakeholders during the Planning process, to ensure that communication is effective.

## Finalize Planning Tasks

1. This is the final task and the aim is to revise the Planning Tasks report and submit that for approval.
2. The activities are quite straightforward and do not need guidelines:

* Incorporate stakeholder comments and implementation arrangements.
* Submit Planning Tasks for approval.

1. For this report, the project uses an unofficial project translated version of the 2012 Law on Water Resources. [↑](#footnote-ref-1)
2. For the Planning Tasks, the boundaries are largely based on the hydrological boundaries of the river basin. Groundwater that is available within those boundaries is included, although aquifer boundaries may fall outside the surface basin area. [↑](#footnote-ref-2)
3. www.vnwaterresources.com [↑](#footnote-ref-3)