This was exacerbated by high energy prices and global supply shocks.

Climate models project an increase in frequency of climate change-exacerbated floods (potentially damaging and life-threatening) and drought hazard levels.[4] For example rainfall data for Central Chile show deficits of 80-90 percent for the year 2019,[5] indicative of dire water availability challenges. As recently reported by the National disaster prevention and response service (Servicio Nacional de Prevención y Respuesta ante Desastres, SENAPRED) during June and August, 2023, central southern Chile was inunda with floods that resulted in a ·State of Catastrophe· declaration as it was the second major flood in 8 weeks.[6] Moreover, the country faced devastating wildfires in February 2024, which further exacerbated the vulnerability of the population and the economy, particularly affecting rural and indigenous communities where women play a central role in agriculture and family sustenance.

Current patterns reveal a consistent growth in the urban indigenous population, with 88 percent of indigenous individuals residing in urban areas, in contrast to 12.2 percent living in rural regions.

From the central metropolitan region to the north, water availability per capita[7] is at a mere 800m 3 per yea With all surface water resources already allocated, semi-arid regions like Coquimbo face frequent water conflicts and the constant threat of groundwater overexploitation. Between the O·Higgins and La Araucanía regions, water availability improves, but deficits can still occur during dry years. From the Los Rios region to the southernmost point, water is abundant, but demand is low. Climate change projections indicate a high probability of reduced rainfall in the central regions.

The water resources management system has been struggling to manage these growing conflicts and adapt to the changing climate conditions. Traditionally, the allocation of water resources has been done through a water market system (introduced in 1981 with the enactment of the Water Code).

However, it also gave rise to some water management issues, such as the need to reconcile economic incentives with the protection of the public interest and to balance the role of the State and the private sector in managing a resource that is crucial for sustainable development (World Bank, 2011). Despite undergoing reforms in 2005, 2018, and 2022, water management still requires further strengthening to better cope with growing water resource demand and water extremes, including both floods and droughts (See Technical Assessment Report) Traditionally, decisions on water investment and allocation have been driven by market incentives, often prioritizing short-term economic gains at the expense of long-term sustainability (World Bank, 2012). At the river basin level, planning weaknesses (See Technical Assessment Report) make it difficult to develop sustainable water services, impacting the reliability of these services under future climate conditions and the integration of different investment projects.

Water supply and sanitation: Chile has achieved close to universal access to safe drinking wate[8] (99.9 percent of the population) and sanitation (96.7 percent) in urban areas with a rate of wastewater treatment of 99.9 percent, making it one of the most advanced countries in the region on this front, along with Uruguay.

Water contamination from surface run-off and floods can result in negative public health outcomes for residents, thus creating a climate-linked challenge. Rural Drinking Water Committees (Comités de Agua Potable Rural, APRs), responsib for the provision of these services, frequently face difficulties in maintaining and expanding services particularly to dispersed rural areas, due to limited financial resources, technical expertise, and governance capacities. To bridge the water service gap in water scarce areas, the GoC has turned to costly solutions such as water trucks Between 2010 and 2016, the State spent US$ 130 million on renting water trucks to supply 400,000 people.

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[7] Water availability per capita refers to the amount of water resources, typically measured in cubic meters, that is available per person within a specific region or county, and it is one of the most fundamental water-scarcity indicators in the global water resources management agenda.

[8] Urban WSS utilities in Chile are regulated by the Superintendence of Sanitary Services (Superintendencia de Servicios Sanitarios, SISS). SISS ensures access to drinking water in quality, quantity and continuity, as well as sanitation as established in the regulations, at a fair and sustainable price, seeking efficient use, caring for the environment, cooperating with the governance of water resources, and promoting transparency in the market.

The amount of land using these methods has increased from 93,000 hectares in 1997 to approximately 900,000 hectares today (almost 50 percent of the total productive land).[9] This shift to modern irrigation has been supported by the Government and has allowed for an increase in land dedicated to high-value crops such as fruit trees and vineyards.

It is important to note that approximately 57 percent of the irrigation systems in the country are inefficient.[10] Irrigation projects frequently become isolated solutions, lacking assessments of climate risks and their impact across the basin. Therefore, integrated water resource management within watersheds is essential to promote sustainable irrigation practices and prevent resource overexploitation, while continuing to incorporate climate resilience into irrigation projects to better adapt to ongoing climate change-exacerbated water scarcity and rainfall deficits (See Technical Assessment Report). Ensuring irrigation resilience to climate change is vital for social equity.

c. Flood and landslide risk management: Climate change also contributes to the occurrence of floods and landslides.

Traditional flood control infrastructures have been the GoC·s response However, with urban sprawl and increasing demand for green and recreational areas, there is a growing need to integrate these solutions with natural solutions that can improve livelihoods and promote biodiversity conservation.

These water security challenges will require improving the capacity and coordination of Government institutions working in water. In Chile, the Ministry of Public Works (Ministerio de Obras Públicas, MOP) is responsible for water resources management and for the provision of rural water supply and sanitation (WSS) services, irrigation infrastructure (with the Ministry of Agriculture, MINAGRI), and flood protection by maintaining, rehabilitating, and developing public infrastructure services and water resources.

DGA is responsible for water use planning, management, and allocation. DOH is tasked with planning, design, and construction of hydraulic infrastructure, including dams, canals, and irrigation systems. Within the DOH, the Sub-Directorate of Rural Water Supply and Sanitation Services (Subdirección de Servicios Sanitario Rurales, SSR) is responsible for infrastructure development as well as for the provision of technical support to rural water supply providers. Additionally, the Ministry of the Environment (MMA) is responsible for water quality monitoring and

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[9] Ministerio de Agricultura.

Both Ministries and their corresponding units have been working to keep pace with the above-mentioned challenges in water resources management and water service provision.

Recent reforms have tasked the DGA with growing responsibilities in the management of water resources. In 1981, the water code assigned to the DGA the responsibility to regulate and oversee water resource allocation, use, and conservation, including the management of water use rights, infrastructure, regulation enforcements, and data collection. The 2018 reform granted the DGA the power to regulate and revoke usage rights, and to establish a system for immediate data transmission from water control and measurement devices.[12] The 2022 reform[13] strengthened the DGA·s role, focusing on human consumption, environmental protection, and sustainable management. The DGA can now terminate unused water rights,[14] impose ecological flows,[15,16] and reduce extractions for source sustainability,[17] prioritizing human consumption. Additionally, the DGA manages water resources and monitors aquifers, but resource limitations and data gaps hinder effective oversight. These increased responsibilities require more staff and enhanced technical capacity in order to promote a better coordination and data sharing for informed water management strategies.

Similarly, in 2017 Chile·s rural water service provision model transferred responsibilities for rural water supply to the DOH. The Law N°20,998 (Ley de Servicios Sanitarios Rurales), adopted in January 2017 and regulated in 2019, dictates that the DOH and its SSR are responsible for the provision of technical support to rural water supply providers, including the registration of rural WSS service providers, the creation of a single rural WSS investment unit (Ventanilla Única), and the design and implementation of a rural WSS Information system. Under this Law, the SSR is now responsible for both rural water and sanitation[18] and for providing technical assistance and training to rural water service providers, which was previously handled by urban water utilities through an "agreement" with DOH. To fulfill this new mandate DOH has been slowly increasing its staff but will still need to develop strong technical capacities.

Finally, the GoC has tasked the MMA to play a more prominent role in the management of water resources and contribute to a multisectoral perspective on water management.

The DGA may require the installation of systems for measuring the flows extracted, the ecological flow referred to in Article 129 bis 1 and a system for transmitting the information obtained, in accordance with the rules established by the Service, to the holders of rights to use surface water or user organizations that extract water directly from natural channels for public use.

If the exploitation of groundwater causes a degradation of the aquifer or a part of it, to the point that it affects its sustainability, the DGA must limit the exercise of the rights of water use in the degraded area at the request of one or more affected parties.

The DOH's Subdirectorate of Water was responsible for implementing the Rural Drinking Water Program, with a mandate solely for water.

Technical assistance was provided by water companies through "agreements" with regional governments for the design, construction, improvement, and expansion of infrastructure. After the regulation of Law N°20.998, a specific legal framework was established for the integral provision of water, sanitation, and wastewater treatment services. The Subdirectorate of Rural Sanitation Services (SSR) was created within the DOH of the MOP with comprehensive responsibilities.

Today, the GoC has requested a more prominent contribution from MMA in water related tasks to broaden a water infrastructure centric vision.

The GoC has designed a transformational US$ 1,872.3 million program which places water security as a top priority in the political agenda. This program, known as the Just Water Transition (Transición Hidrica Justa, THJ) program, aims to tackle both institutional and infrastructure gaps, addressing both water resources management and water service provision challenges. On the institutional side, the aim is to promote river basin governance centered on resilience, ecosystems, and integrated planning This will lay the ground for the improvement of a river basin governance structure (see Technical Assessment Report) and the development of planning instruments such as the River Basin Strategic Plans (Plan Estratégico de Recursos Hídrico en Cuencas, PERHC To begin this process, river basin working groups are being created. The THJ program also works towards the improvement of water service provision through a renewed vision of water infrastructure development. Closing infrastructure gaps includes continuing to close rural WSS access gaps, ensuring sustainable irrigation practices, and lowering risk of flooding. To move the THJ agenda forward, the GoC has established a new inter-ministerial committee called the Committee for a Just Water Transition (Comité d Transición Hídrica Justa or THJ Committee). The THJ Committee·s mandate is to guide the transition to a more sustainable and equitable management of water resources in Chile, considering the needs and perspectives of all stakeholders.

The THJ program includes many new elements that are novel for Chile·including the creation of participatory water governance at basin level and the needed institutional and legal framework for adequate river basin management, the introduction of changes in the rural WSS service delivery scheme,[19] and the introduction of Nature Based Solutions (NBS) in the traditionally grey hydraulic infrastructure portfolio.

The GoC·s objectives include climate change adaptation, sustainable resource management, and digital transformation. The GoC is deeply committed to achieving water security and ensuring access to water services for the entire population. Chile has presented commitments during the UN Water Conference 2023 to advance global water security.[20] These commitments include integrated water resource management (IWRM), water efficiency promotion, ecosystem restoration, and equitable access to drinking water and sanitation.

The Program aligns with the World Bank·s Country Partnership Framework (CPF) for Chile, FY2023-27. It addresses CPF Objective 5 to enhance water security by improving rural water supply and sanitation, optimizing water allocation, conservation, and developing green and gray solutions for climate resilience. It also directly supports the CPF's high-level objective (HLO) 2: Enhanced environmental sustainability and climate resilience, promoting comprehensive WRM that balances water demands, encourages sustainable water use, and considers surface and

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[9] The THJ program does not consider investments in rural sanitation infrastructure for the next five years; the current priority is to close the water supply access gaps in rural Chile, specifically in semi-concentrated localities.

The Program also aligns with the World Bank·s mission and Climate Change Action Plan, focusing on resilient cities, climate-smart land use, and water security, while contributing to reduce poverty and promote shared prosperity on a livable planet through water-related services for the vulnerable.

The PforR creates an avenue to enhance existing governance capacity and facilitate the development of an integrated results-based approach for financial reporting and budgeting in the sector. Additionally, the PforR allows the World Bank to continue its long-standing engagement in Chile around water (see Technical Assessment Report), provide targeted technical knowledge and international experience not only to refine and implement the novel areas of the GoC·s water agenda (IWRM, NBS, and rural WSS), but also to reinforce the coordination between inter-ministerial efforts.

It promotes water security through climate-resilient development and strategic water resource plans for river basins. The Program supports integrated water resources management and climate empowerment, aligning with Chile·s transition and sustainable development goals.

The Program complements Chile·s mitigation commitment to reduce GHG emissions to 95 MtCO2eq by 2030,[2] 2 as it focuses on improving water monitoring networks, modernizing systems, and enhancing water allocation efficiency, which can contribute to GHG reduction.

The THJ program tackles multiple challenges in WRM and service provision through a water security approach (See Technical Assessment Report) The aim of the THJ program is to strengthen Chile's water governance, while also ensuring the fulfillment of population, environmental, and economic needs, and securing sustainability for current and future generations in today's changing climate.

Strengthening institutional capacity for integrated water resources management at the national and basin levels.

The THJ Committee is led by the MMA, and composed of the Minister of Public Works, Minister of Agriculture, Minister of Energy, Minister of Science, Technology, Knowledge and Innovation, and the Minister of Mining· demonstrating the THJ program's goal of improving inter-institutional coordination for WRM and incorporating environmental considerations into the sector. The THJ Committee not only seeks to address ongoing water scarcity, but also to move towards the sustainable and equitable management of water. The THJ Committee has an important role to pave the way for Chile's transition in managing water resources and ensuring the sustainable use and equitable allocation to meet the country·s growing water challenges amidst climate change.

The MOP and MMA have introduced participatory tools, placing strong emphasis on citizen engagement to promote participatory governance of water management, where the gender-equity approach will be included as a transversal axis, among others, in the National Water Security Policy.

While addressing climate change-exacerbated droughts, floods, and water scarcity, the PforR will focus on: (i) strengthening institutional capacities for the integrated management of water resources, including the implementation of a participatory water governance approach at basin level; (ii) improving safely managed drinking water and sanitation services in rural areas; and (iii) improving climate resilience through the development of integrated green and gray solutions for irrigation and flooding at basin level. The Program has a national geographic scope but excludes investments in new rural water supply, wastewater treatment, flood control, and irrigation infrastructure on international waterways, as well as investments that finance the expansion or alterations of such schemes in a way that would adversely impact the quantity or quality of water flows to other riparian countries (See paragraph 30).

Strengthening institutional capacity for integrated water resources management at the national and basin levels. RA1 will support all the Borrower·s efforts to implement IWRM at the national and local levels, including the strengthening of the national water authority, the improvement of the water information, and the improvement of river basin governance.

- At the national level, the program includes institutional strengthening, water policy development, and water data generation. An institutional analysis that will serve as the basis for the strengthening of the national water authority (through the strengthening of DGA or the creation of a higher-level water authority), informed by previously conducted World Bank studies. The Program also includes the development of a proposal of a National Water Security Policy, which will guide the GoC·s vision and work program, and may also inform future river basin governance. Additionally, the RA includes implementation of a digital strategy to strengthen the Public Water Registry. This includes software development, construction of a water quality laboratory, and enhanced infrastructure for water monitoring, databases, models, and applications to bolster information availability and transparency, and to support water solutions for flood and drought risks at the territorial level and informed climate-responsive management.

Specifically, the Program will provide support for: (i) formalizing a river basin governance structure for the management of water resources at basin level; (ii) creating river basin working groups to advance in the improvement of basin water governance in selected basins; (iii) preparing River Basin Strategic Plans (PERHCs) for selected basins with a focus on mitigation of climate change impacts (drought and flood management); and (iv) compiling lessons learned on the process of strengthening water governance at the basin level and the planning exercise for scale up beyond the selected basins.

[2] 5 The focus in on the implementation of Dublin·s Principles II and III on the need of a participatory approach for water management and the role of women.

This includes the design, installation, expansion and/or rehabilitation of drinking water services.[2] 6 Given that rural households generally rely on surface water sources (rivers, springs, estuaries or lakes), groundwater (wells) and water trucks, the investments would potentially allow connection to pre-existing supply lines, reduce water losses and wastage, and therefore reduce vulnerability against future dry shocks.

These wastewater treatment pilots will validate low-cost technologies for rural areas with sewage systems, manageable for APRs, and promote the incorporation of NBS where feasible. The Program will allow for the identification, detailed design, and construction of three pilots of alternative rural wastewater treatment technologies.

This RA aims at supporting the GoC·s efforts in the development of flood control and irrigation infrastructure. This RA will also promote the incorporation of NBS into traditional hydraulic infrastructure development. The Program will bring a new dimension to the traditional development of hydraulic infrastructure and improve the resilience and impact of hydraulic works.

tra The Program will support the GoC in integrating hydraulic infrastructure delivery as part of a river basin plan approach, improve the focus on infrastructure impacts, and improve the benefits and resilience of gray infrastructure. The Program includes: (i) the formulation of small and medium water storage plans, to maintain water supply for different uses, reducing the vulnerability to drought impacts; (ii) the rehabilitation of small irrigation storage reservoirs, which can capture runoff and reduce peak flows in rivers during rainfall season, making systems more adaptable to changing climatic conditions; (iii) the construction, rehabilitation, and modernization of primary irrigation canals, optimizing water conveyance systems to reduce water losses and ensure more reliable water availability; (iv) the development of basin-scale urban flooding master plans to identify flood-prone areas and systems that are flexible enough to accommodate changing climate conditions; and (v) the construction and rehabilitation of urban stormwater management schemes to reduce flood risk and landslides.

Specifically, the Program will develop urban wetland management plans with a watershed approach in selected river basins.

The Program includes the implementation of appropriate participatory and consultation processes with all the stakeholders, considering not only the civil works but also the activities that involve the design of plans, policies, and new Institutions for water management at the river basin level.

These shared watercourses are considered international waterways for the purposes of the World Bank·s Operational Policy regarding Projects on International Waterways (OP 7.50). As agreed with the Government of Chile, the Bank financed Program also has a national scope, but activities on transboundary waterways are limited to rehabilitation investments that would not adversely affect the quality or quantity of water flows of the shared watercourse to other riparian countries or adversely affect other riparian countries· possible water use as specified in the Environmental and Social Systems Assessment (ESSA More specifically, the Program will exclude financing support to investments in new rural water supply, sanitation (wastewater treatment), flood control, and irrigation infrastructure on international waterways, as well as investments to finance the expansion or alterations of such schemes in a way that would adversely impact the quantity or quality of water flows to other riparian countries.

3 Water-related services include water supply and sanitation, irrigation, and flood and landslide risk management.

The PDO is to strengthen the Borrower·s capacity for water resource management and water-related services.

A list of PDO-level results indicators has been identified to measure the achievement of the Program:

- PDO 1: Improve the GoC·s WRM planning capacity at national level
- PDO 2: Strengthen participatory water governance institutions in selected basins
- PDO 3: Improve the GoC·s rural WSS planning capacity at national level
- PDO 4: Increase access to safely managed rural drinking water services
- PDO 5: Increase number of people at lower risk of climate change exacerbated floods

E. Disbursement Linked Indicators and Verification Protocols

33. The DLI matrix design (See Annex 1) puts emphasis on advancing needed institutional reform at the national level, providing incentives to advance on a river basin water governance structure, the proposal and approval of a National Water Security Policy, and the approval of a Rural WSS Strategic Plan to 2030. More importantly, incentives are placed on improving the integration of GoC·s investment effort with a basin approach, linking disbursement to an increase in percentage of DOH investment in basins with PERHCs.

The Program will include the following nine DLIs:

- DLI1: Creation of river basin working groups in selected basins.
- DLI2: Proposal and approval of a Water Security Policy.
- DLI3: Development of tools for improved knowledge on surface and groundwater quantity and quality.

- DLI6: Implementation of pilots of Alternative Rural Wastewater Treatment Technologies.

- DLI9: Percentage of the number of MOP·s or other ministry·s investment projects that are included in the PERHCs

In Chile, the budget for water-related issues, is predominantly under the jurisdiction of the MOP. As described in paragraph 8, the MOP ·through the DGA, DOH, and SSR· is responsible for WRM and for the provision of rural WSS, irrigation infrastructure, and flood protection.

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DLI9: Percen

Focal points have been identified in each Result Area, as well as financial, procurement, social and environmental specialists (including occupational health and safety) for each Results Area to facilitate the cross-institutional coordination, especially for Results Areas 1 and 3 which require coordination between the MOP and MMA.

- Results Area 1: Implemented by DGA (MOP) and co-implemented by the OTSJ (MMA)
- Results Area 2: Implemented by SSR (MOP)
- Results Area 3: Implemented by DOH (MOP) and co-implemented by the OTSJ (MMA)
- DGOP provides Financial Management and M&E support to Results Areas 1,2,3.

Overall, the technical assessment concluded that the capacities within MOP and MMA were sufficient for program implementation (See Technical Assessment Report)[34] 4

In particular, expanded tasks under RA1 for DGA and MMA regarding the work on river basin governance have been matched by a suitable team of professionals. Similarly expanded water resources oversight responsibilities for DGA have been coupled with budgetary and personnel increases. For RA2, the technical assessment concluded that the SSR will need to review the institutional models for the delivery of rural WSS services as current staffing plans will fall short of meeting program goals by 2027.

A Program Coordination and Reporting Unit (PCRU), located in the DGOP and following the directives of the MOP Ministerial Cabinet, will facilitate administrative tasks and monitoring and evaluation.

This manual covers a range of topics, including: (i) the activities and timetable of actions to be carried out under the Program, as well as excluded activities; (ii) the composition and responsibilities of the PCRU; (iii) the roles and responsibilities of all entities participating in the Program; (iv) the fiduciary, technical, and operational aspects as well as procedures for implementing the Program, including financial management and procurement procedures; (v) the DLIs for the Program; (vi) the verification protocols for the DLIs and DLRs (disbursement-linked results); (vii) the Anti-Corruption Guidelines (ACG); and, (viii) the Program Action Plan.

The MOP is equipped with an M&E system for the tracking of the Ministry·s investments housed within the DGOP.

If the World Bank finds that the disbursement request meets the terms of the loan, the corresponding funds will be disbursed to DIPRES, under the Ministry of Finance.

[3] According to World Bank policy, the Bank may agree to disburse up to 25 percent of the PforR Financing proceeds on account of the DLIs met by the Borrower between the date of the concept review and the date of the legal agreement for the PforR Financing (·prior results·).

To contribute towards the success of the Program, the World Bank will provide complementary implementation support as well as technical assistance focused on the following areas: (i) support to the MMA and DGA for the improvement of the institutionality at the river basin level; (ii) support to the SSF throughout its implementation of Law N°20,998 for improved rural WSS services; (iii) support to the DOH as it introduces resilience by design approaches in irrigation works; and (iv) support to the DOH as it incorporates NBS in flood control works, among others.

The Program structure is designed to close service gaps and to enhance climate resilience through addressing key challenges in WRM, rural WSS, flood and drought risk management.

These challenges include:

improving coordination between over 40 water management institutions, enhancing DGA·s technical capacity, improving the river basin governance structure, and addressing insufficient water data, information, and planning instruments that limit effective management.

· Chile is increasingly grappling with droughts and floods, and there is a need to improve irrigation and flood protection infrastructure to mitigate these challenges.

Chile lacks a holistic, basin-focused or climate-resilient approach to water management.

However, current irrigation projects are typically demand-driven and neglect environmental and climate risks, making projects vulnerable to water shortages and water conflicts. Also, urban flood plans need better integration with river basin planning and more effective ways to consider climate change impacts.

Despite the proven effectiveness of NBS, they are not consistently incorporated into flood protection designs due to resistance from traditional engineering approaches.

For instance, while DGA's role has always involved regulating and overseeing water resource allocation, they recognize that the changing climate requires a more integrated approach, emphasizing participatory governance at the basin level. DGA is therefore strengthening its capacity to create river basin working groups. To advance in the sustainability of an improved river basin governance structure, DGA has received a budgetary allocation for the creation of the River Basin Technical Secretariat and has received additional funds from the Innovation Water Fund[32] 8 set up in 2022 to help river basin planning.

These efforts include training professionals in various areas related to participatory river basin governance, legislative advice, coordination, technical support, and administrative activities in pilot river basins to form river basin working groups.

The DOH has established a strong institutional presence nationally and regionally, with dedicated divisions and sub-directorates for different aspects of water projects, including rural water supply, sanitation, drainage, and irrigation.

Additionally, SRF has continued working on the rural drinking water supply portfolio, considering the changes in regulation.

DOH has a history of efficient budget execution, highlighting its ability to manage resources effectively. Going forward, as DOH expands its focus on flood and landslide prevention and on NBS, they recognize the need to expand technical capacity, while improving coordination with other institutions like the SENAPRED and MMA.

MMA·s environmental expertise is anticipated to play a significant role in the NBS efforts outlined in RA3.

During Program preparation, the World Bank has been bringing experts and case studies from countries like Mexico, Peru, and Brazil to showcase how they have addressed river basin governance matters.

The World Bank is committed to continue supporting the GoC as it explores innovative approaches to enhance water security, facilitating global expertise.

Emerging risks result from new tasks such as the improvement of a river basin governance structure, the expansion on the investment portfolio of rural WSS, and the inclusion of NBS as part of MOP·s interventions.

These include: (i) the development of an outreach and communication plan explaining IWRM and river basin governance, benefits and functions; (ii) the development of an advocacy strategy for the passing of a bill to improve the governance structure for IWRM at basin level, as a proposal to modify existing legislation or to issue a new law; (iii) an action plan to improve rural WSS delivery within the context of Law N°20,998; and (iv) the creation of inter-ministerial working group for NBS, among others.

The below Expenditure Framework shows the total Program (PforR) cost (US$ 1,546.04 million), which is the total government program cost (US$ 1,872.3 million as described earlier) excluding (i) large infrastructure works with significant environmental and social risks, (ii) investments in new rural water supply, sanitation, flood control and irrigation infrastructure on international waterways, and (iii) expansion or alterations with adverse impact on the quantity or quality of water flows to riparian countries.

Strengthening institutional capacity for integrated water resources management at the national and basin levels.

Strengthened water resource management through the program will not only yield benefits in different regions across Chile but will also bring benefits to different sectors by increased water security in targeted areas and higher climate change resilience. The analysis identified potential outcomes concerning management aspects; benefits derived from having better water infrastructure; reduction of social costs due to greater water security; environmental benefits regarding conservation efforts and avoided costs of the impacts of extreme weather conditions.

The investment will be divided into the three areas of results, of which US$ 90.3 million will be allocated to national and local institutional WRM reforms and improving the information system, US$ 1,300 million will be allocated to increase safely managed WSS in rural areas, and US$ 482 million will be allocated to the improvement of climate resilience through the development of gray and green infrastructure, including irrigation and storage projects, urban flooding, runoff and sediment management, and green solutions (including NBS).

As detailed in the next table, benefits occurring from the program have been distributed in two main categories: (i) benefits resulting from improved institutional capacity for water resources management and infrastructure planning; and (ii) benefits from the expansion and rehabilitation of water infrastructure.

- A recent evaluation of the willingness to pay for the provision of ecosystem services in the Aconcagua basin yielded a reference value of US$ 120.6/year/household.

- Additionally, the development of wastewater treatment systems will result in a total avoided social cost of US$ 33 million.

The economic analysis considered the project·s potential outcomes in relation to aspects of management, water infrastructure, reduction of social costs due to greater water security, and environmental benefits in the scope of climate change resilience.

The main climate and disaster risks likely to affect project investments are floods, droughts, and water scarcity. The Program aligns with Chile·s NDC which stipulates that water management and sanitation is one of the two urgent areas to build resilience.

The installation of sensors and monitoring equipment to automate data capture and storage will improve water management thus increasing water-use efficiency and contributing to GHG emission reduction.

Also, NBS will be integrated into infrastructure projects, thus leading to reduced emissions from water-related activities in the long-run.

If the World Bank determines that it has not been able to receive the documentation, records, or information as requested directly and/or through MOP and/or MMA, the World Bank may declare the relevant expenditure ineligible for World Bank financing under the Program.

These institutions are expected to hold the fiduciary responsibilities to manage the Program.

The Program·s Environmental and Social Systems Assessment (ESSA) was prepared by the World Bank to meet the requirements of PforR Financing Policy and Directive, following Bank Guidance (OPS5.04-GUID.118).

The main positive environmental effects are related to a more efficient use and management of water resources, including the reduction of water losses due to aging rural drinking water infrastructure. The Program would likely have overall positive social impacts mainly on the quality of lives and health of rural communities through the expansion of safely managed water and sanitation services; the health, safety, and economic activities of urban and rural population through the reduction of the risks of urban flooding and drought; better governance of water resources, strengthening transparency and improving stakeholder engagement; and the reduction of conflicts over water through the implementation of a participatory IWRM approach in selected basins.

Key environmental risks and impacts that could arise from the construction and operation phases of this infrastructure, include: (i) temporary impacts on water and air quality mainly during the construction phase; (ii) contamination risk associated with generation and inadequate management and disposal of non-hazardous and hazardous solid waste (including electronic waste management), generation and discharge of wastewater from civil works, and sludge generation and disposal from water and sanitation works; (iii) health and safety risks to the project workforce and local communities, including from exposure to hazardous materials/wastes; (iv) impacts on natural habitats; and (v) risks and impacts that could derive from inadequate environmental management during the operation and maintenance of the infrastructures.

that should be relocated due to civil works; (iii) land acquisition leading to temporary or permanent physical and/or economic displacement, or restrictions on land or resource use having adverse impacts on local livelihoods; (iv) impacts on economic activities due to the civil works; (v) possible increases in social conflict due to changes in the management of water resources supported by the Program; and (vi) risk of exclusion of vulnerable population in rural areas who, due to their low incomes, may not be able to afford some of the new water services or tariffs. To mitigate these risks, systematic screening for social risks and impacts will be conducted, and appropriate participatory and consultation processes with all the stakeholders will be implemented. These processes will not only encompass the civil works but also the development of plans, policies, and water management governance at the river basin level.

The E&S systems applicable to the Program are reasonably aligned with the core principles and key planning elements set out in the PforR Financing Policy and Directive. Regarding the management of risks and impacts expected from civil works, Chile has a robust Environmental Impact Assessment System (Sistema de Evaluación de Impacto Ambiental, SEIA), which is administered by the Environmental Assessment Service (Servicio de Evaluación Ambiental, SEA) and includes the evaluation of both E&S risk and impacts.

Climate change is posing additional threats to the GoC·s capacity to manage water resources and increase water security.

At the river basin level, poor planning hinders the development of sustainable water services, impacting their reliability and the integration of adaptation strategies in different investment projects. Moreover, current urban flooding master plans are often disconnected from broader river-basin planning.

Chile requires strengthening of its basic water resources management tools to address climate change impacts. This includes integrated water resource planning, long-term vision, and effective river basin-level decision-making to strengthen risk management practices. Climate resilience can also be enhanced by the expansion of monitoring networks, the improvement of data collection systems, and the integration of NBS.

water quality and quantity analysis for both surface water and groundwater, strengthening the sector·s monitoring capacity and preparedness for future extreme weather events, especially floods, droughts, and water scarcity.

contribute to adaptation strategies as the guidelines will outline the best tools available to respond to climate-related risks and enhance the incorporation of NBS, ensuring PERHCs are integrated into future DOH investment projects.

ministry·s investment projects that are included in the PERHCs.

The improvement of the governance structure for IWRM at basin level will require changes in the existing legal framework. This could translate into the enactment of a legal framework by Congress·either as a proposal to modify existing legislation or to issue a new law.

To achieve this consensus, particularly among large water users, a cautious communication strategy will be crucial to ensure dissemination of information and prevent mistrust among existing water users.

The GoC will develop a communications strategy with the support of the World Bank to convey the learning collected through the river basin working groups and benefits of the river-basin approach with all users, especially addressing concerned water users, while also bringing in international learning.

Several areas of focus within the GoC·s initiatives, such as NBS, rural WSS, and river basin management, require increased technical capacity and staffing from the GoC.

In the case of rural water supply, the GoC is working to update and enhance its current delivery model.

While the PforR will mitigate this risk through knowledge sharing and global expertise to inform the government program, the GoC will continue to assess institutional capacity and collaborate with the World Bank to address emerging needs, ensuring implementation preparedness as the program advances.

C, this classification responds both to the wide range of potential E&S risks and adverse impacts from the variety of civil works to be implemented under the Program, and to the diverse activities supported by the Program that imply changes in the current management of water resources and could increase the social conflict around this issue.

Consensus around the institutional setup that will improve water resources management at basin level among stakeholders requires consensus among stakeholders. To address this, the GoC is creating river basin working groups to demonstrate the benefits of an IWRM approach, especially within today·s changing climate and water scarcity. The GoC will collaborate closely with the World Bank to develop a Stakeholder Outreach Plan, addressing user concerns, clarifying the river basin framework benefits, and promoting participatory water management across government, private sector, civil society, and indigenous communities.

RESULTS FRAMEWORK MATRI

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Program Development Objective(s)

To strengthen the Borrower's capacity for water resource management and water-related services.

Data source/ Agency	MOP
Verification Entity	World Bank team
Procedure	World Bank verifies the content, composition and functions of the Strategic River Basin Water Resources Table.

Data source/ Agency	DGA
Verification Entity	IVA
Procedure	¡`/A will review the National Information System and verify historic data transmision from the new wells
3.3 : A water quality laboratory constructed and with technical equipment installed.	(Number)
Formula	1 operational laboratory= US$ 5000,000
Description	This involves the construction of a new water quality analysis laboratory and the installation of its technical equipment.

Responsibility for flood protection lies within the DOH (MOP).

benefits of an integrated water governance structure at the basin level and to address stakeholder concerns.

inter-ministerial Nature-Based Solutions (NBS) Working Group to create guidelines for integrating NBS into its hydraulic infrastructure portfolio.

occupational health and safety, and Social Specialist(s) as focal points to manage and supervise the environmental and social aspects of the activities of the three RA.

The World Bank will offer complementary (1) support for program implementation and (2) technical assistance for the PforR, through the following actions aimed at facilitating Program execution:

Support for program implementation

- Collaborate closely with the PCRU to evaluate the progress of Program implementation, assess the attainment of Program results and DLI, and review the execution of the PAP.
- Monitor the capacity of the PCRU and assist the Borrower in enhancing institutional capabilities and addressing implementation challenges, offering assistance in resolving any operational concerns tied to the Program.

- Monitor the performance of fiduciary systems and potential shifts in fiduciary risks associated with the Program.

Technical assistance for PforR implementation

2. The World Bank will provide complementary technical assistance towards Program implementation, although the Borrower has exclusive responsibility for Program implementation and achievement of DLIs.

The technical assistance is contingent upon the presence and availability of additional complementary or supporting BETFs.

Support towards the MMA and DGA for the improvement of a river basin governance structure. Building on the existing institutions at basin level and the existing water rights market, Chile has taken on a new ambitious task of improving its river basin governance structure for the integrated management of water resources.

The SSR has requested World Bank support to improve its delivery model, where they will identify areas for technical capacity strengthening to effectively take on the new tasks.

The World Bank will leverage its knowledge to guide the GoC in defining the content and strategic areas to be included in the Rural WSS Strategic Plan to 2030.

c. Support towards the DOH as it introduces resilience by design approaches in irrigation works. The GoC is seeking support to enhance the adaptability of irrigation works to current water challenges such as climate variability and scarcity. This involves integrating resilience principles, new technologies, flexible management practices, and social-environmental factors. The World Bank will bring in international experience to support the GoC to introduce resilience by design approaches in order to make irrigation systems sustainable and functional in unpredictable events.

d. Support towards the DOH as it incorporates NBS in flood control works.

Thus, the DOH has requested the World Bank support in the creation of an enabling environment for NBS in flood works and will develop a regulatory and institutional framework with a defined portfolio as well as funding for integrated green and gray solutions. The World Bank will provide global learning and technical assistance to combine natural and engineered solutions in order to improve the effectiveness and resilience of Chile·s flood management systems and reduce its vulnerability to extreme events.

As mentioned earlier, the Ministry of Public Works (MOP) plays a vital role in managing water resources and providing essential rural water supply services, irrigation infrastructure, and flood protection. Their responsibilities encompass maintaining, rehabilitating, and developing public infrastructure services and water resources.

The DGA holds responsibility for water use planning, management, and allocation, while the DOH focuses on the planning, design, and construction of hydraulic infrastructure, including dams, canals, and irrigation systems. Working in unison, these two directorates ensure the efficient and sustainable management of water resources in Chile.

Another essential agency, the Ministry of the Environment (MMA), is tasked with the formulation and implementation of policies that promote the sustainable utilization of natural resources, including water. As part of its commitment, the MMA collaborates with other government agencies and stakeholders to monitor compliance with environmental regulations concerning water management. The aim is to ensure the long-term viability and health of Chile's water resources. An important initiative under the leadership of the MMA is the Transición Hídrica Justa (THJ) Committee, which further emphasizes their dedication to the sustainable management of water resources in Chile. The MMA's increasing collaboration with various stakeholders indicates a collective effort towards preserving and safeguarding the country's water resources for future generations.

As the implementation progresses, the OTSJ keeps an eye on territorial work, consistently monitoring and following up on the initiatives.

The SSR is responsible for the provision of technical support to rural water supply providers, including the registration of Rural WSS service providers, the creation of a One Stop Shop rural WSS investment unit (Ventanilla Unica), and the design and implementation of a Rural WSS information system. Law N°20,998 states that the SSR is now responsible to provide this assistance for both rural water and sanitation service providers, which were previously provided by urban water utilities through "agreements" with DOH.