



RIVER BASIN PLANNING: AN INDIAN GUIDE

Overview

Rivers are celebrated through story and worship in India, some are considered goddesses and declared as nature's wonder. Despite the importance of rivers and aquifers in India, their management faces critical challenges including water scarcity and competition. River basins therefore need to be managed in a planned, integrated and adaptive way to ensure their long-term productivity and sustainability.

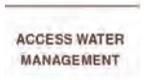
Recognising the need for integrated water planning, the Government of India is undertaking a series of river basin planning initiatives under the National Hydrology Project (NHP). To support and ensure consistency across these planning initiatives, in 2016 the Government of India requested assistance in developing a guide for river basin planning.

In consultation with the Indian Ministry of Jal Shakti and the World Bank, the Australian Water Partnership has developed *River Basin Planning: An Indian Guide* and a distilled version titled *River Basin Planning: An Indian Guide – Summary*. This brochure summarises the key components of the Guide.

The Guide describes a process, strategies and methods that can be used to develop and implement a basin plan in the Indian context. It describes options for basin strategies, institutional arrangements, and engagement processes that can be used to develop and implement a plan. The aim is to provide practical and concise guidance for water resources managers at the State and Central Government levels in India.

Prepared for the Ministry of Jal Shakti through the Australian Water Partnership (AWP) by AWP Partners Alluvium Consulting, Institute for Sustainable Futures (University of Technology Sydney) and Access Water Management.

Image: The Ganges at the confluence of Bhagirathi and Alakna Rivers (Courtesy of Ruangrat / Adobe Stock)



Purpose and Objective of River Basin Planning



River basin planning aims to manage a basin as a whole system. It provides a process, and ultimately a plan to share the available water resources between competing uses, and to consider and resolve competition and conflict in access to water resources of a river basin.



Inclusive Community, Farmer, Business, and Government Stakeholder Engagement

Community engagement is placed in the centre of the basin planning process because it is essential to each stage. The Guide details some of the key principles of engagement which should be considered during river basin planning in India. Engagement with community, business, and government stakeholders throughout the basin plan development and implementation process is necessary to ensure that the plan reflects the vision and needs of the community, garners maximum support and mitigates risks. Involvement of stakeholders can have multiple benefits including:

- **Information:** Stakeholders can bring important information to the table that will inform decision making and increase understanding by all parties;
- **Consensus building:** Building consensus throughout the planning process can reduce the risk of conflicts that can hinder the success of the plan;
- **Transparency:** Community engagement contributes to transparency of public and private actions (good governance and good business practices); and
- **Trust:** Inclusive engagement builds trust between the government and other stakeholders which can lead to long-term collaborative relationships and a more effective river basin plan.

Key Components of the User Guide

The Guide is structured around six key stages of basin planning:

Stage 1	Initiation, governance and visioning: Initiating the planning process, establishing the governance framework and agreeing on a vision and objectives for the basin.
Stage 2	Inclusive community engagement: Engaging with community, business, and government stakeholders throughout the basin plan development and implementation process.
Stage 3	Situation assessment: Establishing an understanding of the current and future conditions of the basin, as well as identifying key issues that need to be addressed by the plan.
Stage 4	Strategies and planning: Developing, assessing, trading-off and prioritising strategies for achieving the plan's long-term objectives and addressing the key issues identified in the situation assessment. The agreed strategies are then integrated into a basin plan document.
Stage 5	Implementation: Giving effect to the activities and strategies outlined in the basin plan.
Stage 6	Monitoring, evaluation, reporting and learning: Using a Monitoring, Evaluation, Reporting and Learning (MERL) framework to track the implementation and outcomes of the basin plan and inform plan revisions as needed.

Basin Planning Process and Basin Plan Content

The basin planning stages are outlined in the diagram below, showing that basin planning is a continuous, iterative process. These stages can be viewed as steps, although they need not be consecutive, and all six need to overlap to some degree throughout the process of river basin planning and management.



Determining Options and Making Trade-offs

Table 1 outlines outcomes and key considerations for each stage of a basin planning process, as well as examples of options for basin strategies to include in a plan.

Table 1. Stages of the basin planning process with key outcomes and considerations

Stage	Key considerations	Key outcomes
1 Initiation, governance and visioning	<ul style="list-style-type: none"> • Build a network of support including across States • Establish a framework for decision making • Determine responsibilities of relevant institutions • Identify potential funding – Government, multilateral development banks • Develop vision and objectives in consultation with stakeholders 	<ul style="list-style-type: none"> • Enabling policy and regulatory framework established • Enabling legislation established • Network of support for river basin planning established • Long term basin vision and objectives developed with community and stakeholders
2 Inclusive community engagement	<ul style="list-style-type: none"> • Identify all stakeholders, users and other groups with a legitimate interest • Stakeholders to be included <ul style="list-style-type: none"> – Community – water users, farmers, fishers, indigenous groups, gender equality and inclusion groups, environment and conservation groups – Government – water utilities, central and state departments and ministries (water, agriculture, energy, pollution control, development) – Business – hydropower, irrigators, agribusiness, navigation, manufacturing – Knowledge sector – universities and institutions 	<ul style="list-style-type: none"> • All relevant stakeholders involved in the planning process
3 Situation assessment	<ul style="list-style-type: none"> • Collect data and undertake modelling • Identify system needs • Determine yields • Determine urban and industry needs • Identify immediate and future data needs • Identify social, economic and environmental benefits from river flows and water extraction 	<ul style="list-style-type: none"> • Foundation information established • Information available to stakeholders • Models developed that assist river basin plan decision-making • Present and future water supply and demands quantified • Issues of common concern identified • Risks assessed
4 Strategies and planning	<ul style="list-style-type: none"> • Specify the flow regime needed to sustain river health and non-consumptive purposes, including cultural and in-stream production needs (e.g. fisheries), as well as for extraction for critical human water needs for drinking and domestic food production • Set an overall limit to extraction. This provides the basis to establish the shares between system needs and water users. This framework is likely to interact with tools and strategies for demand and supply management 	<ul style="list-style-type: none"> • Developed strategy for system needs and flow requirements • Sustainable limits on extraction established • Shares established between states and other major units (such as irrigation schemes/industry)
	<ul style="list-style-type: none"> • Plan to provide a range of incentives and tools for water users to manage their water use most effectively and efficiently in response to variations in water availability. The more control a water user has over how and when they use their share, the more likely they are to use water efficiently and conservatively This may include: water conservation initiatives including education and extension; implement system of water user entitlements, allocations, licences or individual water accounts; rostering or time-sharing diversions; water use restrictions; water pricing and water trade 	<ul style="list-style-type: none"> • Developed strategy for demand management
	<ul style="list-style-type: none"> • Plan to improve reliability of access to assist water users to meet their water requirements while maintaining the health and productivity of the water source. This may include: water conservation initiatives including education and extension; recycling and reuse; rainwater harvesting; channel seepage control; managed aquifer recharge; new water infrastructure 	<ul style="list-style-type: none"> • Developed strategy for supply management
	<ul style="list-style-type: none"> • Plan to provide for day-to-day management to prepare and respond to events such as droughts, floods and pollution incidents. This may include: flood operational plans; drought response and priorities for supply; establish system for pollution control 	<ul style="list-style-type: none"> • Developed strategy for operational management <ul style="list-style-type: none"> – Flood – Drought – Water quality
5 Implementation	<ul style="list-style-type: none"> • Identify immediate actions and time frames • Identify clear accountabilities, timeframes and governance • Develop operational procedures and responses that implement the operational strategy • Responsibility for regulatory compliance and enforcement must be clear 	<ul style="list-style-type: none"> • Actions identified to address issues of common concern in line with the basin strategies • Relevant institutions have clearly identified governance, responsibility for actions and review, budget and plans for ongoing engagement with stakeholders • Progress on the action plan is assessed and reported regularly
6 Monitoring, evaluation, reporting and learning	<ul style="list-style-type: none"> • Measurement against targets • Development of reporting arrangements • Transparency on status of implementation and progress towards outcomes • Feedback loops to adaptively manage water resources 	<ul style="list-style-type: none"> • Measured success of the plan against established targets • Relevant information is available to evaluate progress, report to the community and review or revise the plan

Drawing on examples from India and Australia, *River Basin Planning: An Indian Guide* provides water policy and management professionals with advice on the key stages of undertaking river basin planning. This brochure summarises the key components of the Guide.

For more information, and to download the Guide, visit waterpartnership.org.au.