CHAPTER 17

Collaborative Governance Framework for Urban River Management

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17.1 Introduction

Rivers and water bodies—the lifelines of urban areas are faced with complex challenges resulting from unprecedented urbanization. The situation is likely to be further aggravated due to the impacts of climate change. Therefore, improved governance of urban rivers is a key focus for sustainable river management.

Hyden and Mease (2004) outline that governance is referred to as creation and maintenance of a system that governs public arenas and regulates interaction between the state, civil society, and market-based actors. Ansell and Gash (2008) further defined collaborative governance as "a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets." They highlighted that the demand for collaborative governance has augmented due to the distribution of specialized knowledge and the strong interdependence of institutions.

Collaborative governance systems are typically unique nationally and more specifically regionally, due to the myriad intricacies of internal relationships and most importantly citizen engagement. This can range from being informed for being empowered, depending upon the participation level. The key to collaboration is alignment of stakeholder perspectives (Gray 2004).

17.2 Collaborative Water Governance and Global Scenarios

The key challenges of urban rivers—pollution, solid waste, sewerage, inadequate flow, encroachments, etc., primarily result from weak cross-sectoral governance of urban rivers. Collaborative governance approaches, considering environmental, legal, and social concerns may provide the way forward in addressing urban river challenges (Olsson and Head 2015). In the face of these mounting challenges, exacerbated by climate change, economic issues and rapid population growth, a shift from traditional governance to that of collaborative governance structures may be necessary for the purpose of achieving optimum outcomes in the domain of urban river management.

Significant reports and studies underline examples of collaboration and stakeholder engagement around the world, aimed at improving river health and wellbeing in a sustainable manner. The Murray–Darling Basin in Australia is a key example where the principles of collaboration and stakeholder engagement were utilized to improve ecological health and over allocation, generating key benefits such as saving the cost, effective implementation of activities, and better stakeholder collaboration. In this regard, the examples of the Mekong River Commission and the Nile Basin Initiative are highlighted.

Mekong River Commission (MRC): Thailand, Lao PDR, Cambodia, and Viet Nam with Upper Mekong partners, the People's Republic of China and Myanmar as observers. The Lower Mekong River Basin with 60 million population, is rich in biodiversity and the entire population on the

floodplains is dependent on them for livelihood and economic sustainability. The MRC is an example of an inter-country collaborative governance mechanism, which demonstrates regional administrative cohesiveness. Some of the aspects which were addressed through collaborative action are summarized in Table 17.1.

Table 17.1: Mekong River Commission: Key Outcomes and Collaborative Actions Undertaken

Key Outcomes	Collaborative Actions Undertaken
Optimizing sustainable development and sharing of cost benefits	Regional strategy for flood and hydropower management
	Regional masterplan for basin development with focus on: • Climate change – adaptation and mitigation plans • Livelihoods – fisheries and agriculture
Strengthening protection of mutually agreed environmental resources along the floodplains at the intersection of international boundaries	Basin-wide strategy for the development, protection, and management of selected environmental resources across all participating countries
	Creation and mandating of inter-country criteria for assessment, protection, and rejuvenation of functional assets, selection of ecologically sensitive biodiversity zones/sites
Strengthening basin-wide actions and national implementation capacity across all the participating countries	Review institutional structures and suggest harmonizing measures for homogenization of capacity of the National Mekong Committees of participating countries, and implementation of support measures tailored for each country's requirements and aspirations
	Enhancing and strengthening capacity in river basin management functions across all river management authorities of the participating countries
	Periodic review and updating of Murray–Darling Basin in Australia procedures and related technical guidelines and implementation of agreed improvement procedures
Enhanced information sharing and management of inter-country communication and development of relevant tools	Harmonized and homogenized systems, models, tools, and databases for monitoring, assessment, and for purpose of subsequent dissemination
	Improving and establishing regional flood and flash flood forecasting systems
	Establishment of critical regional communication network for flood and drought management with focus on disaster response
Reduction of knowledge gaps for selected subjects focusing on the ease of access of common transboundary floodplain themes	Conducting studies and surveys for the following topics across the participating nations: • Fish ecology • Rural livelihoods • Climate change impacts on transboundary • Increase in storage for management flood and drought • Uses of surface and groundwater

Source: Author.

Nile Basin Initiative (NBI): DR Congo, Burundi, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, The Sudan, Tanzania, and Uganda, with Eritrea as an observer: The Nile Basin covers an estimated 10% land mass of Africa, encompassing livelihoods for more than 200 million people. The Nile river flows across 10 countries, each having different requirements and priorities, but also common challenges such as increasing water demand, environmental degradation, recurrent flooding incidents, droughts, and energy insecurity. The key actions undertaken based on the NBI's collaborative governance principles are highlighted in Table 17.2.

Table 17.2: Nile Basin Initiative: Key Outcomes and Collaborative Actions Undertaken

Key Outcomes	Collaborative Actions Undertaken
Increased communication, involvement, and cooperation between Nile Basin governments and population	Sharing of flood forecasting during rainy season, which indirectly benefits 1.7 million people living in urban and rural flood-prone areas
	Nile ministers regularly approve water resources management and development projects prepared by the Nile Basin Initiative (NBI), demonstrating cooperative planning of projects having regional significance, and introducing norms that lead to achieving economies of scale, harnessing synergies, and improving regional peace and security
Enhanced basin-wide capabilities and capacities based on best practices, on trans boundary investments in the Nile Basin	Institutional and human resources capacity building through on-the-job and targeted training as well as study tours and exchange visits
	Capacity building on environmental management, power trade, water policy, knowledge management, efficient water use for agricultural production, water quality monitoring, negotiations, communications, etc.
Increased cooperative action in power development and trade, agriculture and natural resources management and development	NBI's regional intergovernmental nature and political will play a major role in replying to members' demands toward energy security challenges
	A basin-wide power development strategy by the NBI allows for larger efficiencies in the utilization of shared resources, and retains regional dialogue and trust among Nile riparian citizens
	Power infrastructure development and competitive electricity market are central to sustainable socioeconomic development and the Nile's transformation into a vibrant green economy
Enhance efficient agricultural water use with focus on food security	Collaboration within NBI member states to address the issue of food security by promoting a basin wide approach to agriculture and extending support to member states for ensuring their irrigation plans are regionally optimized and match the available water resources in the basin
	NBI support to member countries to increase efficient development of irrigation systems as well as productivity of degraded watersheds
Protect, restore, and promote sustainable use of water ecosystems across the basin	Promotion of sustainable management of wetlands with transboundary significance
	Maintaining lake and riverine ecosystems
Improve basin resilience to climate change impacts	Promoting regional policy and planning frameworks for effective climate change adaptation at both regional and national levels
	Improving basin level preparedness of countries for flood and drought risk

Source: Author.

The MRC and NBI case studies highlight the impact of international collaborative governance in addressing challenging subjects related to disputes and conflicts over the control and use of river waters, extreme poverty, urbanization, food security, droughts and floods, environmental degradation, inadequate sanitary services, water scarcity, and most significantly, the joint cooperation on shared resources.

17.3 Namami Gange and Rejuvenation of Urban Rivers

India's Constitution has allocated the responsibility of water resources development and management with individual Indian states. Cronin et al. (2016) highlight that "water governance in India and other developing nations are facing significant challenges due to myriad set of reasons such as inadequate institutional performance, duplication of roles, unclear policies, and lack of water-related expertise of urban local bodies (ULBs) and other stakeholders" at the operations and tactical level. Indian water

governance is decentralized at the federal level, wherein the Indian government is responsible for development of programs and the states are in charge of implementation and operation of key programs and projects.

The Indian government is working in coordination with state governments to achieve the United Nations Sustainable Development Goals (SDGs) by 2030. The SDGs include a water and sanitation-related goal, SDG 6. Several Indian government initiatives can be directly linked to SDG 6. The initiatives include the Water Framework Law of India 2016, the Swachh Bharat Mission, the Jal Jeevan Mission, National Mission for Clean Ganga (NMCG or Namami Gange), and the National Water Policy. Regarding water governance, the SDGs necessitate a shift toward integrated information systems by including multi-stakeholder and inter-ministerial approaches.

Namami Gange is one of the largest river rejuvenation programs aimed at ensuring pollution abatement and rejuvenation of the Ganga basin by adopting an integrated river basin approach and promotion of inter-sectoral coordination for comprehensive planning and management. The United Nations has recognized the Namami Gange program among the world's top 10 initiatives, aimed at ecosystem restoration, thereby providing a roadmap for other similar interventions across the globe (UNEP 2022).

The Namami Gange Mission recognizes that integrated river basin management needs to be interwoven with economic growth and urban transformation. Efforts have therefore been made to engage city governments in this collective responsibility of river rejuvenation and economical gains with the stretch of river flowing through or near their boundaries. This is in alignment with the Prime Minister of India, Narendra Modi's clarion call for "need for new thinking for river cities. Cities should be responsible for rejuvenating their rivers. It has to be done not just with the regulatory mind-set but also with developmental and facilitatory outlook" (NMCG 2019). A five-tier governance approach was formulated by the NMCG (National Ganga Council, Governing Council, Empowered Task Force, the NMCG, state government, district ganga committee and/or ULBs) to coordinate with multiple stakeholders for effective urban river management.

17.4 The River Cities Alliance—An Example of Collaborative Governance

The contemporary challenges for the rejuvenation of urban rivers involves complex contextualized solutions (urban sewerage infrastructure, industrial effluent management, sustainable water management, etc.), multiple stakeholders (ULBs, state departments, and ministries, agencies, and regulatory authorities at the national level) and wide-ranging implementation models (build, operate, and transfer model; design, build, finance, operate, and transfer model; hybrid annuity based public–private partnerships model, etc.). Collaborative governance is therefore a preferred approach globally, to attain the SDGs through integration of diverse interests and perspectives. Collaboration between urban areas that share a common river or within state boundaries is therefore vital to understand and overcome common challenges.

In this regard, the River Cities Alliance (RCA) was launched on 25 November 2021, as a dedicated platform for Indian river cities, to ideate, discuss, and exchange information on sustainable management of urban rivers (Ministry of Jal Shakti 2021). The RCA is a striking example of collaborative governance among central, state, and city governments, with the objective of undertaking sustainable management of urban rivers. It is a platform where the Ministry of Jal Shakti, the Department of Water Resources, River Development and Ganga Rejuvenation, represented by the NMCG and Ministry of Housing and Urban Affairs represented by the National Institute of Urban Affairs (NIUA) at the central level

collaborate to form the secretariat, which works in close coordination with the respective states and their ULBs. Within 2 years of its launch, the number of alliance member cities increased from 31 to 145 across the country, and includes one international city—Aarhus in Denmark.

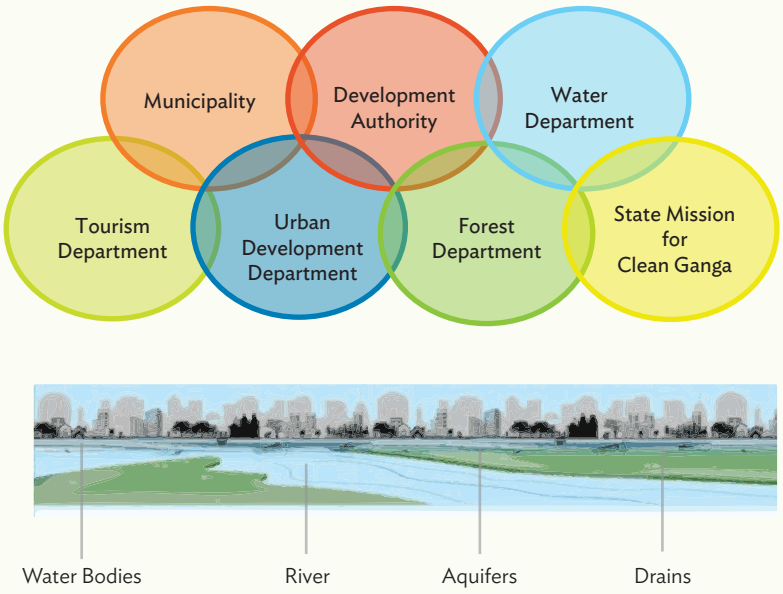
To attain the global target of the SDGs, the NMCG's New Urban Agenda (UN n.d.) leads the roadmap for RCA through the development of 10 river development goals (RDGs). The 10 RDGs are:

1. **For ensuring effective regulation in floodplain** – SDG 11.3 has direct connotation with this, as it is related to city planning and resilient cities. It is important that cities are aware of the relation with SDG 11.3 and ensure only river compatible activities in floodplain.
2. **To keep pollution free rivers** – Healthy rivers are paramount for the sustainable growth of cities. To achieve this objective, cities are required to adopt a range of interventions including engineering, regulatory, legal, economic, and social.
3. **For rejuvenation of waterbodies and wetlands in the city** – This is intended to facilitate groundwater recharge, natural treatment of wastewater, improve riverine biodiversity, and influence the micro-climate, among others, simultaneously, reviving the connection of people and natural environment.
4. **For enhancing riparian buffer along riverbanks** – The city's resilience is enhanced by protecting it from fluvial floods, erosion from river banks, and other harmful activities.
5. **For adopting increased reuse of treated wastewater** – Increased reuse of treated wastewater for activities such as agriculture, toilet flushing, road cleaning, etc., is expected to help reduce the stress on rivers.
6. **For ensuring maximum good quality return flow from the city into the river** – The increased return of flows in form of storm water and treated wastewater will contribute to maintaining the e-flow of rivers, especially in non-perennial watersheds.
7. **To develop eco-friendly riverfront projects** – Development of eco-friendly riverfront projects such as constructed wetlands, biodiversity parks, nature trails, etc., will provide environmental benefits for citizens and will also contribute to conserving the biodiversity along river banks.
8. **For leveraging economic potential of the river** – Explore the range of riverine ecosystem services and livelihood support by interventions such as agriculture, river cruises and navigation, fishery, water sports, and floating markets, etc.
9. **For river-sensitive behavior among citizens** – Enhancing citizen support to sustainably manage riverine systems.
10. **For engaging citizens in activities related to river management** – It is important to ensure participatory process for urban river management in a city that is expected to increase community ownership.

To accomplish the above RDGs, a two-pronged approach has been adopted through envisaging a governance mechanism and a cutting-edge tool for driving RCA as a city-led movement in promulgating river centric development and river sensitive planning.

Governance Mechanism: The RCA initiative kick started the beginning of the NMCG's New Urban Agenda, wherein river cities own and implement the river-sensitive development and economic rejuvenation through collaborative learning, while at the same time inspire others to take up progressive action on this front. The operationalization of the New Urban Agenda has been actualized through the medium of collaborative governance, wherein partnerships are institutionalized at each city level for the development of multi-stakeholder working groups (MWGs). The MWGs comprise representatives from ULBs, state government departments, civil society, parastatal agencies, and the private sector. The MWGs of each RCA member city are provided regular technical and capacity building support from the NMCG and key national partners such as the NIUA in this collective responsibility of river rejuvenation and economic transformation**.**

Figure 17.1: Multi-stakeholder Working Group Institutional Collaboration



Source: Authors.

Cutting Edge Tools: Central to the New Urban Agenda is the development of urban river management plans (URMPs) for river cities. The URMPs are essential documents serving as the vision documents for the identified river cities. The URMP comprises three key elements: environmental (river to support a habitat for biodiversity to flourish), economic (river to offer opportunities for economic development) and social (river to be celebrated among citizens), which together propose the 10 RDGs.

Both the MWGs and URMPs are intertwined with each other and work toward collaborative governance that help river cities plan interventions in a holistic manner which is required to revive and maintain rivers sustainably.

To accomplish the above RDGs, the RCA has been envisaged as a city-led movement for promulgating river-sensitive planning, and the conservation of water and existing water-bodies. Hence, the agenda and operations for the RCA are determined by the member cities. The activities being undertaken are in three broad areas:

1. Networking: Organizing annual river summit, facilitating exchange of official visits for member cities, twinning of cities and rivers, and publishing a bi-monthly newsletter.
2. Capacity Building: The RCA member cities are provided expert-led offsite and/or virtual training on water management, ground water, rainwater harvesting, wetland, drains, lakes, etc. Additionally, certification training programs for officials of member cities have been developed for improving capacity building at the state and city level.
3. Technical and Knowledge Support: This includes river-sensitive urban planning and interventions, innovations in urban river management, river-linked economy and rejuvenation of urban water bodies, decentralized storage of rainwater through national initiatives such as "Catch The Rain" Campaign (Kumar n.d.), safe reuse of treated water, and decentralized sanitation systems.

17.5 Impact and Way Forward for River Cities Alliance's Collaborative Governance

Moving forward, the RCA strives to take on board additional national and international cities to provide an international platform to promulgate knowledge exchange, peer learning, use of innovative technologies including nature-based solutions, facilitating institutional funding for key initiatives and partnership-based outcomes. This supports member cities in accelerating implementation of the key SDGs and realization of overarching commitments in the following manner:

SDG 6: A key component of the peer learning initiative is its focus on pollution abatement of rivers, restoration of riverine ecosystem, adoption of a circular water economy approach, and building capacity initiatives of city governments and concerned stakeholders. Under the RCA, several niche online certification programs on river management have been launched. The NMCG has published the "National Framework for Safe use of Treated Wastewater" to encourage reuse of treated wastewater, improve water use efficiency, and promote the aspects of circular economy.

SDG 11: The RCA's primary objective is to support member cities in sustainable management of urban rivers, in order to build river-sensitive cities of future. RCA was launched with the vision of developing river sensitive cities for the future. The city of Kanpur in Uttar Pradesh became the first Indian city to develop its own unique URMP. An additional 60 URMPs are proposed to be developed by the NMCG in the next 2 years (NIUA 2021).

SDG 14: Sustainable adoption of URMP components will enable cities to ensure sustenance of life. For instance, the RCA is augmenting existing efforts of the Namami Gange Mission that have led to significant improvement of biodiversity sightings such as dolphins, hilsa fish, etc.

SDG 15: A key component of the river sensitive cities is to rebuild green cover. This directly supports the restoration of riverine ecosystems and life on land. In Ganga basin, over 30,000 hectares has been afforested under the mission.

SDG 17: Central to the RCA is partnership with local, national, and international organizations, and stakeholders. The RCA is actively collaborating with countries such as Germany, Denmark, Netherlands, etc., for inclusion of international river cities as members. At present, the RCA has one international member city—Aarhus, Denmark, and efforts are underway to associate additional international cities and enable cross-city learnings.

The River Cities Alliance, through a collaborative governance mechanism envisages development and implementation of URMPs for member cities, to facilitate progressive action for urban river management.

References

Ansell, C., and A. Gash. 2008. Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory* 18(4): 543–571.

Cronin, A. A., A. Prakash, P. Sridhar, and S. Coates. 2016. Drinking Water Supply in India: Context and Prospects. *Indian Water Policy at the Crossroads: Resources, Technology and Reforms* 49–71.

Hyden, G., and K. Mease. 2004. *Making Sense of Governance: Empirical Evidence from Sixteen Developing Countries*. Lynne Rienner Publishers.

Gray, B. 2004. Strong Opposition: Frame-based Resistance to Collaboration. *Journal of Community & Applied Social Psychology* 14(3):166–176.

Kumar, G. A. n.d. CATCH THE RAIN, where it falls, when it falls... http://asokji.in/node/879

Ministry of Jal Shakti. 2021. Union Minister for Jal Shakti Shri Gajendra Singh Shekhawat Launches River Cities Alliance – A Dedicated Platform For River Cities In India To Ideate, Discuss And Exchange Information For Sustainable Management of Urban Rivers. https://www.pib.gov.in/pressreleasepage.aspx?prid=1775142

National Institute of Urban Affairs (NIUA). 2021. *Urban River Management Plan Kanpur*. https://niua.in/rca/wp-content/uploads/2022/05/Urban-River-Management-Plan-%E2%80%93-Kanpur.pdf

National Mission for Clean Ganga (NMCG). 2019. Minutes of 1st National Ganga Council Meeting. Kanpur: National Mission for Clean Ganga.

United Nations (UN). n.d. River Cities Alliance: Partnership for Developing International River Sensitive Cities. https://sdgs.un.org/partnerships/river-cities-alliance-partnership-developing-international-river-sensitive-cities

United Nations Environment Programme (UNEP). 2022. UN Recognizes 10 Pioneering Initiatives that are Restoring the Natural World. Press Release, 13 December. https://www.unep.org/news-and-stories/press-release/un-recognizes-10-pioneering-initiatives-are-restoring-natural-world