



WATER TRACKER
• FOR NATIONAL CLIMATE PLANNING •

COUNTRY REPORT

Application of the Water Tracker
for National Climate Planning



EGYPT



Ministry of Infrastructure
and Water Management

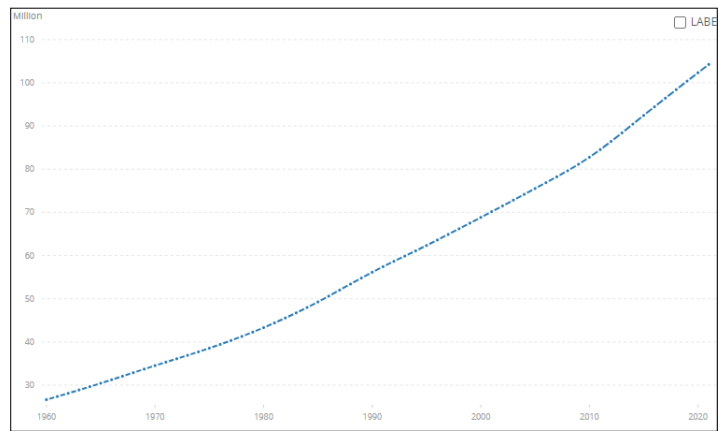


I. Country Context

The Arab Republic of Egypt is located in the north-eastern corner of Africa. The country borders the Mediterranean Sea to the north, Sudan to the south, the Red Sea, Palestine to the east, and Libya to the west. The country has a coastline of 3,500 km along the Mediterranean and the Red Sea. Egypt's coastal zones extend for over 3,500 km along the Mediterranean and the Red Sea. The Mediterranean shoreline is, however, most vulnerable to sea-level rise due to its relatively low elevation compared to the land around it¹.

Egypt's population growth is the main driver to water demand. From 4 million in 1805, Egypt's population reached 21.5 million in 1952, doubling to 43.3 million by 1980, another doubling to 86.4 million by 2012 and now stands at 104 million². More than 95% of the population is clustered within 20km along the banks of Nile Valley and delta on 3% of the land. 40% of the population is urban³.

The Nile River is Egypt's primary source of fresh water, supplying 55.5 billion cubic meters (BCM) annually of 97% or total. groundwater aquifers 2.1 BCM, sporadic and low rainfall 1.3 BCM, and desalination (0.35 BCM) provide negligible quantities to bring the total annual available water resources to 59,25 BCM. Current water needs are almost double- projected at 114 BCM. The reuse of agricultural drainage and treated wastewater equal to 21 BCM help to bridge the shortfall⁴.



Egypt population 1960-2020

Egypt is extremely vulnerable to the effects of climate change due to its large population and densely populated areas, particularly along the Nile Delta, which is threatened by sea-level rise. The vulnerable areas include agriculture, coastal zones, water resources, human settlements, and health⁵. Egypt's current dependence on the Nile River's water makes the country vulnerable to rising temperatures, reduced rainfall for the upper Nile sources, and the eastern Mediterranean coastal zone⁶. The World Bank projects⁷ the following temperature and rainfall changes for Egypt:

- Changes in annual mean temperature are projected from 1.8°C to 5.2°C by the 2080s. Maximum temperatures are expected to increase by 2.1°C to 5.7°C by the 2080s, with minimum temperatures increasing by 1.5°C to 4.6°C during the same period.
- Heat waves are anticipated to increase significantly in their severity, frequency, and duration, with them expected to last an additional 9 days to as much as 77 days. The cold spells are expected to decrease.
- The reduction in precipitation, observed over the past 30 years, is expected to continue by the end of the century, with projections indicating a trend of even longer dry spells and the possibility of dry spells increasing by 75 days by the 2080s.

¹ World Bank, Climate Change Overview, <https://climateknowledgeportal.worldbank.org/country/egypt>

² <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=EG>

³ https://www.indexmundi.com/egypt/population_distribution.html

⁴ Egypt's First Updated Nationally Determined Contributions, June 2022

⁵ IFRC (2022). Egypt Country Plan, https://www.ifrc.org/sites/default/files/2022-03/Egypt_Country_Plan_2022.pdf

⁶ Climate Risk Profile: Egypt (2021): The World Bank Group

⁷ https://climateknowledgeportal.worldbank.org/sites/default/files/2021-04/15723-WB_Egypt%20Country%20Profile-WEB-2_0.pdf

- The annual mean precipitation is expected to decrease, while the intensity of flash floods is expected to increase by the 2080s⁸.
- Under a high emissions scenario, Representative Concentration Pathways (RCP) 8.5, it is projected that by the 2030s, an additional 1.1 million people are at risk of flash floods due to changing precipitation patterns and extreme rainfall events.



Flash flood protection

Egypt is already severely impacted by and susceptible to droughts, which are expected to be more frequent and pronounced particularly in the sources outside its borders. The country is expected to become hotter and drier under a projected future climate. The Nile Delta is considered one of the three extreme vulnerable hotspots mega-deltas where sea level rise may reach about 1.0 m by 2100 which would sink several coastal areas in the heavily populated Nile Delta, which provides 60% of Egypt's food production. Studies anticipate that due to climate change impacts The Delta is expected to lose up to a minimum of 30% of its food production by 2030, with additional loss of Egypt's limited high potential land, multi-sector infrastructure, and built-up areas. Key sectors impacted include water resources, agriculture, fisheries, health, housing, biodiversity, telecommunications, energy, and coastal zones.

Disaster risks arising from increased temperatures are expected to exacerbate tensions for water resources between agricultural and livestock needs and human population needs, especially during

⁸ Climate Risk Profile: Egypt (2021): The World Bank Group, https://climateknowledgeportal.worldbank.org/sites/default/files/2021-04/15723-WB_Egypt%20Country%20Profile-WEB-2_0.pdf

periods of high aridity and drought. The quality of available water from surface water and groundwater is also expected to be affected. Water scarcity and changing rainfall patterns are also expected to play a significant role in the agricultural sector. With the projected rise of sea levels, the population and infrastructure along the Mediterranean coast remain at risk of floods and saltwater intrusion. Decreased water available for agriculture, which consumes 80% of Egypt's water, will have a negative impact on the livelihoods of more than 25% of the labour force, compounding the economic downturn created by the Covid-19 pandemic and the ongoing global crises that have pushed up the price of food and curtailed tourism, manufacturing and supply chains critical for Egypt's economic and social development⁹.

II. National Climate Plans

Egypt has progressively developed national plans for climate change adaptation and mitigation. In the wake of renewed efforts for climate change, Egypt has directed its mitigation and adaptation efforts to develop a general framework for the national strategy for climate change in addition to incorporating the strategy into the sectoral labour training plans of other ministries. Egypt's main mitigation policies are set out in its 2030 low-emissions development strategy, which was adopted in early 2019 and has recently been updated. The country has also developed its long-term climate change strategy until 2050¹⁰.

The Government of Egypt prepared its Intended Nationally Determined Contribution (INDC) with the support of the INDC Project and submitted it in November 2015. The INDC was converted into the country's first Nationally Determined Contribution (NDC) and submitted in June 2017. Egypt has now submitted its First Updated Nationally Determined Contributions, dated June 2022. This NDC takes in account and builds on key policies, plans and strategies critical for water resources planning and development including Egypt's Vision 2030, the emerging Long Term Low Emission Development Strategy 2050 (LT-LEDS), the National Climate Change Strategy 2050 (NCCS), National Strategy for Disaster Risk Reduction 2030, the National Strategy for Adaptation to Climate Change, the Integrated Sustainable Energy Strategy 2035, the National Energy Efficiency Action Plan II (2018 – 2022), National Water Resources Plan (2017- 2037), Integrated Solid Waste Management Strategy, and the Sustainable Agricultural Development Strategy towards 2030.

National frameworks and plans on climate change that inform the development of this report¹¹ are outlined in Table 1.

Table 1: Egypt National Climate Change Planning Framework

National Climate Change Planning Document	Year
Egypt's First Updated Nationally Determined Contributions	2022
National Climate Change Strategy (NCCS)	2021
First Nationally Determined Contribution	2017
Third National Communication	2016
Climate Change Adaptation Strategy	2013

⁹ Egypt's First Updated Nationally Determined Contributions, June 2022

¹⁰ https://sustainabledevelopment.un.org/content/documents/279512021_VNR_Report_Egypt.pdf, Egypt's 2021

Voluntary National Review Report

¹¹ Climate Risk Profile: Egypt (2021): The World Bank Group

National Strategy for Mainstreaming Gender	2011
National Strategy for Adaption to Climate Change and Disaster Risk Reduction	2011
Egypt National Environmental, Economic and Development Study for Climate Change	2010
Egyptian National Action Plan to Combat Desertification	2005



Irrigation development

III. Applying the Water Tracker

The Water Tracker has been applied to the National Water Resource Plan (NWRP), the Updated Nationally Determined Contribution (NDC), the National Climate Change Strategy, and the Climate Change Adaptation Strategy. These form the framework climate change and water planning documents and provide the most recent and appropriate platform for the Water Tracker application to the broader national climate change planning framework and the iterative improvement of the Water Tracker itself. A summary of the initial results is presented in [Section IV](#) below.

The application of the Water Tracker in Egypt is a first. It is anticipated that the emerging trends and practices highlighted will go a long way in informing and updating the water and climate change policy and legislative framework and the renewal of development plans and strategies.



Lining canals to reduce water losses

IV. Water Tracker Results

The findings of the Water Tracker for National Climate Planning for Egypt evidence interesting outcomes, with some clear strengths, challenges as well as opportunities to improve integrated climate change planning.

Section 1: Water in National Climate Plans

Section 1 “Water in national climate plans,” results are summarized in Table 2 below. As a start, the NCCS 2021, which borrows from the First NDC and the NWRP, provides anchorage to areas of concern in the Water Tracker across the three sections. Generally, there is an incremental improvement in Egypt’s climate change planning process. The process is however gradual in spite of the late submission of the updated NDC in the COP26 in 2021. Alignment of the water and climate change development plans with SDG6 is evident but only to some extent, especially in the case of the NWRP.

The existing plans and frameworks are cognisant of the changes to the hydrological cycle. The NCCS provides projections and impacts on water supplies and makes particular reference to the Nile River water flow. The strategy also projects the water demands from different sectors and further describes expected climate change impacts on the coastal zones. The strategy goes on to describe the implications of climate change effects on the various sectors and, more so, the agriculture sector, the third-largest economic sector, accounting for 11.5% of the country’s Gross Domestic Product (GDP). The NWRP, on the other end, mentions two specific water adaptive measures, including *Rationalizing Water Use* and *Enhancing the Availability of Freshwater Resources*.

Of keen interest is that the NDC, NCCS and the NWRP highlight key vulnerabilities of the Nile River and other freshwater sources due to climate change. In addition, Egypt’s National Strategy for Adaptation to

Climate Change and Disaster Risk Reduction of 2011 also provided key evidence on existing risks to freshwater sources owing to climate change effects. Mitigation measures within the WSS context are also provided but with a greater inclination towards the energy sector vis-à-vis emissions reduction. With respect to climate adaptation, the NCCS draws attention to several infrastructural projects as well as technical and soft interventions, most of them being either no-regret or low-regret.

Climate adaptation strategies being adopted in Egypt, including increasing irrigation efficiency and development

Smart irrigation example



Indigenous, low-regret solutions for coastal protection in Kafr El Sheikh province



The proliferation of knowledge of water-related climate change impacts is well understood, as reflected in the NCCS and the NWRP. The development frameworks draw out the susceptibility of the various risks climate change impacts pose. Key risks identified include drought and water scarcity as a high risk, increased floods, high water consumption beyond existing capacity, and sea-level rise. However, prioritizing water-related risks and opportunities remains debatable and varies from sector to sector. Similarly, while there has been some form of stakeholder engagement in identifying the root cause of water-related climate risks, including association with socioeconomic parameters, the question of prioritization remains debatable.

Section 2: Water in National Planning and Governance

Section 2, “Water in national planning and governance,” results are summarized in Table 3 below. The formalization of climate risk assessment is still at a nascent stage, with a greater focus on assessing risks on the Nile River. With regard to this, there is some level of disconnect between the General Circulation Models (GCMs) about whether the Blue Nile, which contributes more than 75% of the Nile flows, is getting wetter or drier. Hydrological variation is considered as part of this risk assessment. Again, with reference to the Nile, there is a potential impact on the renewable water resources coming from the river and clear adaptive and mitigation plans for drought periods and floods.

The National Council for Climate Change (NCCC) provides oversight and is the main decision-making body for climate policy. The NCCC operates under the office of the Prime Minister, and its membership cuts across relevant ministries led by the Ministry of Environment through the Egyptian Environmental Affairs Agency (EEAA). The council follows up the implementation of the NCCS, including adaptation to climate change and alignment with the relevant policy and legislative framework. This includes making recommendations to Parliament for the update of laws and legislation.

The Nile River Inflow Forecasting Committee coordinates adaptive planning and management of water resources. The committee is mandated to monitor water flows in the Nile River and constitutes representatives from various disciplines, including engineers, economists, ecologists, and politicians.

Adaptive management takes the form of a decentralization policy where water users are encouraged to find solutions for water management.

The congruence of the policy framework and development plans and strategies is still in development. This is because the existing data gaps imply that climate change predictions are still uncertain and, as such, do not provide sufficient data to inform policy decision-making. At the same time, while capacity development of national and sectoral planners, multi-stakeholder planning processes, and establishment of mechanisms to promote national dialogue among relevant sectors are essential, much remains to be done. A well-coordinated multi-sector capacity-building approach that engages various stakeholders, including the most at risk of the effects of climate change, is required.

Section 3: Water and Climate Connections in Specific Sectors

Section 3, “Water and climate connections in specific sectors,” results are summarized in Table 4 below. The NWRP provides elaborate plans and strategies for addressing water shortages in the country in the face of climate-related risks. Allocation of resources in the NCCS is subject to water use at the Municipal level, industrial consumption, and agricultural purposes. The Egyptian Drought Management Plan (EDMP) informs decision-making on water use when the country faces drought or scarcity.

The NWRP addresses most of the issues in the water resources and water supply and sanitation sectors, including referring to the importance of wetland ecosystems in relation to water security and climate adaptation. However, the aspects of landscape and ecosystem restoration, improved management, ecosystem-based adaptation, and biodiversity conservation are not adequately addressed.

The government applies a multi-sectoral approach in national climate change planning, including the inclusion of all relevant ministries in the plan. In particular, the Ministry of Water Resources and Irrigation (MWRI) bears the mandate of allocating water to various sectors aligned to Egypt’s water policy framework.

An assessment of the NCCS and the NWRP demonstrates interaction of climate change key sectors, including water, agriculture, industry, energy, sanitation, and the health sector. The recommendation for the water tracker is to establish a domestic framework and climate change focal points in all relevant ministries to better ensure a more comprehensive inventory of data collection and tracking of climate resilience actions.¹²

Section 4: Links to Climate Financing and Project Implementation

Section 4, “Links to climate financing and project implementation,” results are summarized in Table 5 below. The NWRP and investment plan demarcate action areas and associated financing plans for climate change mitigation and adaptation. Linkages with the NCCS would be of particular importance to ensure synchrony of climate change efforts and financing streams. Mechanisms for tracking financial allocations and expenditures on climate adaptation and mitigation are not adequately elaborated. Moreover, the country continues to face the challenge of inadequate financial resources for implementing its climate change mitigation and adaptation plans and strategies.

Unlike the NWRP, there is no clarity on how resources will be mobilized for implementation of the NCCS, including how resources will be shared in terms of climate change mitigation and adaptation. Allocation of resources to specific measures also lacks specificity. In addition, it is unclear how much of this funding is expected to come from external sources and how much of the strategy will be funded domestically. Both the strategy and the plan mention the ambition of creating an enabling environment for local and foreign investment. However, it is not explicit how such an enabling environment will be created and

¹² Egypt CAT Climate Governance Series, 2022, https://climateactiontracker.org/documents/1027/CAT_2022_03_ClimateGovernance_Egypt.pdf

whether this enabling environment is expected to contribute to funding the implementation of the policy development framework.

Summary

It should be noted that the Water Tracker is designed to assess an entire planning and policy framework, including the complementary roles they play in driving development in the water sector as well as in climate change mitigation and adaptation. Egypt's first water tracker was therefore reliant on the most recent and available policy and planning framework. Each section provides an assessment of existing unique strengths and opportunities, gaps, and areas of improvement. The areas of improvement have been highlighted in [Section V](#) below as the Water Tracker is developed further.

V. Next Steps

Applying the tracker to Egypt's water and climate sector reveals how deeply adaptation of different social, economic and environmental sectors to climate change depend on innovative water resources management, and careful stewardship of the quality and quantity of limited water. Though still improving in technical efficiency through canal lining and improved management including distribution of water, Egypt's irrigation sector already achieves very high levels of water reuse, which is now enhanced by wastewater treatment, desalination, and channeling of sporadic stormwater to productive use.

Expanding this policy to require more efficient water use in other sectors, as well as replicating the success of community-managed initiatives for the protection and nature-based restoration of Egypt's invaluable delta region against sea level rise and wind erosion will be critical to Egypt's ability to withstand adverse impacts of climate change and offer opportunity to reverse decades of environmental degradation. The role of water in these processes is unequalled and further portrayed in Egypt's ambitious low-carbon energy efficiency commitments.

Annex 1: Water Tracker Results

Table 2: Section 1 "Water in national climate plans" Summary Matrix

Question		NWRP	NCCS	CCS
1. Water as a risk				
1a.	Are changes to the hydrological cycle mentioned in terms of climate impacts? (flooding, drought, changes to extreme weather events, etc.). Note that this includes both negative (i.e., increased drought) and positive (i.e. changes in agricultural potential due to increased precipitation) climate impacts.	Yes	Yes	N/A
1b.	Are water-related climate impacts well understood?	Yes	Yes	N/A
1c.	Are water-related risks or opportunities prioritized according to set criteria such as levels of exposure, vulnerability, and hazard?	Yes	No	N/A
1d.	Is there identification and prioritization of root causes to be addressed for the range of water risks, connecting hydrological and ecological systems with societal and economic systems?	Yes	No	N/A
2. Water as a sector				
2a.	Is a section on the Water Sector explicitly included in the document? (i.e. as an essential common good, water, and sanitation, water as an input to economic development, or goal towards water security)	Yes	Yes	N/A
2b.	Are specific adaptation activities mentioned in the Water Sector?	Yes	Yes	N/A
2c.	Are specific mitigation activities mentioned in the Water and Sanitation Sector? (i.e. reduction of GHG associated with water treatment and delivery)	Yes	Yes	N/A
2d.	Is the water sector explicitly linked to the rest of the document's areas/components/sectors?	Yes	Yes	N/A
2e.	Are there specific connections to SDG 6? If so, are there mitigation opportunities and or adaptation needs related to the specific targets from SDG6 that are included?	Yes	Yes	N/A
2f.	Are the adaptation needs of water and sanitation infrastructure and services identified to ensure resilient climate provision of those basic social services?	Yes	Yes	N/A
3. Water as an opportunity				
3a.	Is water mentioned as an opportunity? (i.e., as a connecting point between and across sectors, or acknowledging the need for awareness of climate-related water consumption and management)	Yes	Yes	N/A
3b.	Do climate mitigation commitments explicitly state water requirements? If so, which ones?	Yes	Yes	N/A
3c.	Do climate mitigation commitments build on the opportunities derived from water and sanitation services? (e.g. use of renewable energy, water efficiency, energy recovery from waste)	No	Yes	N/A
3d.	Is there consideration of water required to meet adaptation goals?	Yes	Yes	N/A
3e.	Is there flexibility in mitigation targets set out by national climate plans to respond to changes in climate projections and lessons learned from experiences on the ground?	Yes	Yes	N/A
3f.	Is there flexibility in adaptation actions prescribed by national climate plans to respond to changes in climate projections and lessons learned from experiences on the ground?	No	No	N/A

3g.	Are there considerations for interactions between mitigation and adaptation actions included in the plan with regard to water?	Yes	Yes	N/A
-----	--	-----	-----	-----

Table 3: Section 2 “Water in national planning and governance” Summary Matrix

	Question	NWRP	NCCS	CCS
	1. Climate risks and future uncertainty			
1.	Does the national climate plan consider any climate change projections outside the results of the UNFCCC national communications?	Yes	No	Yes
1b.	Climate change: Are shifts in inter-annual variation for precipitation considered in the national climate plan?	Yes	No	Yes
1c.	Climate change: Are shifts in the frequency and intensity of extreme events considered in the national climate plan?	Yes	Yes	Yes
2.	Is a country-level climate risk assessment process that considers multiple GCMs and scenarios, and are those results integrated into the national climate planning process?	Yes	Yes	Yes
3.	Are there adequately flexible mechanisms for revising existing laws, regulations, policies, and institutional structures in the face of new climate evidence?	Yes	N/A	Yes
4.	Are adaptive planning and management approaches considered key planning characteristics to manage the uncertainty of future water management challenges instead of a traditional ‘predict and design’ approach?	Yes	Yes	Yes
	2. Water governance			
1.	Do existing institutional frameworks facilitate the integration of national climate planning objectives into the sector and sub-national policies and programs?	Yes	Yes	Yes
2.	Are institutional mechanisms established and functional for the interface between bottom-up and top-down processes for adaptation planning?	Yes	Yes	Yes
3.	Are national climate plans aligned with the country's integrated water resource management, river-basin, or other integrated resource plans?	Yes	Yes	Yes
4.	Are national climate plans aligned with disaster risk management plans in the country?	Yes	Yes	Yes
5.	Are there formal mechanisms for non-national institutions (civil society, cities, provinces and states, RBOs, businesses, etc.) to align with national climate plan priorities?	Yes	Yes	Yes
6.	Do the national climate plans identify applicable international obligations (e.g., from regional or global treaties and agreements) that are relevant to the water-related measures within the national plans?	No	Yes	No
7.	Do the national climate plans identify any non-binding regional or international principles or guidance that the country observes which are relevant to the water-related measures in the plans?	No	No	N/A
8.	Are capacity-building initiatives included in national climate plans to prioritize building local institutional capabilities and governance structures supporting local leadership?	No	No	Yes
9.	Are there mechanisms in place to support adjustment of adaptation approaches reflecting real-time learning during implementation?	N/A	N/A	N/A
10.	Are local users and beneficiaries of ecosystem services recognized as critical stakeholders in ecosystem resilience and associated planning and management?	Yes	Yes	Yes

11.	Does the Ministry of Finance (or equivalent government body) explicitly approve allocation and governance arrangements in the national climate planning process?	Yes	Yes	Yes
3. Sustainable Development				
1.	Are those most impacted by climate change involved in developing national climate plans and prioritizing, designing, implementing, and evaluating adaptation initiatives?	Yes	Yes	N/A
2.	Do national climate plans address structural inequities women and other vulnerable populations face?	Yes	Yes	N/A
3.	Are representatives from vulnerable populations, including women, integrated into decision-making platforms for national climate plans?	No	Yes	N/A
4.	Are successful community-based approaches available and widely shared to project developers that can be customized for the implementation of water-climate resilience projects?	N/A	N/A	N/A
5.	Are ecosystems considered a “stakeholder” in climate planning processes?	N/A	N/A	N/A
6.	Are landscape and ecosystem restoration and improved management considered in the national climate plan as a strategy to safeguard and enhance water supplies and climate resilience?	Yes	No	N/A
7.	Are ecosystem-based adaptation and biodiversity conservation embedded as cross-cutting approaches in national climate policies and built-in relevant targets?	Yes	No	N/A

Table 4: Section 3 “Water and climate connections in specific sectors” Summary Matrix

Question		NWRP	NCCS	CCS
1. Guiding questions				
1.	What sectors are included in the national climate plan, and how were these determined?	All the Egyptian Ministries	All the Egyptian Ministries	N/A
2.	Is there a mechanism of sectoral prioritization or allocation of water resources in the country? Is that mechanism enforceable?	Yes	No	N/A
3.	Do the plans identify how any water rights and allocation arrangements will respond to changes in water availability or seasonal water availability becoming less predictable due to climate change?	Yes	No	N/A
4.	Are water allocations and allocation mechanisms evaluated against multiple climate futures or scenarios, and are the allocations updated in response to these future projections?	Yes	No	N/A
5.	Are there operational rules to guide decision-making during water shortages? Are “exceptional” circumstances, such as extended droughts, defined such that allocation decisions can be altered and enforced during these circumstances?	Yes	Yes	N/A
2. Questions applied to all sectors				
1.	Are there existing mechanisms that identify and track water use in this sector?	N/A	N/A	N/A
2.	Are there clear operational rules and policies for allocating water supply towards this sector in your country? Are those rules and policies enforceable?	Yes	N/A	N/A

	If this sector is included in mitigation contributions (GHG emissions reductions), do those targets consider water use requirements? Examples:	N/A	N/A	N/A
	<ul style="list-style-type: none"> Energy: Do planned changes to power generation infrastructure consider water use requirements? (e.g., from thermal to hydropower generation of biofuels production) 	N/A	N/A	N/A
	<ul style="list-style-type: none"> Agriculture, Forestry, and Other Land use: Do land-use changes, including reforestation and agricultural areas, consider water requirements, both short and long-term? 	N/A	N/A	N/A
3.	<ul style="list-style-type: none"> Waste: Are water requirements for waste-to-energy schemes considered? 	N/A	N/A	N/A
4.	Do mitigation contributions consider impacts on water resources, ecosystems, and dependent sectors and stakeholders beyond the project scale? (e.g. upstream and downstream in watersheds?)	N/A	N/A	N/A
5.	Are climate or water institutions involved as lead or support agencies in developing adaptation and mitigation measures in this sector?	Yes	Yes	Yes
6.	Do adaptation plans for this sector consider changes to where and when water is available for use regarding climate change?	N/A	N/A	Yes
7.	Do adaptation actions consider impacts on water resources, ecosystems, and dependent sectors and stakeholders beyond the project scale? (e.g. upstream and downstream impacts in watersheds?)	N/A	N/A	Yes
8.	Do climate risk assessments track potential water commitments embedded within proposed investments? Are water-climate stress tests performed on planned assets?	N/A	N/A	N/A
9.	Are there goals to increase water-use efficiency, including water reuse in this sector? And if so, are complimentary policy or regulatory measures in place to ensure that water conserved through efficiency gains is not lost to increases in demand?	Yes	N/A	Yes
10.	Are contingencies in place to handle impacts of extreme events regarding water supply and treatment within the sector?	N/A	N/A	Yes
11.	Is this sector actively involved in national water resources dialogues and planning?	Yes	N/A	N/A
12.	Are nature-based solutions for adaptation and mitigation targets included in sector plans?	N/A	N/A	N/A
13.	Do nature-based solutions applicable to this sector fit into the prevailing legislation and regulations (including obligatory approval procedures, such as permits and licenses)?	N/A	N/A	N/A
3. Sector-specific questions				
Energy				
1.	If hydropower is included in the energy generation mix, is future uncertainty in water resources taken into account? If so, have scientific information and climate projects been consulted?	N/A	N/A	Yes
2.	In goals to increase energy efficiency, are ways to increase water efficiency also considered?	N/A	N/A	N/A
3.	Are impacts of water quality considered in developing and implementing new energy generation projects? i.e., thermal pollution impacts or changes to soil erosion near wind and solar farms impacting nearby water bodies.	N/A	N/A	N/A

Industry/Mining/Manufacturing				
1.	Are there existing mechanisms that identify and track water use? If so, in which sub-sectors of industry are those included?	N/A	N/A	N/A
2.	Is the industry actively involved in national and sub-national water resources management dialogues and planning?	N/A	N/A	N/A
Agriculture/Livestock/Aquaculture				
1.	Is future water resource uncertainty considered in plans to develop agricultural water storage or irrigation infrastructure?	N/A	N/A	Yes
2.	Are impacts on water resources and ecosystems considered for land-use changes such as expanding agricultural or agroforestry areas?	N/A	N/A	N/A
3.	Is there consideration of how changes in rainfall variability will impact rain-fed crops?	N/A	N/A	Yes
4.	Are water resources and ecosystem impacts considered in plans for changes to land use for grazing, livestock, or crop development? i.e., water requirements for fodder or biofuels production?	N/A	N/A	N/A
5.	Are specific climate-smart agriculture techniques/practices identified as adaptation and/or mitigation activities, such as regenerative soil and land management? Does the plan specify that those climate-smart agriculture actions be tied to projected changes in climate?	N/A	N/A	N/A
Water Resources				
1.	Are data collection mechanisms in place or developed to monitor hydrological resources and weather?	Yes	Yes	N/A
2.	Are environmental flows or dry season minimum flows considered in planning? Are there mechanisms to update these periodically to account for changes in allocations, new projects, and water availability?	Yes	N/A	N/A
3.	Are adaptation measures for freshwater ecosystems included in plans to ensure the protection and resilience of these resources?	Yes	N/A	N/A
4.	Does consumptive water use (water removed from available supply without return to water resources system) take into account allocations for ecosystem services? If so, are there mechanisms to enforce this?	Yes	N/A	N/A
5.	Is the need for wetland ecosystems to be in a better condition and more resilient identified as a means to enable water security, water resilience, and reduce emissions, as well as for the benefit of nature?	N/A	N/A	N/A
6.	Are wetlands, including peatlands, considered important carbon sinks and carbon sources? Do plans exist to manage these as carbon sinks in the context of ongoing climate impacts?	N/A	N/A	N/A
Solid Waste				
1.	Are water requirements in waste-to-biofuel conversion considered?	N/A	N/A	N/A
2.	Are water requirements for landfill gas recovery systems considered?	N/A	N/A	N/A
Transport				
1.	Do goals for changing modes of transportation mention water use requirements?	N/A	N/A	N/A
2.	Does transport infrastructure development consider water resource impacts, including impacts on stormwater and water quality?	N/A	N/A	N/A
3.	Are nature-based solutions considered in transport infrastructure design, i.e., for slope stabilization near road/rail, stormwater management, and port development? If so, are water requirements well understood for ensuring the success of that NBS?	N/A	N/A	N/A
Forestry and Land Use				

1.	Do reforestation objectives consider water requirements needed for the establishment and/or maintenance of reforested areas?	N/A	N/A	N/A
2.	Are watershed-based land-use planning mechanisms established or included as part of adaptation plans?	N/A	N/A	N/A
3.	Do proposed changes to soil management practices consider water requirements and effects on local watersheds?	N/A	N/A	N/A
4.	Are forests and water resources being managed in an integrated fashion?	N/A	N/A	Yes
5.	Are water protection and natural protected areas established for improving water recharge and reforestation efforts?	N/A	N/A	N/A
Human Settlements				
1.	Is a climate risk assessment included in the review processes for new development?	N/A	N/A	N/A
2.	Are water requirements considered for the growth of human settlements?	N/A	N/A	Yes
3.	Are nature-based solutions considered in plans for improvements to human settlements? If so, do those solutions consider water requirements for implementation?	N/A	N/A	N/A
Water Supply and Sanitation				
1.	Are national water and sanitation policies aligned with national climate plans, including mitigation and adaptation priorities?	Yes	Yes	N/A
2.	Do representatives from the WASH sector actively participate in national climate planning processes?	Yes	N/A	N/A
3.	Is priority given to water for human consumption in times of scarcity?	Yes	N/A	N/A
4.	Do existing planning frameworks facilitate the integration of climate change into water and sanitation policies and programs?	N/A	N/A	N/A
5.	Are capacity-building activities in place to ensure local stakeholders can disseminate and implement climate-resilient water management strategies?	Yes	N/A	N/A
6.	Do national climate plans include provisions for addressing gender inequalities in WASH?	Yes	N/A	N/A
7.	Are there explicit provisions for managing water infrastructure during extreme events/exceptional circumstances?	N/A	N/A	N/A
8.	Are the adaptation needs of water and sanitation infrastructure and services identified to ensure resilient climate provision of those basic social services?	N/A	N/A	N/A
Health				
1.	Are health aspects of climate change and water considered where there are clear links? (e.g., malaria prevalence and rainfall, flooding, and spread of water-borne/washed/related disease)	N/A	Yes	N/A
2.	Are provisions included for protecting vulnerable populations, including the elderly, children, those with disabilities, and the immunocompromised?	N/A	Yes	N/A

Table 5: Section 4 “Links to climate financing and project implementation” Summary Matrix

	Question	NWRP	NCCCS	CCS
	General Questions			

1.	Is there a clear pathway between policy priorities, actions, and targets established in national climate plans and the development of projects intended to meet or align with those priorities, actions, and/or targets?	Yes	No	N/A
2.	Does financing from national banks, finance ministries, MDBs, donors, and other sources explicitly reference and align with national climate strategies?	No	N/A	N/A
3.	Are national climate plans aligned with country strategies published by financing institutions, such as multilateral development banks? (e.g., the Asian Development Bank's Country Partnership Strategies)	N/A	N/A	N/A
4.	Do responsible agencies have the capacity, including manpower, partner networks, systems, and mandates, to connect national climate plan priorities to appropriate investment opportunities?	No	N/A	N/A
5.	Is the national finance sector (banks, insurers, asset managers, etc.) involved in implementing the adaptation and/or mitigation measures defined in the national climate plan?	No	N/A	N/A
6.	Are there mechanisms to align investments of non-national institutions (civil society, cities, provinces and states, RBOs, businesses, etc.) with national resilience strategies?	No	Yes	N/A
7.	Is finance contingent on effective climate-proofing – i.e., the mainstreaming of climate change into mitigation and adaptation strategies, programs, and projects?	N/A	N/A	N/A
8.	Are there provisions for tracking financial allocations and expenditures on climate adaptation and mitigation?	N/A	N/A	Yes
9.	Is coupling public budgets (co-investing) stimulated for multi-purpose projects, like landscape-scale water and development projects where nature-based solutions are integrated?	N/A	N/A	N/A