

# Unlocking SDG interlinkages through integrated governance for SDG 6 in Vietnam's Mekong Delta

This research brief highlights the linkages between targets in sustainable development goals (SDGs) related to water and other development priorities in Vietnam's Mekong delta and reports on key water-related issues in the region. It identifies target 6.5 on integrated water resource management as lying at the heart of these interlinkages and challenges. The brief also highlights current governance challenges in the Mekong delta, and the need for a more coherent, integrated, and inclusive approach.

## (1) Introduction

As a region founded upon a complex riverine system where the river meets the sea, water is both the backbone and a challenging puzzle for the development of the Mekong Delta. Managing and governing water resources to meet increasing agricultural, aquacultural, urban and industrial demands, while leaving no one behind and respecting the natural ecosystem is no easy task, especially in the delta's complex social and political contexts within and across borders.

In this brief, we present the results of an analysis of SDG interlinkages in the Mekong, showing that achievement of diverse SDG targets is closely interlinked. We also highlight the role of SDG6 at the core of these interlinkages and discuss two key challenges highlighted by the stakeholders we spoke to. The brief underlines the vital role of coherent and integrated governance and suggests the way forward for the Mekong.

Integrated water resources management refers to a cross-sectoral policy approach centred around "coordinated development and management of water, land and related resources in order to maximize economic and social welfare in

## Key messages

- Outcomes across the SDGs are positively interlinked in Vietnam's Mekong Delta.
- Water is fundamental to these interlinkages. Water-related challenges include unequal access to drinking water between urban and rural areas, freshwater and coastal zones, pollution of surface water, and the cascading impacts of climate change, sea level rise and associated hazards. They both influence and are influenced by other development priorities.
- Integrated water governance and management, SDG target 6.5, shows high synergies with all targets. It could enable and promote achievement across the whole agenda.
- The delta faces governance challenges. They include a lack of policy coherence for integrated water resources management and a technocratic approach to delta development.
- An alternative water governance model built on policy coherence, cross-sectoral coordination and people's participation principles that respect the law of nature and rights of the river can contribute to the implementation of sustainable development goals.

an equitable manner without compromising the sustainability of vital ecosystems”<sup>1</sup>. Water governance refers to “the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society” (Rogers & Hall, 2003).

This brief is based on research conducted by the Stockholm Environment Institute in partnership with DRAGON-Mekong Institute, funded by the UK GCRF Living Deltas Hub. Drawing from research with delta dwellers, including vulnerable communities, academia, and local government representatives, as well as desk-based review, the research aimed to understand interlinkages among the SDGs in a delta context. It worked in four provinces representing different zones within the delta: Tra Vinh, An Giang, Can Tho and Ca Mau (Figure 1).



Figure 1. Map of study locations in Vietnam's Mekong Delta, created with Datawrapper.

## (2) SDG interlinkages in the Mekong

To better understand interlinkages across aspects of the socio-ecological system of the Mekong Delta, the researchers talked to community members and subsequently selected 10 SDG targets that reflect their major concerns and priorities (Table 1). We did so through a series of focus group discussions with 67 farmers, poor people, people from an ethnic minority (Khmer people), youth and older people.

<sup>1</sup> See <https://www.unep.org/explore-topics/disasters-conflicts/where-we-work/sudan/what-integrated-water-resources-management>

1.5 Improve the resilience of the poor and those in vulnerable situations	8.5 Achieve full and productive employment and decent work for all
2.3 Improve agricultural productivity and income of workers in agriculture sector	9.1 Develop a resilient and equitable system of transportation infrastructure
2.4 Ensure sustainable food production systems	10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people
5.b Enhance the use of enabling technologies to promote the empowerment of women	11.10 Develop sustainable rural areas; develop technical infrastructure and improve the quality of life for rural people (Vietnam's additional target)
6.5 Implement integrated water resources management by river basin	13.1 Strengthen resilience and adaptive capacity to climate-related hazards

Table 1. Summary of key SDG targets included in the interactions analysis.

Interactions among these targets were then scored by 23 representatives of relevant governmental departments and offices and well as academic and non-profit actors in the region. Interaction scoring and analysis were done following a method and tool developed by SEI, SDGSynergies.<sup>2</sup> Each pair of targets was scored on a scale of -3 (strongly restricting) to +3 (strongly promoting) (Figure 2).

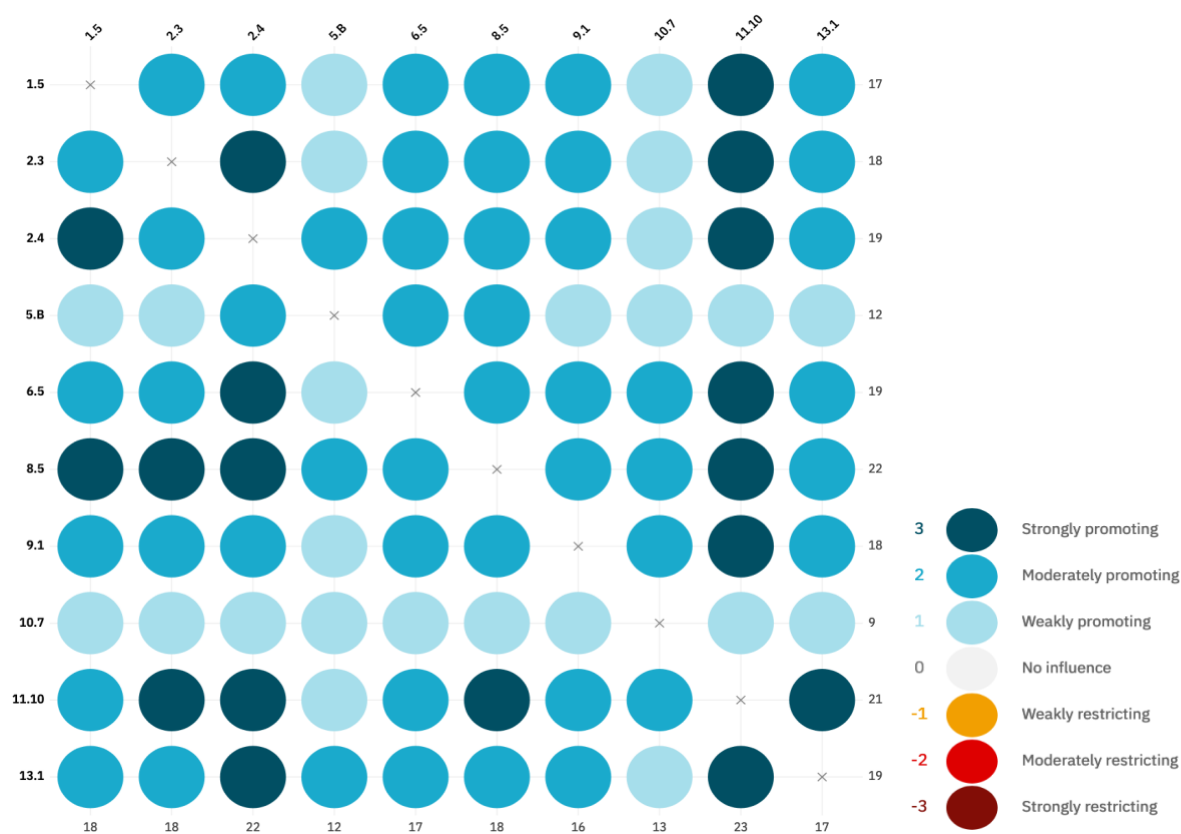


Figure 2. Result from SDG target interactions analysis in Vietnam's Mekong Delta. The top row and far-left column refer to each of the 10 selected SDG targets. Scores on the far-right column indicate the total impact the corresponding target on each row has on all other targets, while scores on the bottom row indicate the total impact that all other targets have on each target of the corresponding column.

<sup>2</sup> See <https://www.sei.org/projects-and-tools/tools/sdg-synergies/>

Our analysis shows just how closely connected this diverse range of development outcomes are. Overall, delta stakeholders perceive interactions across all ten targets to be synergistic, i.e., the achievement of each has a positive impact on the implementation of another. Enhancing livelihoods and improving incomes (targets 1.5, 2.3, and 8.5) both contribute to and are dependent on environmental sustainability (targets 2.4, 11.10, 6.5 and 13.1), social development (target 5.b and 10.7) and infrastructural improvements (target 9.1).

Vice versa, challenges facing each area also create negative effects in others. Livelihoods are unstable (targets 2.3; 8.5) due to the deterioration of surface water quality, exacerbated by water scarcity, extreme events and fluctuating weather patterns due to climate change (target 13.1). This has contributed to a large migration of rural labor force to urban areas or industrial zones within and outside the Mekong Delta (target 10.7), followed by complex challenges in terms of social security and education, among others.

Trade-offs, however, persist in the *implementation* of these SDG targets. For instance, increasing agricultural productivity and income for farmers remains an important goal. If not well managed, however, it could lead to an overuse of chemical inputs, untreated wastewater, and deforestation, while also leaving behind landless and small-scale farmers who lack capital to catch up with new technology. Trade-offs also manifest spatially and seasonally, as flood management upstream for agricultural purposes means protecting harvests during the rainy season at the expense of urban flooding downstream.

### **(3) SDG6 at the core of SDG achievement in the Mekong**

The SDG interlinkages identified above take place in a socio-ecological system that has the river at its heart. Indeed, SDG target 6.5 is among those with highest positive influence on other targets. When looking at SDG 6, the views of delta dwellers highlight two key challenges: precarious access to water, and polluted surface water. These water issues are highly intertwined with development challenges, including livelihoods, agriculture, and land subsidence, among others.

#### **Domestic water: Unequal and precarious access**

According to the official census, 98.4% of the households in the Vietnam Mekong Delta have access to hygienic water (target 6.1, 6.2).<sup>3</sup> Access, however, remains unequal between urban, rural, and coastal populations and in terms of quality. The centralized water supply systems serve 91.37% of the urban population<sup>3</sup> but only 66% of the rural population.<sup>4</sup> Clean water is inaccessible to 13.4% of the delta's rural population (Tung & Xuyen, 2020).

*“ In the inner town of Tra Vinh province, back in the day, groundwater was easily available at 1.3-2 meters below ground level. In the 1970-80s, everybody who wanted to dig a well could do so [...] and by now there is no fresh water anymore. Unlike the old days, there is no groundwater easily accessible anymore [...]. ”*

*Respondent, Tra Vinh*

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<sup>3</sup>See <https://www.gso.gov.vn/en/px-web/?pxid=E1148&theme=Health%2C%20Culture%2C%20Sport%20and%20Living%20standard>

<sup>4</sup>See <http://www.tongcucthuyloi.gov.vn/tin-tuc-su-kien/gjai-phap-cap-nuoc-sach-nong-thon-vung-5030>

Not connected to the central pipes, many households resort to private boreholes and wells for domestic and agricultural water, exposing them to water problems of pollution, salinity and scarcity . Residents in Tra Vinh, for instance, talked about difficulty getting water during the dry months while Ca Mau residents experienced a lowering water level through their boreholes requiring enhanced pumps.

Due to worsening quality and quantity of surface water, the demand for groundwater has been growing significantly (target 6.4). Respondents reported that a lack of proper groundwater management

***“ The water is poor so our shrimps keep getting diseases and die [...] We suspect the water is polluted. We do not know for sure because there is no evidence and no study has been done [...] sometimes you can see the water is brown-ish in color and smells. There is no firm evidence but we think it comes from the large-scale shrimp ponds that use a lot of chemicals.” ”***

*Respondent, Tra Vinh*

coupled with the prevalence of self-constructed boreholes leads to groundwater overextraction and subsequently land subsidence, further compounding the impacts of climate change and sea level rise (target 13.1).

### **Surface water: causes and impacts of pollution**

For many delta dwellers, polluted water (target 6.3) is a major issue that affects their livelihoods. Farmers in Tra

Vinh and An Giang reported reductions in farm income because of contaminated water from rivers and canals, and suspected industrial-scale aquaculture and agriculture to be the source of pollution. In Can Tho, urban dwellers in flood-prone areas reported highly polluted flood water during the monsoon season and resulting health impacts after the floods.

Discharges of wastewater from agriculture and aquaculture are a major challenge for water management. Annually, 1,790 tons of active snailicides, 210 tons of active herbicides, 1,224 tons of active pesticides, and 4,245 tons of active fungicides are used in rice production in the Mekong Delta (Vietnam Ministry of Natural Resources and Environment, 2018). At the same time, the coastal area of the delta has over 600,000 hectares of intensive shrimp farms, each discharging approx. 10,000 m<sup>3</sup>/ha of wastewater (Vietnam Ministry of Agriculture and Rural Development, 2021). In addition, domestic wastewater treatment system (target 6.a) only reaches 13% of the total demand of the delta.

Water pollution results in losses to the delta’s economy, affecting over 12,000 hectares of shrimp farms and incurring nearly USD 60 million in additional costs in 2018 (Ministry of Natural Resources and Environment, 2018). These impacts are most felt by the people, particularly small-scale farmers, with cascading impacts on their livelihoods and quality of life.

## (4) Management and Governance for SDG6



Figure 3. Influence of SDG target 6.5 on other targets, by descending order of impact clockwise

Our interaction analysis of different SDG targets in the region shows high synergies between the water governance target and others (Figure 3). Progress on 6.5, on water governance, has the highest impact and thus is crucial to the implementation of target 11.10 on sustainable rural development 2.4 on sustainable agriculture, 13.1 on climate adaptation and 8.5 on decent jobs (Figure 3). These targets, in turn, all have high impacts on other targets (Figure 2). Target 6.5 thus plays an important role as an enabler of the agenda achievement both directly and by unlocking synergies with other key targets.

This result is borne out by respondents' observations on the lack of coherent governance in the delta. The Departments of Natural Resources and Environment; Agricultural and Rural Development; Transportation; Finance; Construction; and Industry and Trade are all involved in water management. Yet, respondents reported little cross-departmental coordination in policy making and implementation. Different agencies are responsible for surface water, water transportation, irrigation, and so on, with little collaboration.

Whilst managing water resources falls to the jurisdiction of provincial governments, they are often focused on their own provinces without a clear understanding of how their actions can affect others. Transboundary governance is also important: countries upstream are building dams and developing hydropower plants, further reducing sediment and water flows downstream. Challenges also stem from the current reliance on technocratic and engineering approaches to water management serving intensive agriculture, e.g., digging and dredging of canals and construction of sluice gates and dikes to control floods. The heavy use of hard infrastructures leaves negative impacts on local livelihoods and ecosystems, e.g., soil erosion, reduced sedimentation, biodiversity degradation, and irregular flooding. Furthermore, decisions are taken through political interplays between the states, semi-private companies, and foreign investors, while local water users often have little say in decision making processes directly affecting their lives (Hoanh et al., 2014; Waibel et al., 2012).

## (5) The way forward

Managing and governing water resources in an equitable, holistic and integrated manner is the ultimate challenge facing people's wellbeing, livelihoods and sustainable development in the Mekong Delta. This research brief has reported on the priority targets for delta dwellers and shown how these challenges are positively interconnected. Coherent governance is a key to responding to these challenges, yet insights on current governance suggest it might fail this test.

As a step in the right direction, in 2017 the Vietnamese government passed Resolution 120 on sustainable development for the Mekong Delta, which recognizes the interconnected nature of social, economic and environmental sustainability. Integrated water resources management and limiting negative impacts of human activities on the environment are among its key principles. Implementation of the resolution, however, will not be effective without improved policy coherence and an alternative water governance model.

Addressing water challenges in the delta cannot be separated from other development priorities. To leverage synergies and minimize trade-offs between water resources management, agriculture and aquaculture, livelihood and resilience building, social development, climate change adaptation, and so on, policy integration and coordination across sectors and administrative boundaries are needed. Delta governance must respect the Mekong's complex, rich ecosystems.

The delta needs a shift away from the top-down, technocratic approach to water governance to ensure long-term sustainability. The SDGs rely on a "whole of society" participatory approach. It is crucial that future governance models and policy implementation recognize the voices and knowledges of local communities, who are key water users and managers on the ground and include them in every step of decision-making processes. Shifting water resources management away from a heavy reliance on engineering and hard infrastructures by investing in nature- and ecosystem-based solutions provide co-benefits that can contribute to more than one area of sustainable development and unlock SDG synergies.

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