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Program Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 14-Sep-2023 | Report No: PAD5408



BASIC INFORMATION

A. Basic Program Data

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Chile	LATIN AMERICA AND CARIBBEAN	P179117	Chile's Water Transition
Financing Instrument	Estimated Appraisal Date	Estimated Approval Date	Practice Area (Lead)
Program-for-Results Financing (PforR)	28-Sep-2023	13-Dec-2023	Water
Borrower(s)	Implementing Agency		
Ministerio de Hacienda	Ministry of Public Works (MOP), Ministry of Environment (MMA)		

Proposed Program Development Objective(s)

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

COST & FINANCING (US\$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)? No

Is this project Private Capital Enabling (PCE)? No

SUMMARY

Government program Cost	1,872.30
Total Operation Cost	250.00
Total Program Cost	249.38
Other Costs	0.62
Total Financing	250.00
Financing Gap	0.00

FINANCING

Total World Bank Group Financing	250.00
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World Bank Lending

250.00

Decision

B. Introduction and Context

Country Context

- Chile has a population of 19.5 million. The population is highly concentrated in the Santiago Metropolitan Region, which represents 2 percent of the territory but accounts for 40 percent of the population.** It is characterized by a diverse demographic composition, with indigenous peoples making up a significant portion. This demographic complexity contributes to the nation's vibrant cultural tapestry and the ongoing pursuit of social inclusivity. Chile underwent significant social and political changes marked by widespread protests since October 2019, demanding improved social services. As a result of these protests, the Government of Chile (GoC) has embarked in the passing of a new Constitution to replace the old framework from the dictatorship era. A first draft was rejected in a 2022 referendum, leading to a new Constitutional Convention being elected in 2023. This Convention will draft a new proposal based on an Expert's Committee text, followed by a second referendum in December 2023 for acceptance or rejection.
- Chile experienced inclusive growth for over a decade before the COVID-19 pandemic.** Supported by solid macroeconomic management and high commodity prices, Chile's economic growth averaged 4.4 percent annually between 2006 and 2013. It slowed thereafter to an average of 2 percent in the six years prior to the COVID-19 pandemic, as the commodity boom ended, and reforms stalled. Since 2006, the country experienced a substantial decline in poverty, achieving one of the lowest poverty rates in Latin America. The population living on less than USD 6.85 a day dropped from 29.9 percent in 2006 to 7.4 percent in 2019;¹ the population at risk of falling into poverty also declined, and Chile's middle class expanded quickly, rising from 31.0 percent to 57.5 percent of the population.² Moreover, income inequality also declined, even if it remains high in comparison to Organization of Economic Cooperation and Development (OECD) countries. Between 2006 and 2017, the Gini index fell from 47.3 to 44.4 percent. The average Gini coefficient in OECD countries is 33.7.³
- Emergency social protection programs implemented during the COVID-19 pandemic helped cushion income losses of vulnerable families, but these effects are reverting as the economy faces short term challenges.** Poverty (USD 6.85 a day in 2017) increased slightly from 7.4 percent in 2019 to 8 percent in 2020 and dropped sharply to 2.3 percent in 2021 as the GoC laid out significant fiscal aid in mid-2021. After an extraordinary expansion in 2021 however, economic growth decelerated to 2.4 percent in 2022, amid a sharp fiscal and monetary policy contraction implemented to reduce macroeconomic imbalances that accumulated during the COVID-recovery. Economic adjustment is expected to continue in 2023, with real Gross Domestic Product (GDP)

¹ International poverty is measured against income in 2017 purchasing power parity (PPP) US dollars.

² The population at risk of falling into poverty is defined as those with daily per capita income between \$6.85 and \$14 in 2017 PPP. This group declined from 37.6 to 31.1 percent. The middle-class is defined as the population with daily per capita income between \$14 and \$81 in 2017 PPP.

³ World Bank Data, OECD is simple average for 2017 or closest year available.



growth projected to decline 0.4 percent. Due to the end of cash transfers, the economic slowdown and high inflation, poverty is estimated to have increased to 11.4 percent in 2022 and the Gini index to 46. Levels are expected to remain equally high in 2023 without returning to pre-pandemic levels in the medium term. Poverty reduction and sustainable income growth will require boosting job creation, increasing female labor force participation, facilitating access to economic opportunities for the poor and vulnerable, closing gaps in endowments, and making the middle class more resilient to shocks.

- 4. Climate change is posing an additional threat to Chile's economy and particularly women.** According to the Global Climate Risk Index 2021, the country is in the top 25 of countries most vulnerable from extreme weather changes.⁴ Extreme events such as floods and droughts are already having a significant impact on Chile's economy.⁵ Between 1965-2019 four major droughts have been recorded in the country with losses that on average exceeded USD 1 billion. Drought accounted for a 0.69 percent GDP loss in 2019 alone. During the same period, the country also experienced 37 floods with an estimated loss of over USD 5 billion, of which USD 2 billion, equivalent to 0.62 percent of GDP in 2015. Climate models project an increase in frequency of climate change-exacerbated flood (potentially-damaging and life-threatening) and drought hazard levels with a minimal return period of 10 years and 5 years, respectively⁶. For example, rainfall data for Central Chile show deficits of 80 – 90% for the year 2019,⁷ indicative of dire water availability challenges. As recently reported by the National Disaster Prevention and Response Service (SENAPRED) around August 19-22, 2023, central southern Chile was inundated with floods that resulted in a "State of Catastrophe" declaration as it was the second major flood in 8 weeks.⁸ In Chile, women are generally affected more adversely by the impacts of climate change and natural disasters as they tend to have less access to emergency shelters and are more vulnerable to gender-based violence, which often increases in disaster situations.

Sectoral and Institutional Context

- 5. Water availability is scarce in various areas of the country, and the potential impacts of climate change, combined with water quality issues, may reduce the country's ability to meet growing water demands.** The total availability of renewable surface water is estimated at about 48,286 m³ per capita per year with remarkable differences between the north and south. From the central metropolitan region to the north, where most of the country's GDP is generated, water availability per capita⁹ is at mere 800m³ per year. 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. In the Copiapó River basin near the Atacama Desert, water quality is a significant concern in addition to water quantity issues due to elevated contamination from mining activities. Similarly, in the Maipo River basin near Santiago, agricultural practices have led to nutrient runoff and pollution, further compromising water quality and usability.

⁴ Krefl, S./ Eckstein, D./ Melchior, I. (2021): Global Climate Risk Index 2021. Available at: https://reliefweb.int/attachments/b6a6928e-214a-3398-bc01-1460f32bb3ad/Global%20Climate%20Risk%20Index%202021_1.pdf

⁵ Chile (2020). Nationally Determined Contribution: https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Chile%20First/Chile%27s_NDC_2020_english.pdf

⁶ ThinkHazard! <https://thinkhazard.org/en/report/51-chile/DG>

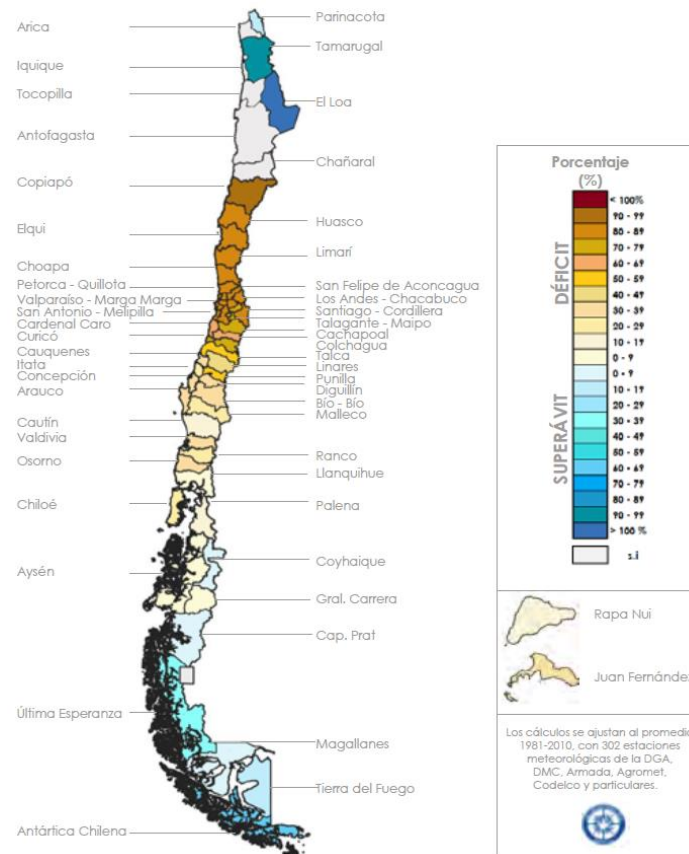
⁷ Long-Term Drought Parches Chile – NASA <https://earthobservatory.nasa.gov/images/145874/long-term-drought-parches-chile>

⁸ *Chile Floods August 2023*

⁹ 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.



Figure 1. Rainfall deficit/surplus in 2019



Source: Villarroel & Vasquez (2020)¹⁰

6. **The current 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). This approach successfully encouraged water-related investments and improved water use efficiency. However, it also gave rise to several water management problems, such as the need to reconcile economic incentives with the protection of 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 and 2022, water management still requires further strengthening of basic water resources management tools to better cope with growing water resource demand and water extremes both floods and droughts (See Annex 2). 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 Annex 2) 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.

7. **Water security is not only impacted by climate change and or shortcomings on the management of water**

¹⁰ Villarroel & Vasquez (2020). Annual Report on the Evolution on Climate in Chile. <https://www.researchgate.net/publication/342716781>



resources but also by challenges in the access, resilience, and sustainability of water related service; disproportionately affecting vulnerable groups and particularly women.

- a. **Water supply and sanitation:** Chile has achieved close to universal access to safe drinking water (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. On the other hand, according to CASEN 2017, 28 percent of rural housings do not have access to safe sanitation solutions such as sewerage and septic tanks, while 18 percent of them access water through unsafe sources (water trucks, river, lake, or other source). 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 Associations (*Sistema de Agua Potable Rural*, APRs), responsible of the provision of these services, frequently face difficulties in maintaining and expanding services particularly to disperse 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 USD 160 million on renting water trucks to supply 400,000 people.
- b. **Irrigation:** Chile has made significant progress in improving the efficiency of water use in agriculture, particularly through the adoption of modern irrigation methods such as drip and microjet systems. The amount of land using these methods has increased from 93,000 hectares in 1997 to around 900,000 hectares today (almost 50 % of the total productive land). 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. However, modernization has often led to a reduction in water returning to rivers and aquifers, with potential negative consequences for other users and ecosystems. Consequently, farmers in lower parts of river basins have lost access to water that was previously available to them. It is important to note that approximately 57 percent of the irrigation systems in the country are inefficient.¹¹ Irrigation projects frequently become isolated solutions, lacking assessments of climate risks and their impact across the basin. As a result, an 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. Ensuring irrigation resilience to climate change is vital for social equity. Female farmers, often reliant on farming as their primary income face greater disaster vulnerability compared to males. Chile has approximately 178,724 women in agriculture (27 percent of the agricultural workforce; 2019).¹² Despite their contributions, women often lack decision-making authority in community water management, even though they play a critical role in water use, conservation, and management.
- c. **Flood and landslide risk management:** Climate change impacts are also contributing to the occurrence of floods and landslides. As previously mentioned in paragraph 4, Chile experienced 37 floods between 1965 and 2019, resulting in significant total losses of around USD 5,000 million. In August 2023, heavy rainfall caused a national emergency, leading to fatalities, property damage, and disruptions in education and water supply systems. Traditional flood control infrastructures have been the GoC's response, nevertheless as urban sprawl increases and population demand more green and recreational areas, there is a growing need to integrate these solutions with natural solutions, that can improve livelihoods and

¹¹ Donoso, G. (2018). *Water Policy in Chile*. New York: Springer

¹² ODEPA, 2019. *Panorama de la Agricultura Chilena*. <https://www.odepa.gob.cl/wp-content/uploads/2019/09/panorama2019Final.pdf>



foster biodiversity conservation. Even though water-related disasters disproportionately disadvantage women, women are underrepresented in planning and implementation of interventions for flood and landslide risk management. Policies and programs rarely consider the different concerns and needs between women and men and there is room for women to have a larger role in decision-making processes, both at the river basin and national levels.

8. **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 services, irrigation infrastructure and flood protection by maintaining, rehabilitating, and developing public infrastructure services and water resources. To achieve these water-related tasks, MOP houses two Directorates, Directorate-General for Water (*Dirección General de Aguas*, DGA) and the Directorate of Hydraulic Works (*Dirección de Obras Hidráulicas*, DOH). 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 Sanitarios 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 Environment is responsible for water quality monitoring and climate change adaptation policies. 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.
9. **Recent reforms have tasked the DGA with growing responsibilities over the management of water resources.** In 1981, the water code assigned the DGA to regulate and oversee water resource allocation, use, and conservation. It granted water use rights, managed infrastructure, enforced regulations, and collected data. In 2022, the reformed water code strengthened the DGA's role, focusing on human consumption, environmental protection, and sustainable management. The DGA can now terminate unused water rights, impose ecological flows, and reduce extractions for source sustainability, 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, promoting a better coordination and data sharing for informed water management strategies.
10. **Similarly, in 2017 the Chile's rural water service provision model transferred responsibilities for rural water supply to the DOH.** The Law 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 water supply and sanitation (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. Under this Law, the SSR is now responsible for both rural water and sanitation,¹³ providing technical assistance and training to rural water service providers, which were previously provided by urban water utilities through "agreement" with DOH. To fulfill this new mandate DOH has been slowly increasing its staff but will still need to develop strong technical capacities. The implementation of the Law continues to

¹³ Before Law 20.998, the legal framework for rural water supply was limited to only one article in the Ministry of Public Works (MOP) Law 382 of 1989. The DOH's Subdirección de Agua was responsible for implementing the Rural Drinking Water Program, with a mandate solely for water. Licenses were renewable and granted for a set period to an organization for water rights, while community organizations (committees and cooperatives) managed and provided water services in concentrated and semi-concentrated areas. 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 20.998, a specific legal framework was established for the integral provision of water, sanitation, and wastewater treatment services. The Subdirección de Servicios Sanitarios Rurales (SSR) was created within the DOH of the MOP with comprehensive responsibilities.



encounter challenges, including the hesitance of APRs to achieve registration and licensing targets. The GoC is therefore facilitating a constructive dialogue to suggest potential enhancements to the legislation.

11. **Finally, the current administration has tasked the Ministry of Environment (MMA) to play a more prominent role in the management of water resources and contribute to a multisectoral perspective on water management.** Chile's MMA has traditionally played a role in the water sector by developing and enforcing environmental regulations (mostly for water quality), conducting environmental impact assessments for water projects, overseeing conservation efforts to protect water ecosystems, and leading the national policy on climate change mitigation and adaptation. Today, to broaden a water infrastructure centric vision, the GoC has requested a more prominent contribution from MMA in water related tasks.
12. **To address these issues and shortcomings, the GoC has designed a transformational USD 1,872.3 million program which places water security as a top priority in the political agenda.** This program, known as *Transición Hídrica Justa*, or Equitable Water Transition (THJ), aims to tackle both institutional and infrastructure gaps, addressing both water resources management challenges and water service provision challenges. On the institutional side, the aim is to advance towards a river basin approach with a strong focus on resilience, ecosystems, and integrated planning. The program works towards strengthening river basin governance, laying the ground for the creation of River Basin Councils to complement the work for the existing Water Users Organizations (See Annex 2) and on equipping the prospective councils with their respective River Basin Strategic Plans (*Plan Estratégico de Recursos Hídrico*, PERH), by first creating voluntary stakeholder working groups (or *Grupos Promotores*). The 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 an Equitable Water Transition (*Comite Transición Hídrica Justa* or THJ Committee). MMA is acting as the technical secretariat of this Committee. The THJ Committee 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.
13. **The GoC has requested World Bank support, through a Program for Results (PforR or Program) operation, to support the implementation of this transformational program.** The THJ program includes many new elements that are novel for Chile—including the creation of a participatory water governance and the needed institutional and legal framework for adequate river basin management and planning, introduction of changes in the rural WSS service delivery scheme, and introduction of Nature Based Solutions (NBS) in the traditionally grey hydraulic infrastructure portfolio. The GoC has requested World Bank support to guide the process, bringing international learning and global best practices to inform the implementation of the program.

PforR Program Scope

14. **The proposed Bank operation will support key activities of the GoC's program.** While addressing climate change-exacerbated droughts, floods, and water scarcity, the Bank Program will focus on: (i) strengthening institutional capacities for an integrated management of water resources and including the implementation of a participatory management approach to reduce conflicts over water; (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. These have been structured in the following Program Results Areas:



15. **Results Area 1. Strengthening institutional capacity for integrated water resources management at the national and basin levels.** To implement IWRM, the GoC has aligned with international best practices and is taking a two-fold approach, intervening at both national and basin levels.
16. **At the national level, the program includes 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 National Water Security Policy that will guide the GoC's vision and work program. Additionally, the program implements a Digital Strategy to strengthen the Public Water Registry. This includes software development, a water quality laboratory, and enhanced infrastructure for water monitoring, databases, models, and applications to bolster information availability, transparency, and support water solutions for flood and drought risks at the territorial level and informed climate-responsive management.
17. **At the basin level, the Program will support the design and piloting of IWRM key principles¹⁴.** The activities include the promotion of stakeholder involvement, integrated planning, and sustainable water use to improve quality and increase availability. Specifically, the Program will: i) support the drafting of a River Basin Council Draft Bill to complement the role of the Water User Organizations (*Organizaciones de Usuarios de Agua*, OUs) for the management of water resources at basin level; ii) based on the above, support the creation of voluntary stakeholder working groups as a first step towards the creation of River Basin Councils to advance in the improvement of basin water governance in pilot basins, iii) support the preparation of the River Basin Strategic Plans in the same selected basins, including the development of basin planning guidelines to better include climate change impacts into planning, iv) compile lessons learned on the process of implementation of River Basin Councils and the planning exercise, allowing for scale up beyond the selected basins.
18. **As part of this Results Area, the Program also seeks to foster gender-equity, partnerships, and community engagement.** To promote female-representation, a Gender Assessment will be conducted by the DGA and MMA to identify barriers and opportunities for female participation in water resource management activities and to identify measures that can be taken to promote and facilitate their participation in the river basin voluntary stakeholder working groups and prospective River Basin Councils. The Program will promote female participation in decision-making through technical trainings, leadership workshops, and awareness campaigns on gender equity in water policies.
19. **Results Area 2. Enhancing the sustainability of rural WSS service providers through institutional strengthening, while continuing to close access gaps and ensuring safe and reliable service provision.** To advance the institutional strengthening of SSR, the budget includes investments in: (i) the development of sanitation diagnostic studies, (ii) the design and implementation of a SSR information system on rural water and sanitation, (iii) the development of the Rural WSS Strategic Plan to 2030, and (iv) the identification, detailed design, and implementation of three sanitation pilots. The development of the Rural WSS Strategic Plan, which will feed off the rural sanitation diagnostics, and will help prioritize investments, offer technological solutions suitable for diverse geographical contexts, and assess management models for rural WSS service providers taking account climate change considerations such as the impact of droughts and floods in WSS services. The design and implementation of an integrated rural WSS information system will allow compiling and reporting data following SDG6 standards for better investment planning, water quality monitoring, and expanding registration of rural service providers and their assets. In the sanitation domain, the Program will conduct limited-scale pilots to test

¹⁴ The focus is 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. The detail of these principles can be found in GWP 200 TAC background paper.



rural wastewater sanitation treatment solutions tailored to different geographic contexts. These sanitation pilots will validate low-cost wastewater treatment technology for rural areas with sewage systems, manageable for APRs, with the aim to incorporate NBS such as vermi-composting filters. The Program will gather disaggregated data on women's involvement in APRs and take steps to boost their participation through activities like technical training, leadership workshops, and gender equity awareness campaigns in water services.

20. **The Program also aims to improve access to rural water by making substantial investments in new water supply systems, aiming to close the last mile gap.** This includes the: (i) design, (ii) installation, (iii) expansion and/or rehabilitation of drinking water services adhering to DOH's Manual for Rural Drinking Water Projects.¹⁵ 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.
21. **Results Area 3. Building climate-resilience through the development of green and gray infrastructure.** This result area aims at supporting the GoC's effort to improve the resilience and impact of hydraulic works. It 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 through the incorporation of nature-based solutions (green 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 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) developing basin-scale urban flooding master plans to identify flood-prone areas and design systems that are flexible enough to accommodate changing climate conditions.
22. **As part of this result area, the program will develop national NBS guidelines and will promote the incorporation of NBS into at least two basin and/or flood management plans.** It will also promote the identification of specific NBS projects and support the incorporation of NBS in at least two project designs. Specifically, the Program will develop urban wetland management plans with a watershed approach in selected river basins.
23. **The PforR actively advances gender equity in the sector and has identified indicators to bridge gender gaps in the traditionally male-dominated hydraulic infrastructure sector.** MOP is committed to advancing gender equality across its institutions and the water workforce, having recently released an Ethical Code emphasizing gender equity and balanced representation. To promote the hiring and retention of female professionals within the Ministry, MOP has conducted internal gender analysis, set objectives for each of its institutions, and established labor and sexual harassment guidelines. They're now working on individual Gender-Equity Policies for each institution, and within the PforR seek international insights through the World Bank's Equal Aqua Platform¹⁶. Focusing specifically on construction employment, MOP acknowledges both the economic and social opportunities within this sector and the existing gender disparity in access to jobs and leadership roles in this male-dominated industry. Between 2019 and 2023, the participation of women in the construction sector rose

¹⁵ Ministerio de Obras Públicas, 2023. Manual de Proyectos Agua Potable Rural: Criterios de Diseño de Agua Potable Rural.

¹⁶ Established by the World Bank's Water Global Practice with support from GWSP and external partners, Equal Aqua aims to promote gender diversity and inclusion in the water sector. EA connects various stakeholders and provides tools to enhance female recruitment, retention, and promotion within water organizations.



from 6 percent to 9 percent.¹⁷ Today, only 7 percent of front-line management positions are occupied by a woman, and only 9.7 percent of board seats are held by female professionals in Chilean construction companies.^{18 19} In the first half of 2023, the average participation of women in jobs generated by public works contracts tendered by the MOP is 9.4 percent.²⁰ The MOP aims to reduce the employment gender gap in construction by implementing various measures for MOP contractors, including (i) mandatory gender awareness training, (ii) sharing successful practices, (iii) providing unconscious bias training, and (iv) developing standard workplace and harassment protocols for contractor adoption. Progress will be measured through the following indicator: *increase in female personnel participation in jobs generated by public works contracts tendered by the MOP*, where the baseline is 9.4 percent and the MOP aims for a 15 percent female workforce in national-level public works contracts.²⁵

24. **Community participation and beneficiary engagement is key to effectively realize the Program development goals of all Results Areas.** Chile's current legislation strongly incorporates citizen participation in public decision-making processes. The MOP and MMA's existing citizen engagement mechanisms have been explored to ensure effective participation and meaningful consultations. 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. Some DLIs include public consultation or stakeholder consultation milestones, such as the development of the National Water Security Policy and drafting of the Rural WSS Strategic Plan to 2030, respectively. To evaluate the effectiveness of Results Area 1, a beneficiary satisfaction survey of the newly created voluntary stakeholder working groups will be conducted at different intervals of project implementation to assess if participants are comfortable with the participatory decision-making processes employed.

25. Table 1 provides an overview of the GoC's program and the Program supported with World Bank financing, and how these align:

¹⁷ INE 2019, 2023

¹⁸ Ministerio de Hacienda, Ministerio de Economía, Fomento y Turismo, Fundación Chile Mujeres, OIT, 2023. IV Reporte de Indicadores de Genero en Empresas en Chile.

¹⁹ To bridge the gender gap in construction, the Chilean women's organization highlights the need for: awareness on harassment, strong sanctions, women-friendly infrastructure, work-life balance, mentoring, best practices, and addressing unconscious biases. [Mujeres en Construcción 2019 – 2023. Visibilizar y potenciar el rol de las mujeres que trabajan en sector de construcción]

²⁰ This is measured through the MOP Employment Viewer. This tool only collects the participation of women in *jobs generated by public works contracts tendered by the MOP*, and does not specify the type of position held by women.



Table 1. Overview of the GoC's program and World Bank supported Program

	Government program	Program supported by the PforR (PforR Program)	Reasons for non-alignment
Objective	To strengthen Chile's water governance, ensuring the fulfillment of population, environmental, and economic needs, while also securing sustainability for current and future generations in today's changing climate. ²¹	Strengthening the Borrower's capacity for water resources management (WRM) and improving water-related services	Full alignment, except for measures that have high environmental and social risks or which fall outside the PforR implementation period.
Duration	2022-2027	2022-2027	The Bank Program will not cover the first year of the government program, given that the GoC has not allocated budget prior to 2023 for results area 1.
Geographic coverage	Nation-wide	Nation-wide	Full alignment.
Results areas	The GoC's program as described under the THJ strategy are reflected in the Program's three Results Areas: RA 1, RA 2, and RA 3	RA 1-3	Full alignment, except for the significant infrastructure projects associated with high social and environmental risks that are not included under the PforR's Results Area 3.
Overall Financing	USD 1,872.3 million	USD 1,626.1 million	The difference in overall financing is attributable to infrastructure works with significant environmental and social risks.

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C. Proposed Program Development Objective(s)

26. The PDO is to **strengthen the Borrower's capacity for water resource management and improve 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 and WSS planning capacity at national level ²²
- PDO 2: Create participatory water governance institutions in selected basins
- PDO 3: Increase access to safely managed rural drinking water services
- PDO 4: Increase number of people at lower risk of climate change exacerbated floods

Program Development Objective(s)

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

²¹ The national water strategy called 'Transición Hídrica Justa' consolidates the different government programs of the DOH, DGA, SSR/DOH under the MOP, and MMA program.

²² PDO 1 refers to (i) the adoption of a Water Security Policy, and (ii) to the approval of a Strategic Rural Water Supply and Sanitation Plan to 2030.



D. Environmental and Social Effects

27. **The Program's draft Environmental and Social Systems Assessment (ESSA) was prepared by the Bank to meet the requirements of PforR Financing Policy and Directive, following the Bank Guidance for the preparation of ESSAs (OPS5.04-GUID.118).** The preparation of the draft ESSA Report was informed by continual consultations with the Bank's counterparts for the Program in MOP and MMA. The draft ESSA Report has been formally consulted on during early September 2023 with a wider range of stakeholders. This consultation was carried out through a series of virtual focus groups to maximize the participation of different sectoral groups from across Chile. The inputs and feedback received made it possible to complete and validate the information used to prepare the draft ESSA Report.
28. **The ESSA found that no significant adverse environmental and social (E&S) impacts are expected as a result of the proposed activities under the Program to strengthen the GoC's capacity for water resource management (WRM) and improve water-related services.** The ESSA defines the typology of activities that cannot be included in the Program due to their expected high adverse impacts on the environment and/or affected people. 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 water resources management approach in selected basins.
29. **The overall environmental risks and potential impacts of the Program are considered Substantial.** This classification responds to the wide range of potential environmental risks and adverse impacts expected from the variety of civil works to be implemented by the MOP. The scale of the expected infrastructure will be small to medium and located in both rural and urban areas. Some of the main potential environmental risks and impacts that may derive from the construction and operation phases of these 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 (v) risks and impacts that could derive from inadequate environmental management during the operation and maintenance of the infrastructures. These risks and impacts are envisaged to be mainly temporary and site-specific and will be mitigated with readily available measures required per national regulations and commonly applied by the MOP.
30. **The overall social risks and potential impacts of the Program are considered Substantial.** Potential social risks and adverse impacts include the following: (i) labor management-related issues, considering management of impacts and community risks associated with labor influx, including sexual exploitation and abuse, and sexual harassment (SEA/SH); (ii) temporary disruption of public services (electricity, water, etc.) 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; (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. These risks will be mitigated through systematic screening for social risk and impacts, according to what is mentioned in the following paragraphs, and 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 (such as the River Basin Councils).

31. **The draft ESSA concluded that the national and sectorial E&S existing systems are adequate to effectively manage the E&S risks and impacts of the Program.** 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. The periodic supervision of the E&S requirements and commitments listed in the environmental licenses is widely regulated and carried out by the Superintendency of the Environment (*Superintendencia del Medio Ambiente*, SMA). Both the SEA and the SMA have sufficient institutional capacity to effectively implement the aforementioned processes. Some small-scale projects/infrastructure considered in the Program do not require the development of E&S instruments under Chile's SEIA. However, following MOP's standard procedures, appropriate E&S instruments are also required and developed for these interventions. In all cases, the MOP includes the corresponding E&S specifications and requirements in the bidding documents for construction, and the periodic supervision of the E&S requirements and commitments is carried out by designated specialists (*Inspectores Fiscales*) from each implementing agency within MOP. The MOP has sufficient institutional capacity to ensure compliance with Chile's existing E&S regulatory framework, with E&S teams embedded in the agencies involved in the Program.
32. **The draft ESSA identified specific actions and recommendations to support the effective management of E&S risks during Program implementation.** These include: (i) an exclusion list, with activities that could not be included in the Program due to their expected significant E&S risks; (ii) criteria for the evaluation of compliance with E&S requirements in the case of activities to be considered for payments for prior results; (iii) recommendations for strengthening the capacity in E&S matters of the SSR; etc. Actions that are reflected in the Program Action Plan (PAP) include, among others: (i) a requirement to designate an environmental specialist (including expertise in occupational health and safety) and a social specialist as focal point for each result area to facilitate the cross-institutional coordination; (ii) specific additional requirements regarding land acquisition, restrictions on land use and involuntary resettlement that could involve the civil works included in the results areas 2 and 3. The ESSA also identified the processes to be included in the Operations Manual.

Grievance Redress

33. Communities and individuals who believe that they are adversely affected as a result of a Bank supported PforR operation, as defined by the applicable policy and procedures, may submit complaints to the existing program grievance mechanism or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address pertinent concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted at any time after



concerns have been brought directly to the Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit <https://accountability.worldbank.org>.

E. Financing

Program Financing (Template)

Source	Amount (US\$, Millions)	% of Total
International Bank for Reconstruction and Development (IBRD)	250.00	100%
Total Program Financing	250.00	

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