



**Asian Infrastructure Investment Bank (AIIB)
Draft Water Sector Strategy
September 2019**

1. Sector Landscape

- 1. Water availability and management are crucial for economic growth, food security and trade throughout Asia.** Harnessing water's productive potential and mitigating its destructive force remain key priorities to achieving better social and economic development in Asia.
- 2. The water sector is characterized by its complexity.** In addition to domestic consumption, water is indispensable for agriculture, industry, energy production, navigation and the provision of critical environmental services. As such it cannot be considered in isolation but must be managed as an integrated resource. While water is a basic necessity of life, it confers value and can also be treated as an economic good. This dichotomy often leads to conflict. Water is managed at varying levels with a wide range of parties. The broad range of stakeholders, users, private sector and civil society add to the complexity of the sector.
- 3. Continued population growth, rapid urbanization, industrial and economic growth make Asia's water challenges more urgent than ever.** At least half a billion people in the region currently face water shortages. More than a billion do not have access to adequate drinking water supply and sanitation services. While demand for water will grow in line with population growth and urbanization (expected 30% increase in domestic water demand by 2030¹), many service providers already struggle to keep up with supplying basic services. Unless action is taken, this will deteriorate further. This is compounded by weak performance of water service providers, including very high levels of non-revenue water (water lost or unaccounted for in distribution systems), with predicted annual revenue loss in the order of USD 12 billion across Asia.²
- 4. Continued environmental degradation and climate change compound Asia's water challenges.** Climate change induced water challenges in Asia will be as diverse as its physical geography. This ranges from increased threats to densely populated coastal cities from sea-level rise and coastal storms³, to accelerated glacial melt in the Himalaya and Karakoram mountains, impacting the water, energy and food security of more than 1.9

¹ Asian Development Bank, 2016. Asian Water Development Outlook 2016: Strengthening Water Security in Asia and the Pacific. Asian Development Bank.

² Liemberg, R., Wyatt, A. 2018. Quantifying the global non-revenue water problem. Presented at the Water Loss 2018 conference in Cape Town, South Africa. Available from: <http://www.waterloss2018.com/wp-content/uploads/2018/06/08/A24.pdf>

³ Asian Development Bank. 2017. A region at risk: the human dimensions of climate change in Asia and the Pacific. Manila: Asian Development Bank.

billion people living in the 10 river basins originating from these mountains⁴. Moreover, many countries suffer from absent and inadequate approaches to safely managed sanitation, including lack of wastewater treatment capacity. About 80% of Asia's wastewater (in some countries reaching 90%) is discharged untreated to water bodies with consequences for public health and ecosystems.¹ Aside from municipal discharge and industrial effluent, freshwater ecosystems are also under increasing stress from unsustainable water abstraction, nutrient loads from increasing fertilizer use and increasing salinity. Lastly, degraded rivers and lakes induce a wide series of water problems and need considerable restoration efforts.

5. **Throughout Asia floods and droughts impact millions of people and cause losses in the order of hundreds of billions of dollars each year.** People living in Asia are now four times more likely to be affected by natural disasters, mostly floods and droughts, than those living in Africa, and 25 times more likely than those living in Europe or North America.⁵ Exposure to water-related disasters is increasing with urbanization and climate change, with Asia having the largest number of cities facing extreme risk of water-related disasters⁵. 770 million are perennially exposed to flood risks, largely concentrated in urban centers⁶. Mitigating these risks remains challenging due to the low coverage and quality of hydro-meteorological monitoring systems essential for preparing and responding to water-related disasters.
6. **Water sector issues are closely intertwined with the region's agricultural and energy futures.** As a region that hosts 70% of the world's total irrigated land⁷, increasing the efficiency and sustainability of irrigation practices are central to realizing both water and food security for Asia and beyond. Uncontrolled expansion of groundwater extraction for irrigation, domestic and industrial use is contributing to unprecedented resource depletion. Lastly, rising energy demand in Asia is leading to an expansion of electricity generating capacity including hydropower. Asia has a well-documented hydropower potential with a rapid pace of investments observed in recent years.⁸
7. **The institutional framework and policy environment in the water sector is more complex than other sectors.** Water connects across sectors and people with conflicting needs and objectives, as well as across geographic and temporal scales. This results in interdependencies across levels of government and multiple stakeholders that require clear and effective governance arrangements. Weak institutional capacity and regulatory environments are common denominators across water sectors in many Asian countries. Experience shows that an effective governance framework capable of managing interdependencies and conflicting objectives across policy areas and levels of government is necessary for investments in water to achieve their intended outcomes in a sustainable manner.

⁴ Sharma E. et al. 2019. Introduction to the Hindu Kush Himalaya Assessment. In: Wester P., Mishra A., Mukherji A., Shrestha A. (eds) The Hindu Kush Himalaya Assessment. Springer, Cham

⁵ Asian Development Bank. 2012. Special Evaluation Study on ADB's Response to Natural Disasters and Disaster Risks.

⁶ Asian Development Bank. 2012. Green Urbanization in Asia Key Indicators for Asia and the Pacific 2012. Special Chapter.

⁷ Meier, J., Zabel, F. and Mauser, W. 2018. A global approach to estimate irrigated areas—a comparison between different data and statistics. *Hydrology and Earth System Sciences*, 22(2), pp.1119-1133.

⁸ Zarfl, C., Lumsdon, A.E., Berlekamp, J., Tydecks, L. and Tockner, K. 2015. A global boom in hydropower dam construction. *Aquatic Sciences*, 77(1), pp.161-170.

8. **While the benefits of investing in water are clear, a significant financing gap remains.** Of the approximate USD 880 billion spent on infrastructure regionally in 2015, only 5% or USD 44 billion went to water. Of this, 98% came from the public sector, with private sector investment significantly lower than in other regions and concentrated mostly in China, Russia, Malaysia and the Philippines. Using the Sustainable Development Goals (SDG) as a base for assessing investment needs, an average of USD 120-330 billion per annum to 2030 is required, representing 2.5 – 7.5% of regional GDP. Water supply and sanitation represent the greatest investment need with USD 93-153 billion / pa followed by flood protection (USD 93-153 billion/pa) and irrigation (USD 30-64 billion / pa). Multilateral Development Bank (MDB) water financing in Asia is approximately USD 9-13 billion annually with an additional USD 1-2 billion contributed by bilateral assistance.⁹ With the public and private investments in water infrastructures have been in the order of USD 30-50 billion per year¹⁰, an annual financing gap of approximately USD 55-290 billion exists.
9. **Against this backdrop, investments in water infrastructure become crucial for the region to achieve its economic and social development goals while also managing resources and adapting to climate change.** When water risks are not adequately managed, economic impacts are significant. At least USD 360 billion are lost annually across Asia due to inadequate water supply and sanitation, water scarcity and flood damage alone.¹¹ Conversely, as a WHO study found, every dollar invested in water and sanitation brings direct and indirect economic benefits ranging from USD 3 to USD 34.¹² Harnessing water's economic and productive potential and mitigating its destructive force are key to achieving water security in the region. The Asian Infrastructure Investment Bank's (AIIB) mandate strongly aligns with the needs and opportunities in the water sector. The Bank has undertaken a sector analysis, working with key experts, practitioners and stakeholders, to develop a strategy to guide AIIB's investment in the water sector.

2. Vision and Guiding Principles

10. AIIB is committed to supporting its Members' efforts to **ensure the availability and sustainable management of water and sanitation for all, in line with the SDG goals.** To meet the diversity of needs, the Bank's investments will be client driven. Additionally, the Bank believes it has a unique and catalytic role in improving the efficiency of the water sector through the application of innovative technologies.
11. To guide the strategy and the Bank's investment focus, the sector has been divided into three broad investment categories as shown in Figure1.

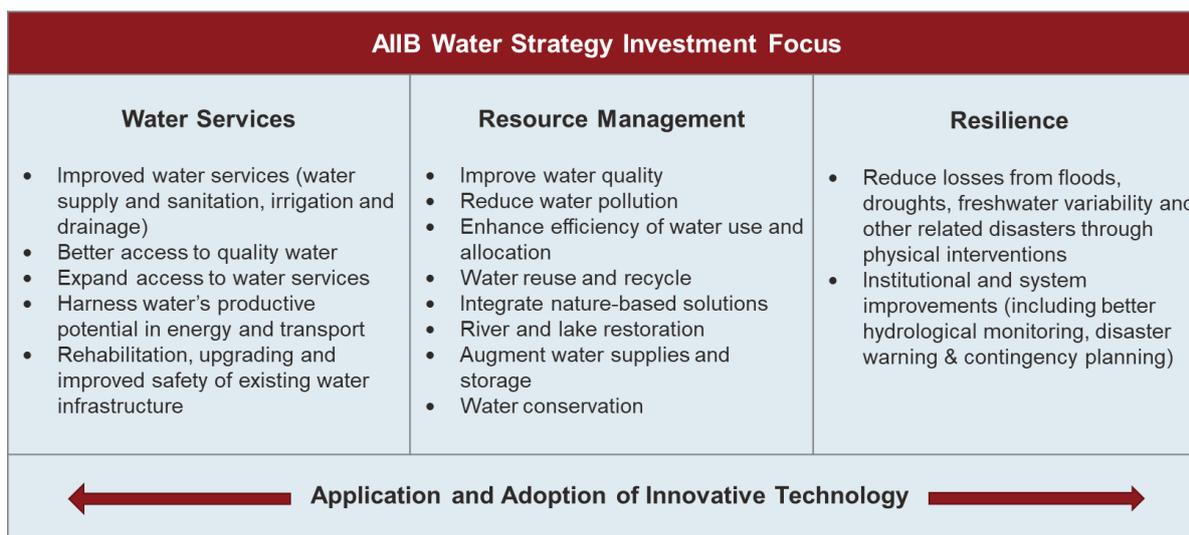
Figure 1: AIIB Water Strategy Investment Focus

⁹ Average investment in the Asian Water Sector in past five to ten years per financier: World Bank, USD 5-7 billion per annum; Asian Development Bank, USD 3-5 billion per annum; other MDBs (including Islamic Development Bank, European Investment Bank and European Bank for Reconstruction and Development), USD 1 billion per annum

¹⁰ Asian Development Bank. 2017. Meeting's Asia infrastructure needs. Manila: ADB. Given the uncertainty in estimates of current investments, the data are presented as a range.

¹¹ IWMI estimates from: Sadoff, C.W., et al. 2015. Securing water, sustaining growth: Report of the GWP/OECD Task Force on Water Security.

¹² WHO. 2005. Making Water a Part of Economic Development. 48 pps.



12. The Bank's investments in the three key areas of improving access to water services, increasing the availability and quality of water through improved resource management, and improving resilience to the impact of water related disasters will be guided by the Bank's mandate and thematic priorities and the following principles:

- Principle 1 – Promoting sustainable infrastructure.** The Bank will finance projects which have a positive impact on sustainability and maximize environmental and social outcomes in line with the objectives of the SDGs. Sustainability is also interpreted to mean that projects are part of client's national level strategies, thus are client-driven. Operational sustainability is promoted through the identification and allocation of reliable sources of funding for operations and maintenance (O&M). This principle also recognizes that water infrastructure is not the end in itself. Outcomes such as improved water services, better resources management, reduction of flood and drought risks, improved ecosystems and sustainable financing and operation are the ultimate objectives.
- Principle 2 – Integrated resource management.** This recognizes that water is a finite resource that is renewable only if properly managed. The Bank will adopt a holistic view of water by promoting an integrated resource management approach that recognizes the important interrelations between water sub-sectors, the cross-border nature of water and the essential connectivity of water to other priority sectors of the Bank such as transport, energy, and sustainable city development. As a shared resource that may cross administrative boundaries within a country or between countries, investments in water infrastructure need to be carried out in a manner that helps build connection, coordination and collaboration amongst stakeholders and does not generate material adverse impact on any riparian countries or territories as detailed in the relevant operational policy.¹³
- Principle 3 – Mobilizing private capital and efficiencies.** The large investment gap requires the mobilization of additional finance, including private capital. It is recognized that regional experience of private sector participation to-date has been mixed and that the lack of financial viability often discourages the private sector. AIB will promote the

¹³ Asian Infrastructure Investment Bank. 2017. Operational Policy on International Relations. AIB: Beijing.

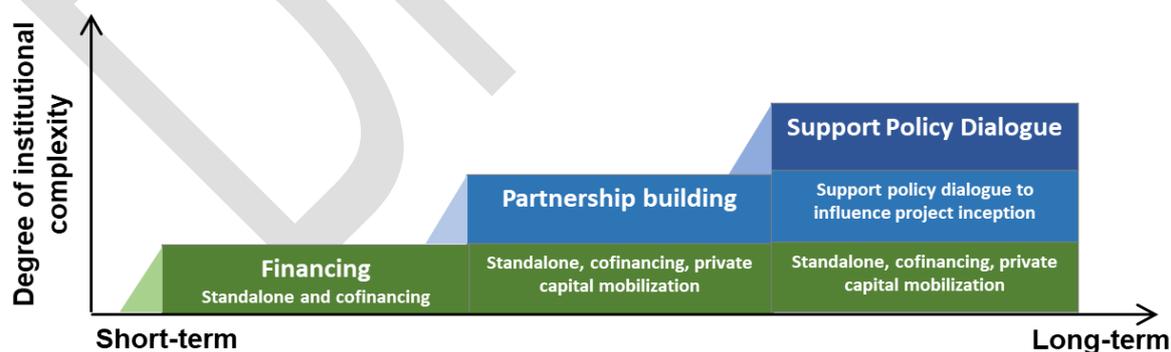
harnessing of private sector innovation and expertise, management and optimization efficiencies, together with increasing the availability of private funds.

- Principle 4 – Adopting innovative technology.** Effective monitoring, data management and analysis can significantly improve efficiency particularly in governance, management and service delivery. Technology is a major contributor to increasing the efficiency of water use, allocation, delivery and treatment while also reducing the cost of water management through energy and process efficiency measures. Technology and data management is also critical to improving resilience, particularly disaster prediction and preparedness. By prioritizing investments which maximize the impact of technologies, the Bank can play a pivotal role in promoting the adoption and dissemination of innovative technologies together with enhancing their affordability.

3. Implementation Approach

13. The range of possible investments in the water sector is as large as the needs of the Bank’s Members and their diverse social, economic and geographical characteristics. As a result, the strategy recognizes that it is not practical to limit itself to financing only specific sub-sectors. Instead, recognizing that the sector is characterized by its institutional and policy complexity, the Bank will set criteria and boundaries related to the degree of institutional adequacy of a project and its implementation readiness. This implies that the project’s supporting institutional environment, including the appropriate regulatory, policy, tariff and management structures, must be deemed sufficiently developed enabling it to generate the intended positive sustainable outcomes. Alternatively, there should be a clear path to achieving these allowing the Bank to eventually finance or co-finance. This approach implies that early investments will be limited to projects with a high level of implementation readiness and low requirement for institutional reform of strengthening requirements. This will evolve over time with the Bank’s development as demonstrated in Figure 2.

Figure 2: Evolution of AIIB’s Financing Approach

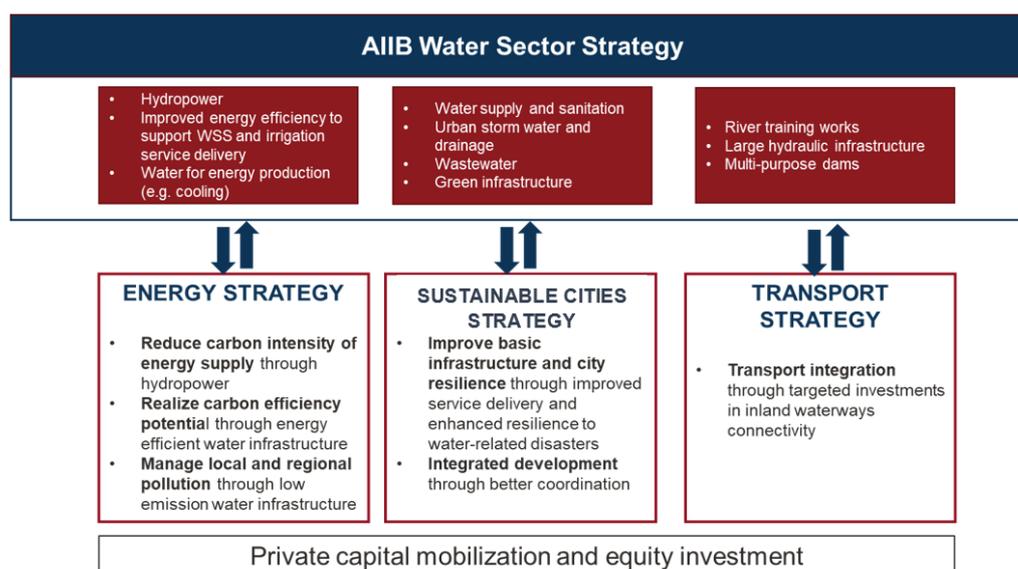


14. *In the short-term*, for standalone financing, AIIB will seek projects that are significantly investment-ready and where institutional and implementation capacity has been well demonstrated. An example of early investments may include the upgrade and expansion of existing infrastructure where a clear technical and/or demand is demonstrated and where existing assets and institutions have demonstrated successful operation. For more complex and institutionally challenging projects, co-financing with other MDBs and

development financiers will be prioritized. Most projects in this phase, as seen by current demand from the Bank's members, are expected to be in water supply, treatment and sanitation.

15. Over time, AIIB will develop strategic partnerships with key development and knowledge players influencing policy dialogue and reform. The objective is to position the Bank further upstream in the project conceptualization process and allow it to gradually play a more active role in supporting the policy dialogue and investment process. It is not intended that the Bank undertake any significant degree of institutional reform or strengthening in its own right but that its positioning allows it to encourage positive reform and be recognized as an active water sector financier.
16. **Financing the application of innovative technologies** across the water sector will be prioritized. This will include coordination with the other sector strategies, in particular Digital Infrastructure, to identify relevant technologies, Member's needs and relevant partners. The objective will be to support the integration of relevant performance enhancing technologies in the sector and create structures to mobilize financing for technology adoption. The long-term vision is to be recognized as a major catalyst for improving the performance of the water sector through the application of innovative technologies.
17. **Private capital mobilization** is a cross-cutting principle of the strategy and an important source to bridge the financing gap. While recognizing that the private sector has had limited impact so far, AIIB will be at the forefront of both increasing the general availability of private funds to the sector and increasing the direct participation and investment of the private sector at the asset level. It will seek to:
 - Increase investment attractiveness as a result of the Bank's involvement through, for example, risk reduction measures, quality project preparation and impacts on institutional strengthening;
 - develop structures to address the misalignment of water sector financing characteristics with the objectives of large institutional investors (for example scale, investment size, risk);
 - promote the adoption of new technologies by, for example, reducing the cost of adoption and commercialization, i.e. through equity investment into technology funds.
18. **Relation with existing AIIB sector strategies and policies.** Water cannot be seen in isolation and therefore the strategy places importance, both internally and externally, on the need for close coordination with other sectors and financing initiatives particularly energy, sustainable cities and transport. This aim is to ensure that the objectives of the water strategy are fully addressed across the Bank's operations.

Figure 3: Interaction Between Water Sector Strategy and Other AIIB Strategies



19. **Maximizing environmental and social outcomes.** All types of water infrastructure investments have environmental and social impacts to varying degrees, which need to be assessed, mitigated and monitored through dedicated instruments. Conversely if well designed and implemented, water investments will also have positive outcomes that directly contribute to SDG goals. The Bank's corporate results framework and Environmental and Social Framework provide a robust structure to ensure the environmental and social soundness and outcomes of Bank operations.¹⁴ In particular, the Bank will consider the following:

- **Social:** will focus on social and human health risks and impacts resulting from the development and operation of water infrastructure investments, including the quality and quantity of available water, equality of access to water and its affordability for users. Attention will be paid to women and vulnerable groups and on potential project specific issues such as involuntary resettlement, land acquisition and changes in availability of aquatic resources to communities.
- **Environmental:** will focus on the risks and impacts on quality and quantity of surface and groundwater resources and aquatic ecosystems, including biodiversity and natural habitats and changes in land use resulting from development of water infrastructure. Risks to and impacts on coastal and marine resources will be assessed where relevant.
- **Climate change:** will assess how resilience measures can be integrated to reduce vulnerability and support adaptation to climate change. Where applicable water projects may also reduce emissions (e.g. energy efficiency). This will include assessment of project impact on climate change and the implications of climate change for the investments.

20. The AIIB Project Prioritization and Quality Framework (PPQ) provides guidance on criteria for project selection and prioritization.¹⁵ While all PPQ criteria apply, lessons learnt to-

¹⁴ Asian Infrastructure Investment Bank. 2016. Environmental and Social Framework. AIIB: Beijing. Available from: https://www.aiib.org/en/policies-strategies/_download/environment-framework/20160226043633542.pdf

¹⁵ Asian Infrastructure Investment Bank. 2018. Project prioritization and quality (PPQ) framework. How to guide. AIIB: Beijing.

date and experience from other MDBs suggests that specific attention needs to be paid to the institutional readiness of clients.

21. **Strategic partnerships.** *In the short-term*, the AIIB will remain demand-driven and work closely with its existing partners to deliver projects where stand-alone financing is not possible due to the level of institutional complexity. This is crucial in the absence of country-based staff and initial capacity constraints. Partnerships can range from ad-hoc arrangements to more formalized and planned engagements. AIIB will make its best effort to ensure that the timescales and priorities between AIIB and its partners are clearly defined and aligned to prevent delays, short-cuts or cancelations in the investment cycle. Partnerships will also be used to both promote AIIB's water strategy and assist in developing a pipeline of opportunities.
22. Over time, AIIB will build strategic relationships with knowledge partners allowing it to move upstream and facilitate early project identification by engaging in policy and institutional reform dialogue. Also, partnerships with key experts and business leaders in technology will be built and maintained to keep pace with this dynamic landscape. The degree of involvement will depend on the evolution of the Bank's corporate strategy and internal capacity. The objective is to position the Bank at an earlier stage of project conceptualization where its financing ability is both recognized and integrated into project design. Numerous MDBs and bilaterals have existing knowledge initiatives and undertake applied research to support country and global level policy dialogue on water.¹⁶ AIIB will leverage this research, advocacy and these professional organizations working on diverse aspects of the water sector. Finally, building partnerships with the private sector, commercial banks, and institutional investors will help AIIB to better help the industry to overcome barriers to its increased involvement in the water sector.
23. **Staff capacity and development.** To implement this strategy, AIIB will develop and maintain a well-trained, experienced core group of water professionals (across a variety of water subsectors) who can prepare and supervise projects and in the long run maintain a high-level policy dialogue with clients and counterparts. Opportunities will be provided to staff to develop a multi-disciplinary vision necessary to work effectively across sectors and to ensure well-integrated investment choices for clients. The precise number, experience level and skill mix will depend on AIIB's portfolio and client demand.¹⁷ In order to address the financing of technology, close coordination with staff working on Digital Infrastructure and Sustainable Cities will be necessary for the identification of appropriate technologies and partners.
24. Staff training and continued learning is essential to better serve clients. AIIB will review its water projects regularly and share the findings across its relevant staff to help the preparation and design of future operations. Training opportunities will also be provided (either external or internal) to build AIIB staff knowledge to achieve the long run objective of gradually taking on more complex (in terms of technical, financial and institutional aspects) investment operations in line with the strategic priorities to be agreed in the upcoming corporate strategy.

¹⁶ Potential partners may include, the Global Water Partnership (GWP), International Water Management Institute (IWMI), IHE Delft Institute for Water Education, Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), Organization for Economic Cooperation and Development (OECD), International Water Association (IWA) etc.

¹⁷ World Bank water staff is 290 (worldwide) managing a portfolio of almost USD 30 billion; ADB water staff is 161 managing a portfolio of USD 15 billion; EIB water staff is 26 managing a portfolio of almost USD 30 billion. Data was obtained from personal communication / interviews with key experts during the AIIB Water Workshop in April 2019.

4. Result Monitoring Framework

25. AIIB's investments will be monitored at the portfolio and project level based on agreed principles. Portfolio level outcome indicators, see table 1, have been selected due to their relevance to the Bank's objectives, broad applicability across the water sector and ease of aggregation from the project to portfolio level. This allows the Bank to introduce a degree of commonality when monitoring and assessing water investments at the portfolio level.

Table 1: Portfolio-level monitoring indicators for Water Strategy

Strategic Objective	Portfolio level outcome indicators	Investment amount in US\$ million
Water Services** <i>Improve access to water supply, sanitation, and irrigation and drainage services</i>	Households with new or improved access to safely managed drinking water supply services* (number)	Amount invested in water supply
	Households with new or improved access to safely managed sanitation services° (number)	Amount invested in sanitation
	Water users provided with new or improved irrigation and drainage infrastructure (number)	Amount invested in irrigation and drainage
Resource Management <i>Protect freshwater ecosystem services</i>	Wastewater treatment and reuse capacity added or improved (cubic meters per day)	Amount invested in wastewater
Resilience <i>Reduce losses caused by floods</i>	Beneficiaries from flood protection (number)	Amount invested in flood management
	Land protected through flood control infrastructure (hectares)	
Private Financing	* Cross reference to relevant indicators in the Strategy on Mobilizing Private Capital	Amount of private financing mobilized on water projects

* In order to meet the criteria for a safely managed drinking water service, people must use an improved source meeting three criteria: (1) it should be accessible on premises, (2) water should be available when needed, and (3) the water supplied should be free from contamination.

°People should use improved sanitation facilities which are not shared with other households, and the excreta produced should either be: (1) treated and disposed in situ, (2) stored temporarily and then emptied and transported to treatment off-site, or (3) transported through a sewer with wastewater and then treated off-site.

** Note that this intersects with the Cities strategy results indicators

26. At the project level, outcomes of the AIIB's financing in the water sector will be monitored and recorded with applicable results indicators. Outcome/output indicators should be clear, relevant, measurable and aligned with the portfolio-level indicators. Where relevant, the bank may also adopt the result indicators from other related sector strategies, such as energy, transport and sustainable cities, for monitoring its water projects. Examples of project-level indicators in different water subsectors are presented in Annex A.
27. Lastly, as AIIB gains more operational experience and builds deeper institutional capacity, the bank will periodically review and refine the Water Strategy as appropriate. The timing of such reviews will be agreed with the Bank's Board of Directors in the context of the Bank's Annual Business Plan.

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Annex A: Examples of Project-Level Outcome Indicators

Water projects	Examples (unit)
Water supply	Households provided with access to safely managed water supply (number) ¹⁸
	Constructed/rehabilitated community water points (number)
	Constructed/rehabilitated piped household water connections (number)
	Increased drinking water treatment capacity (volume/time)
	Increased drinking water supply capacity increased (volume/time)
	Reduction of non-revenue water (percentage)
	Increased duration of water supply (duration)
	Water utilities supported by the project (number)
	Other water service providers supported by the project (number)
	Service providers in compliance with the defined operational service standard (number)
	Private financing mobilized for construction/rehabilitation water supply infrastructures (USD)
Sanitation	Households provided with access to safely managed sanitation service (number)
	Constructed/rehabilitated household sewer connections (number)
	Constructed/rehabilitated latrines (number)
	Number of communities/villages obtaining/sustaining 'open defecation free' certification (number)
	Private financing mobilized for construction/rehabilitation of sanitation infrastructures (USD)
Wastewater management	Wastewater treatment capacity added or improved (volume/time)
	Volume of water treated meeting surface water quality standard (volume/time)
	Volume of BOD pollution loads removed by the treatment plant (volume or mass/year)
	Service providers in compliance with the defined operational service standard (number)
	Private financing mobilized for construction/rehabilitation/improvement of wastewater management infrastructures (USD)
Water resource management	Water resources (e.g. lake, rivers) restoration (number)
Irrigation and drainage	Water users provided with new/rehabilitated/modernized irrigation and drainage infrastructure (number)
	Land area provided with new/rehabilitated/modernized irrigation and drainage infrastructure (area)
	Improved irrigation efficiency (percentage)
	Increase in crop yield (percentage)
	Farmers benefiting from improved irrigation technology and management (number)
Inclusion (gender & vulnerable groups)	Incorporation of consultation and design for improved access for women and vulnerable groups
Disaster management	Beneficiaries of protection measures/infrastructures from water-related disasters, i.e. flood, drought, storm, etc. (number)
	Land protected from water-related disasters (area)
	Reduction of average flood depth at the monitoring points (depth)
	Hydro-meteorological stations and other hydro-informatics systems operated/improved (number)
	Early warning system installed / contingency plan adopted (number)

¹⁸ Indicators that can be disaggregated by gender. Sources of data that can be used to measure gender outcomes in a project include censuses, household surveys, baselines surveys, transport user surveys, transport satisfaction surveys, and perception surveys. Qualitative data can also be useful, such as that from focus group discussions.