
President's report
Proposed loan
Federative Republic of Brazil
Piauí Inclusive and Sustainable Project

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Action: The Executive Board is invited to approve the recommendation contained in paragraph 52.

Technical questions:

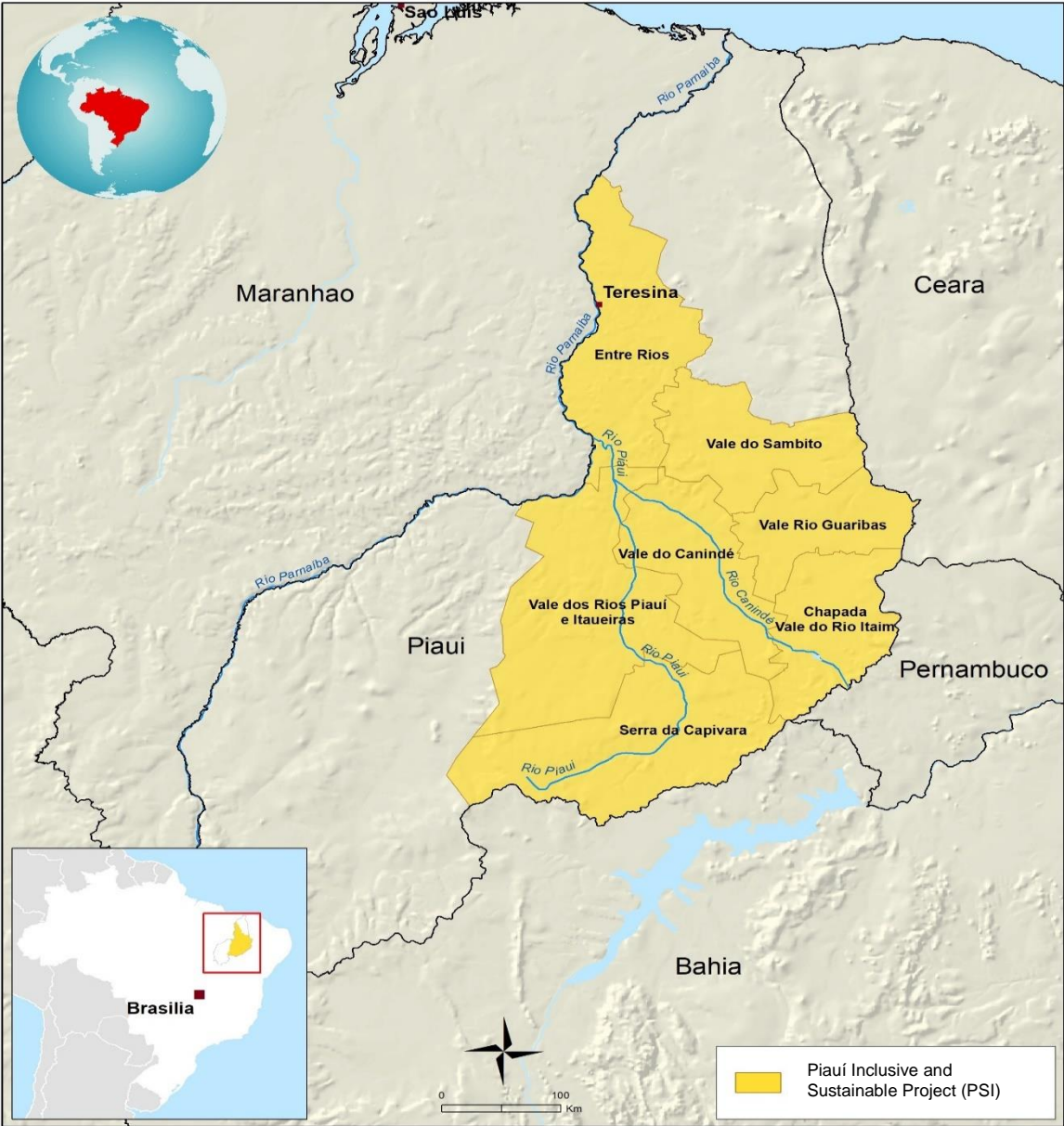
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Map of the project area



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Map compiled by IFAD | 19-05-2021

Financing summary

Initiating institution:	Inter-American Development Bank (IDB)
Borrower:	State of Piauí (with a sovereign guarantee from the Federative Republic of Brazil)
Executing agency:	Secretariat of Planning (SEPLAN)
Total project cost:	US\$147.5 million
Amount of IFAD loan:	US\$18.0 million
Terms of IFAD loan:	Ordinary, with a maturity period of 18 years and a grace period of 3 years at an interest rate equivalent to IFAD's reference rate plus a variable spread
Cofinanciers:	IDB
Amount of cofinancing:	US\$100 million
Terms of cofinancing:	Loan
Contribution of borrower:	US\$29.5 million
Contribution of beneficiaries:	US\$13 million (the beneficiary contribution will not be accounted for in the total project cost, following IDB procedures)
Amount of IFAD climate finance:	US\$13.3 million
Cooperating institution:	IDB

Piauí Inclusive and Sustainable Project

I. Context

A. National context and rationale for IFAD involvement

National context

1. Brazil is an upper-middle-income economy of approximately 211 million people. Despite this, multidimensional inequalities in the country are deep and persistent. Between 2003 and 2012, extreme poverty fell by more than 63 per cent, but this trend has reversed in recent years. Some 52 million Brazilians (24 per cent of the national population) currently live below the poverty line, and 14 million (6.5 per cent), in extreme poverty. Almost half of the poverty in Brazil is concentrated in the country's north-east region, which has less than a third of the national population.
2. At the moment, Brazil is in the throes of a hunger and food and nutritional insecurity crisis, having regressed to the levels of 2004. In 2020, about 117 million Brazilians experienced some degree of food insecurity, with 43.4 million not having enough food and 19 million facing hunger. Less than half the population in the north-east region (49.7 per cent) has full and regular access to quality food, and more than 7.6 million experienced severe food insecurity in 2020.
3. Family farming is strategic in national and state policies to reduce poverty (Sustainable Development Goal [SDG] 1) and promote food and nutrition security (SDG 2), ensuring the livelihoods of the majority of the rural population. The sector employs three-quarters of the agricultural labour force, makes up 77 per cent of farms and is responsible for one third of national agricultural revenue. However, family farmers have little access to human and financial resources, limiting their adaptive capacity and contributing to the increase in rural exodus, poverty and food insecurity.
4. **State of Piauí.** With an area of 251,755 km², Piauí is the third-largest north-eastern state, with a population of 3.2 million, 34.2 per cent of it residing in rural areas. Piauí's annual GDP per capita, US\$2,968, is the second-lowest of all states. Some 43 per cent of the Piauí population lives in poverty and 15 per cent in extreme poverty, ranking it the fifth-worst among Brazilian states in this regard. Poverty in the state is concentrated in rural semi-arid areas. Piauí's food insecurity index is the highest in Brazil, affecting 44 per cent of households.

Special aspects relating to IFAD's corporate mainstreaming priorities

5. In line with Twelfth Replenishment of IFAD's Resources (IFAD12) mainstreaming commitments, the project has been validated as:
 - Including climate finance;
 - Gender transformational;
 - Nutrition-sensitive;
 - Youth-sensitive.
6. **Gender transformational:** The number of households reporting a reduction in the time spent collecting water will be closely monitored as part of the logical framework. Awareness-raising on preventing and addressing gender-based violence is foreseen. Gender parity among project field staff will be sought. IFAD's empowerment indicator will be measured at baseline, midterm and completion, which will enable corrective measures to be adopted, if needed.
7. **Youth-sensitive:** Building on the experience of other IFAD-supported projects in Brazil, the Piauí Inclusive and Sustainable Project (PSI) will apply a holistic perspective to youth inclusion. The number of youth with new employment

opportunities will be monitored through the project's monitoring and evaluation (M&E) system.

8. **Nutrition-sensitive:** The project's entry points for the improvement of nutrition are mostly related to improved access to water for household consumption and agricultural production, social technologies aimed at renewable energy, the harvesting and storage of water for household consumption and the recycling of household greywater for fruit and vegetable production. These technologies play a critical role for women and for improving household resilience and nutrition.
9. **Climate finance:** Brazil's semi-arid region is among the South American regions most vulnerable to climate change. The project is partially counted as climate finance (around 74.5 per cent). Based on the multilateral development banks' methodology for tracking climate change adaptation and mitigation finance, the total IFAD climate finance for this project is calculated at US\$13.3 million.

Rationale for IFAD involvement

10. The PSI is the first loan operation cofinanced by IDB in Brazil. It will apply the IDB's social and environmental standards, which meet IFAD's standards, as confirmed by an IFAD gap analysis.
11. IFAD participation in the project has contributed to a sound design that builds on experiences from the ongoing IFAD-financed Semi-arid Sustainable Development Project in the State of Piauí (PVSA), including its differentiated approaches for priority groups such as youth, women and traditional communities such as Afro-descendants and indigenous peoples, and responds to IFAD's four mainstreaming themes, as it is gender-transformative, youth-inclusive, nutrition-sensitive and climate-responsive.
12. The PSI cofinancing arrangement also extends project outreach and maximizes complementarities between IFAD and IDB by drawing on the comparative advantages of both financiers. It allows IFAD to leverage its resources and contribute to the following IFAD goals: (i) leveraging additional resources to invest in rural people; (ii) increasing outreach; (iii) increasing public investments toward social inclusiveness and sustainability; (iv) reducing administrative design and supervision costs; and (v) leveraging the complementary knowledge and expertise of IFAD and IDB.

B. Lessons learned

13. The project benefits from the following lessons learned from the IDB and IFAD portfolio.
14. **Climate resilience of production systems.** Successful investment plans in the semi-arid region emphasize the resilience of productive systems, including the use of technologies for the storage and efficient use of water; the rehabilitation of vegetation cover and water catchments; soil conservation; and the diversification of agricultural activities and market outlets, complementing them with off-farm activities.
15. **Technical assistance (TA).** The PSI incorporates the following lessons: (i) apart from technical issues, TA should cover management, finance, procurement and contracts, ensuring good management of investment plans by rural organizations; (ii) diversity in the provision of TA through civil society entities (non-governmental organizations – NGOs), private companies and public rural extension agencies; (iii) TA arrangements need contractually agreed goals; and (iv) TA tools must include remote means, such as the use of cell phones, internet and radio.
16. **Social technologies.** IFAD has accumulated a great deal experience with social technologies adapted to family farming, which will be upscaled by the PSI. These include cisterns to harvest rainwater for human consumption and production, eco-stoves to reduce firewood consumption, biodigesters to diversify energy sources,

greywater reuse systems for backyard vegetable irrigation and renewable energy technologies.

17. **Knowledge management (KM), policy dialogue and South-South and Triangular Cooperation.** This is an important comparative advantage of IFAD. The IDB has used many of IFAD's knowledge materials for the design of the PSI. IFAD's significant collaboration with the State of Piauí has led to the production of KM materials relevant for PSI, which are used for policy dialogue. Moreover, IFAD's work in policy dialogue based on knowledge will continue in the project.

II. Project description

A. Objectives, geographical area of intervention and target groups

18. The project objective is to improve the income, food security, access to basic services and adaptation to climate change of the rural population living in the semi-arid region of Piauí. The specific objectives are to: (i) improve access to water for domestic use and production; (ii) improve the environmental conditions of rural families and their surroundings; and (iii) increase the adoption of agricultural technologies, with emphasis on climate change adaptation and mitigation and the integration of small-scale producers in the value chain, especially women, youth and Afro-descendants.
19. The project area covers 138 municipalities in the watersheds of the Piauí and Canindé rivers in Piauí's semi-arid region. PSI will directly benefit 60,000 households (about 210,000 people), 50 per cent of which will be headed by women and 20 per cent by youth, and at least 4,800 households from traditional communities, mainly *quilombola* (Afro-descendants). Some 31,000 households will benefit from group-based investments and TA to improve production and marketing, 28,000 households from access to water and 6,500 households from sanitation improvements.
20. The target population comprises poor family farmers and other poor rural populations, with priority given to women, youth and traditional communities. The selection of participating rural communities will be based on their low Human Development Index, lack of water and sanitation services, agricultural productivity constraints, limited access to TA services and environmental degradation situation.

B. Components, outcomes and activities

21. **Component 1 (water security and rural sanitation)** will finance small infrastructure works at the household and community level to improve the drinking water supply and basic sanitation and reduce disruptions in transportation during the rainy season. It includes: (i) small works for drinking water, including household cisterns to harvest rainwater for human consumption, and simplified water supply systems with household connections and community sources (surface or underground water); (ii) simplified basic sanitation systems for households, including sewage treatment systems, greywater reuse systems for backyard gardens and green pits; and (iii) fords across intermittent watercourses.
22. Building on the increased water availability, **component 2 (adaptation to climate change and environmental recovery)** will: (i) increase productivity, resilience to climate change and the diversification of food and income sources; and (ii) increase the integration of producers' organizations into value chains and access to more remunerative markets. This will be accomplished through productive adaptation plans and business plans, with support from TA services. These investments will be complemented with support for land titling and enrollment in the Rural Environmental Registry (CAR), especially for traditional communities experiencing tenure insecurity. The component will also support the environmental rehabilitation of areas needed for aquifer recharge and the

protection of water sources. This will contribute to the sustainability of water infrastructure and the restoration of environmental services.

23. **Component 3 (institutional strengthening)** will develop the capacities of state secretariats, government agencies and private actors to support sustainable rural development and family farming within the scope of the project. It will be implemented through capacity-building plans for key public institutions and participating community organizations, such as those for the operation and maintenance of water and sanitation infrastructure. It will include studies on technical, environmental and social aspects of the Piauí-Canindé basins and feasibility studies for small dams to be built by potential future projects. Finally, the component will pilot innovative digital solutions for family farming with Agritech and Fintech services. It will also reinforce the work on KM and policy dialogue.

C. Theory of change

24. Rural populations in the project area are disproportionately poor, with 30,000 farm households living in extreme poverty and food and nutritional insecurity (44 per cent of households do not have guaranteed food). Traditional communities are disproportionately affected, with 78 per cent of *quilombola* and 66 per cent of indigenous households living in extreme poverty. The main causes are low levels of diversification and low agricultural productivity and income, with limited connection to markets and high dependence on external income, including social transfer programmes. The scarcity of water for human consumption and productive purposes is one of the main reasons for Piauí's limited economic and social development, which makes these populations vulnerable to drought and other impacts of climate change. Furthermore, poor basic sanitation and energy services and lack of economic and training opportunities have intensified the exodus of young people and created a wide gender gap in access to natural, social and economic resources (for example, 76 per cent of landowners in the project area are men).
25. To overcome these constraints, the PSI will adopt an integrated strategy encompassing the three interconnected components discussed above to achieve its objectives.
26. In the long term, the results should yield a number of impacts that are aligned with the general objective of increasing the rural population's income, access to basic services and adaptation to climate change. The various interventions are expected to contribute to (i) an increase in agricultural income; (ii) a reduction in the incidence of poverty among the beneficiary population; (iii) an increase in the minimum dietary diversity among beneficiary women; and (iv) the reduction of greenhouse gas emissions, mainly through environmental restoration activities.

D. Alignment, ownership and partnerships

27. The project is aligned with the 2030 Agenda of leaving no one behind and the following SDGs in particular: 1 (no poverty), 2 (zero hunger and sustainable agriculture), 5 (gender equality), 6 (clean water and sanitation), 7 (affordable and clean energy) and 13 (climate action). It will contribute to all the mainstreaming themes of IFAD12; to the strategic objectives of the IFAD Strategic Framework 2016-2025: SO1 (increased production), SO2 (increased market participation) and SO3 (increased climate resilience); and to the strategic objectives of the Brazil COSOP 2016–2022, namely to: (i) improve agricultural production, food security and nutrition, and access to markets; (ii) enhance rural development and rural poverty reduction programmes; and (iii) strengthen the capacities of government institutions and farmers' organizations.
28. The project is fully aligned with the state's rural development policies, particularly its Pluriannual Plan 2020–2023 and Water Resources Plan, and ensures state government ownership under Brazil's decentralized federative system. It is also

aligned with several national policies and programs for sustainable rural development and builds on federal projects financed by IFAD (Policy Coordination and Dialogue for Reducing Poverty and Inequalities in Semi-Arid North-east Brazil – PDHC-II) and IDB (Program to Support Agricultural Development in the Northeast – AgroNordeste), both implemented by the Ministry of Agriculture, Livestock and Food Supply (MAPA).

E. Costs, benefits and financing

Project costs

29. Total project costs amount to US\$147.5 million, consisting mainly of costs for components 1 and 2 (40 per cent and 48 per cent, respectively). Project management will take up about 7 per cent of the total costs. The project costs will be financed by a US\$100 million loan from the IDB, a US\$18 million loan from IFAD (Borrowed Resource Access Mechanism [BRAM]) and US\$29.5 million as State of Piauí counterpart financing. In addition, project beneficiaries will provide an in-kind contribution of US\$13 million, which has not been included in the total project costs of the design report, pursuant to IDB procedures.
30. The PSI will be financed proportionally by IFAD, IDB and the State of Piauí across all project components. This will ensure IFAD participation and engagement in the entire project and visibility during implementation.

Table 1

Project costs by component and financier

(Thousands of United States dollars)

Component	IFAD loan		IDB loan		State of Piauí		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
1. Water security and rural sanitation	7 238	40	40 222	40	11 865	40	59 325	40
2. Adaptation to climate change and environmental recovery	8 690	48	48 265	48	14 239	48	71 194	48
3. Institutional strengthening	864	5	4 801	5	1 416	5	7 081	5
Administration, M&E and audit	1 208	7	6 712	7	1 980	7	9 901	7
Total	18 000	100	100 000	100	29 500	100	147 500	100

31. Pursuant to IDB policies, the allocation table is broken down by component. To simplify implementation arrangements, budget monitoring and financial reporting requirements, the allocation table in IFAD's financing agreement will be by component instead of category. Therefore, the table on project costs by expenditure category and financier is not included.

Table 2
Project costs by component and project year (PY)
 (Thousands of United States dollars)

	PY1	PY2	PY3	PY4	PY5	PY6	Total
<i>Component</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>	<i>Amount</i>
1. Water security and rural sanitation	2 950	9 687	16 115	17 490	13 083	-	59 325
2. Adaptation to climate change and environmental recovery	4 144	10 372	17 401	19 503	12 546	7 228	71 194
3. Institutional strengthening	625	1 610	2 066	1 440	720	620	7 080
Administration, M&E and audit	1 301	1 720	1 929	1 929	1 720	1 301	9 901
Total	9 021	23 389	37 511	40 362	28 067	9 150	147 500

Disbursement

32. The State of Piauí will open a designated account in United States dollars, to be used exclusively for resources provided by IFAD. Funds will be transferred in local currency from the designated account to the operational accounts of the State of Piauí. Pari passu will be applied for components cofinanced by IDB and IFAD. The project will submit withdrawal applications to the IDB. IDB will review withdrawal applications to ensure compliance with the provisions of the IFAD financing agreement and provide written confirmation to IFAD that the conditions for disbursement have been met and authorizing payment to proceed.

Summary of benefits and economic analysis

33. The financial analysis showed an economic internal rate of return for the project of 13.66 per cent and a net present value of US\$7.7 million. A comparative cost analysis showed that project investment costs are reasonable and comparable to those of other IDB investments: (i) the project's rural sanitation solutions cost between US\$493 and US\$684 per household; and (ii) land regularization investments cost US\$12.4 per ha.

Exit strategy and sustainability

34. The PSI will upscale the PVSA approach of building the capacity of rural producers' organizations to produce sustainably with a high level of climate resilience, and to offer lasting services to their members. Moreover, component 3 will strengthen state capacities to ensure the delivery of high-quality services to rural populations during and after the project period. Project management will implement a project exit strategy aimed at the sustainability of interventions; this will be underpinned by the work on KM and policy dialogue. The fact that the PSI is cofinanced by IFAD and IDB also means that its methodology, mainstreaming and operations could be scaled up in other projects financed by IDB, which has a significant presence in the country and region.

III. Risks

A. Risks and mitigation measures

35. The integrated project risk matrix was prepared according to IFAD's guidelines. The overall PSI risk is substantial and the residual risk moderate.

Table 3
Risks and mitigation measures

<i>Risk areas</i>	<i>Inherent risk rating</i>	<i>Residual risk rating</i>
Country context	Substantial	Moderate
Sector strategies and policies	High	Moderate
Environment and climate context	High	Moderate
Project scope	Moderate	Low
Institutional capacity for implementation and sustainability	Substantial	Moderate
Financial management	Substantial	Low
Project procurement	Moderate	Low
Environment, social and climate impact	Substantial	Moderate
Stakeholders	Moderate	Low
Overall	Substantial	Moderate

B. Environment and social category

36. IFAD conducted a gap analysis comparing the IDB Environmental and Social Policy Framework (ESPF) with IFAD's 2021 Updated Social, Environmental and Climate Assessment Procedures (SECAP). The analysis confirmed that IFAD's social, environmental and climate change commitments will be adequately met with the use of the ESPF and corresponding performance standards. The project is classified as category B. Anticipated environmental and social impacts that could arise from project implementation are minimal. Adequate monitoring and verification of safeguard compliance is considered throughout the life of the project.

C. Climate risk classification

37. The climate risk is classified as moderate. No information considered significant is lacking, the measures to mitigate risks are identified and the project will include a climate and disaster risk analysis.

D. Debt sustainability

38. The State of Piauí's debt was rated "A" in 2021, based a debt ratio of 56 per cent. In addition, the National Treasury Secretariat of the Ministry of Economy's rating, which covers indebtedness, current savings and liquidity, qualifies the State for a sovereign guarantee by the Federal Government of Brazil. The loan will be guaranteed by the Federal Government of Brazil.

IV. Implementation

A. Organizational framework

Project management and coordination

39. The PSI will have a six-year implementation period. The implementing agency will be the State of Piauí's Secretariat of Planning (SEPLAN), jointly with the Secretariat of Family Agriculture (SAF), the Secretariat of Environment and Water Resources (SEMAR) and the Land Institute of Piauí (INTERPI). One central project management unit (CPMU) and seven field-based territorial project units will be established to ensure a solid presence in the project area.

Financial management, procurement and governance

40. **Financial management.** The financial team from the SEPLAN CPMU is responsible for the project's financial management. The IDB will be appointed as cooperating institution and be responsible for managing and supervising the implementation of IFAD's financing. It will do so based on a letter of appointment that includes details of supervision arrangements such as missions, financial reporting and audits. To simplify implementation arrangements, IFAD will accept the application of IDB financial policies and procedures, which IFAD has reviewed to confirm their alignment with IFAD's fiduciary requirements.

41. **External audit.** The project's annual accounts and financial statements will be audited by a private audit firm in compliance with international auditing standards and IDB policies and procedures. The audited financial statements shall be submitted to IDB and IFAD no later than six months after the end of every fiscal year. The arrangements for financial management, procurement and governance will be described in the project implementation manual and be based on the IDB guidelines for project financial management and procurement (GN-2349-15 for procurement of goods and works, and GN-2350-15 for procurement of consultants). They will also draw on the implementation experience of the PVSA. The procurement plan will identify the items subject to ex ante or ex post procurement review. As per the gap analysis of the IDB guidelines and procedures, the following IFAD procedures will be applied by IDB: (i) contractor and consultant self-certification in all bidding documents and contracts, in compliance with IFAD's Policy on Preventing Fraud and Corruption in its Activities and Operations and its Policy on Preventing and Responding to Sexual Harassment, Sexual Exploitation and Abuse; and (ii) the use of IFAD's contract monitoring tool system to register signed contracts and update their status.

Project target group engagement and feedback and grievance redress

42. The PSI's design included a stakeholder consultation involving 250 people from the entire project area. A project steering committee with operational responsibilities will also be formed, composed of project representatives, the operational teams of SAF, SEMAR and INTERPI and representatives from civil society and beneficiaries. In addition, the project will hold mobilization and consultative workshops and meetings in the field to increase the participation of local actors and beneficiaries.

Grievance redress

43. The grievance mechanism adopted will be that of the IDB, in line with its Environmental and Social Policy Framework (ESPF), which includes the specific grievance mechanism (*Mecanismo de Resolução de Queixas* [MRQ] in IDB terminology in Portuguese). The mechanism will be established during the consultations and maintained during project implementation.

B. Planning, monitoring and evaluation, learning, knowledge management and communications

44. The project planning and M&E system is aligned with the IFAD logical framework. The PVSA baseline and impact studies were critical to informing the preparation of the project logical framework. In order to align with IFAD's mainstreaming criteria, the logical framework includes several IFAD core indicators on outreach, number of persons with new jobs/employment opportunities, percentage of women reporting minimum dietary diversity, households provided with targeted support to improve their nutrition, number of households reporting a significant reduction in the time spent collecting water, tons of CO₂e avoided/sequestered, households reporting the adoption of environmentally sustainable and climate-resilient technologies and IFAD's empowerment indicator. The project will conduct baseline, midterm and impact surveys.

Innovation and scaling up

45. The project has innovation and scaling-up potential in areas such as access to digital technologies in rural extension. The PSI itself represents a scaling-up experience, as it is based on the PVSA implemented by IFAD in the State of Piauí, which will close on 31 December 2022. It is expected to give rise to further cofinanced operations with IDB and other multilaterals operating in Brazil.

C. Implementation plans

Implementation readiness and start-up plans

46. The PVSA substantially increased the implementation readiness of the State of Piauí for the PSI, thus allowing for a smooth and rapid project start-up.

Furthermore, IDB and IFAD will prepare a start-up mission and consider retroactive financing to support the start-up process.

Supervision, midterm review and completion plans

47. Regular supervision and implementation support missions will be undertaken, and a midterm review and a completion mission will be carried out. The IDB will be the appointed cooperating institution for the project, responsible for administrating the IFAD loan based on the IDB-IFAD cooperation agreement.
48. As per the cooperation agreement, IDB will coordinate the plans and terms of reference for supervision and other missions with IFAD in advance, so that IFAD can contribute to mission preparations and execution. During supervision missions, IFAD will cover topics that respond to project needs, in coordination with IDB and the State of Piauí. In recognition of IFAD's high-quality supervision and implementation support, IDB and IFAD will collaborate closely to make good use of IFAD's knowledge and experience.

V. Legal instruments and authority

49. A financing agreement between the State of Piauí and IFAD and a guarantee agreement between the Federative Republic of Brazil and IFAD will constitute the legal instruments for extending the proposed financing to the borrower. A copy of the negotiated financing agreement will be made available prior to the session.
50. The State of Piauí is empowered under its laws to receive financing from IFAD.
51. I am satisfied that the proposed financing will comply with the Agreement Establishing IFAD and the Policies and Criteria for IFAD Financing.

VI. Recommendation

52. I recommend that the Executive Board approve the proposed financing in terms of the following resolution:

RESOLVED: that the Fund shall provide a loan on ordinary terms to the State of Piauí with a sovereign guarantee from the Federative Republic of Brazil in an amount of eighteen million United States dollars (US\$18,000,000) and upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented herein.

Gilbert F. Hougbo
President

Negotiated financing agreement

(Will be made available prior to the session)

Logical framework

Results Hierarchy	Indicators				Means of Verification			Assumptions
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outreach	1 Persons receiving services promoted or supported by the project				Project M&E System	Semi-annual	Project M&E Unit	
	Males - Males	0	12000	30000				
	Females - Females	0	12000	30000				
	Young - Young people	0	4800	12000				
	Indigenous people - Indigenous people	0	1920	4800				
	Total number of persons receiving services - Number of people	0	24000	60000				
	1.a Corresponding number of households reached				Project M&E system	Semi-annual	Project M&E Unit	
Households - Households	0	24000	60000					
1.b Estimated corresponding total number of households members				Project M&E system	Semi-annual	Project M&E Unit		
Household members - Number of people	0	84000	210000					
Project Goal Mejorar los ingresos, el acceso a los servicios básicos y la adaptación al cambio climático de la población rural	Índice de Pobreza Multidimensional reducido (Headcount ajustado)				Impact Survey	Baseline, Mid-Term, and End of Project	Independent consultancy firm	Continuity of public policies and programs that support rural poverty reduction
	IPM - Percentage (%)	39	35	29				
Development Objective Mejorar los ingresos, las capacidades de resiliencia y la seguridad alimentaria y nutricional de las familias alvos y poblaciones vulnerables.	1.2.8 Women reporting minimum dietary diversity (MDDW)				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	Maintenance of policies and incentives that favor agroecological productive transformation; Technical assistance responds to the needs of the market and the Project; Covid19's economic crisis shows improvement
	Women (%) - Percentage (%)	0	50	50				
	Women (number) - Females	0	1800	7500				
	Households (%) - Percentage (%)	0	15	25				
	Households (number) - Households	0	3600	15000				
	Household members - Number of people	0	12600	52500				
	Women-headed households - Households	0	1800	7500				
	1E.2.1 Individuals demonstrating an improvement in empowerment				Outcome (COI)/ Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Total persons - Percentage (%)	0	40	40				
	Total persons - Number of people	0	9600	24000				
	Females - Percentage (%)	0	70	70				
	Females - Females	0	6720	16800				
	Males - Percentage (%)	0	30	30				
	Males - Males	0	2880	7200				
	Ingreso productivo anual de los agricultores familiares aumentado				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Ingreso productor (R\$/ año / productor) - Number	6205	8000	11855				
	Ingreso mujeres (R\$/ año / productor) - Number	2774	4000	7128				
	Ingreso productor - comunidades tradicionales (R\$/ año / productor) - Number	4376	5500	6474				
	SF.2.1 Households satisfied with project-supported services				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Household members - Number of people	0	63000	157500				
Households (%) - Percentage (%)	0	75	75					
Households (number) - Households	0	18000	45000					
Outcome 1. Acceso al agua para el consumo humano y productivo mejorado	Porcentaje de agricultores familiares que utilizaron riego				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Percentage (%)	20.8	22	25.7				
	Tiempo dedicado a la recolección de agua por hogar				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Tiempo - Horas / persona / mês - Number	3	2	1				
	3.2.3 Households reporting a significant reduction in the time spent for collecting water or fuel				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Households	0	3668	9170				
	Households - Percentage (%)	0	15	15				
	Total household members - Number of people	0	12838	32095				
	Women-headed households - Households	0	1834	4585				
	Cantidad de agua consumida por hogar				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Cantidad - Litros / hogar / día - Number	134	246	280				
	Hogares con acceso mejorado al agua potable y saneamiento				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Number	0	9496	23740				
	Se mantiene tasa de mora en pago de tarifa en sistemas comunitarios de abastecimiento de agua				SISAR Piauí / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Tasa de mora - Percentage (%)	3.8	3.8	3.8				

Output 1.1. Abastecimiento de agua para consumo humano	Familias apoyadas con tecnologías sociales para la recolección, almacenamiento y reutilización de agua				M&E system reports	Semi-annual	Project M&E Unit	La infraestructura básica y social continúa siendo proporcionada por el gobierno.
	Households - Number	0	13000	27740				
Output 1.2. Abastecimiento de agua para consumo humano	Familias apoyadas con tecnologías de saneamiento				M&E system reports	Semi-annual	Project M&E Unit	
	Households - Number	0	3170	6520				
Output 1.3. Movilidad rural	Número de pasos vados para el tráfico sobre cursos de agua construidas				M&E system reports	Semi-annual	Project M&E Unit	
	Pasos vados - Number	0	30	60				
Outcome 2. Mejorar las condiciones ambientales de las familias rurales y su entorno	Superficie de las cuencas de Piauí y Canindé con cobertura forestal recuperada				M&E system and SEMAR	Mid-Term and End of Project	Project M&E Unit / Independent consultancy firm	
	Hectares - Number	10138079	10100000	10013961				
	Percentage of agricultores que reportaron que el espejo de agua tenía un bosque ribereño completamente ausente				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Percentage (%)	20	17	11				
	Superficie de las propiedades rurales registradas en el CAR				M&E system and SEMAR	Semi-annual	Project M&E Unit / Independent consultancy firm	
	Hectares - Number	0	22000	55000				
	SF.2.2 Households reporting they can influence decision-making of local authorities and project-supported service providers				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Household members - Number of people	0	63000	157500				
	Households (%) - Percentage (%)	0	75	75				
	Households (number) - Households	0	18000	45000				
Output 2.1 Planes de Adaptación Productiva (PAD) y Planos de Negocio (PN)	1.1.4 Persons trained in production practices and/or technologies				M&E system reports	Semi-annual	Project M&E Unit	
	Total number of persons trained by the project - Number of people	0	9230	9230				
	Men trained in crop - Males	0	4615	4615				
	Women trained in crop - Females	0	4615	4615				
	Young people trained in crop - Young people	0	1846	1846				
	Total persons trained in crop - Number of people	0	9230	9230				
	Agricultores familiares beneficiados por planes de negocios con cooperativas				M&E system reports	Semi-annual	Project M&E Unit	
	Agricultores - Number	0	750	1050				
	1.1.8 Households provided with targeted support to improve their nutrition				M&E system reports	Semi-annual	Project M&E Unit	
	Total persons participating - Number of people	0	4112	10280				
	Males - Males	0	2056	5140				
	Females - Females	0	2056	5140				
	Households - Households	0	4112	10280				
	Household members benefitted - Number of people	0	14392	35980				
	Young - Young people	0	822	2056				
Output 2.2 Planes de Recuperación Ambiental	Diagnóstico y definición de áreas prioritarias, para bosques ribereños y de cabecera realizados				M&E system reports	Semi-annual	Project M&E Unit	
	Diagnóstico - Number	0	2	2				
	Planes de recuperación ambiental para áreas de 5ha de bosques maduros de los ríos Piauí y Canindé y sus afluentes elaborados, implementados y mantenidos				M&E system reports	Semi-annual	Project M&E Unit	
	Planes - Number	0	70	100				
	Planes de Recuperación Ambiental para áreas de 3ha en cabeceras de las cuencas de los ríos Piauí y Canindé elaborados, implementados y mantenidos				M&E system reports	Semi-annual	Project M&E Unit	
	Planes - Number	0	25	33				
	Número de técnicos, productores, jóvenes rurales y docentes que participaron en acciones de educación ambiental				M&E system reports	Semi-annual	Project M&E Unit	
	Technical - Number	0	2925	5925				
	Número de técnicos y productores que participaron de intercambios				M&E system reports	Semi-annual	Project M&E Unit	
	Technical - Number	0	1145	2330				
Output 2.3. Titulación de tierras y regularización ambiental	1.1.1 Number of beneficiaries gaining increased secure access to land				M&E system reports	Semi-annual	Project M&E Unit	
	Males - Males	0	939	3130				
	Females - Females	0	939	3130				
	Young - Young people	0	94	313				
	Total number of beneficiaries with increased secure access to land - Number of people	0	1878	6260				
	Porcentaje de propiedades rurales beneficiadas anualmente con regularización de tierras por el Proyecto con CAR realizada y/o rectificada				M&E system reports	Semi-annual	Project M&E Unit	
	Propiedades rurales - Percentage (%)	0	90	100				
Outcome 3. Aumentar la adopción de tecnologías agropecuarias, incluidas las tecnologías de	2.2.1 Persons with new jobs/employment opportunities				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Males - Males	0	369	923				
	Females - Females	0	369	923				
	Young - Young people	0	148	369				

adaptación y mitigación del cambio climático, y la integración de los productores en las cadenas de valor	Total number of persons with new jobs/employment opportunities - Number of people	0	738	1846				políticas y programas públicos en el Estado de Piauí. Los proveedores de servicios proporcionan bienes y servicios de calidad.
	3.2.2 Households reporting adoption of environmentally sustainable and climate-resilient technologies and practices				Outcome (COI) / Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Total number of household members - Number of people	0	6720	28770				
	Households - Percentage (%)	0	3.2	13.7				
	Women-headed households - Households	0	960	4110				
	Households - Households	0	1920	8220				
	Porcentaje de agricultores familiares que participaron en asociaciones productivas o cooperativas				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Percentage (%)	27.7	40	73.4				
	Porcentaje de agricultores familiares que vendieron su producción en los mercados				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Households - Percentage (%)	72.3	80	86.7				
	Porcentaje de mujeres que ocuparon cargos directivos en organizaciones rurales				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm	
	Females - Percentage (%)	31.2	40	50				
	Agricultores con acceso mejorado a inversiones y servicios agrícolas				M&E system reports	Semi-annual	Project M&E Unit	
	Households - Number	0	4112	10280				
Instituciones con capacidades de gestión y tecnología digital reforzadas				M&E system reports	Annual	Project M&E Unit		
Instituciones - Number	0	2	4					
Incremento de la proporción de propietarios en el área de proyecto que se siente segura en sus derechos de propiedad				Impact Survey	Baseline, Mid-Term, and End of Project	Project M&E Unit / Independent consultancy firm		
Proprietarios - Percentage (%)	63.2	70	84.8					
Output 3.1 Planes de fortalecimiento de capacidades	Planes de fortalecimiento de capacidad institucional formulados				M&E system reports	Semi-annual	Project M&E Unit	
	Planes - Number	0	5	5				
	Planes de fortalecimiento de capacidad institucional ejecutados				M&E system reports	Semi-annual	Project M&E Unit	
	Planes - Number	0	5	5				
	Sistemas de monitoreo y evaluación elaborados				M&E system reports	Semi-annual	Project M&E Unit	
	Sistemas - Number	0	4	4				
Equipos ejecutores y co-ejecutores capacitados en el uso de sistemas de monitoreo y evaluación y ejecución de las actividades para los fines del Proyecto				M&E system reports	Semi-annual	Project M&E Unit		
Equipos - Number	0	4	4					
Output 3.2 Estudios y proyectos en la cuenca Piauí-Canindé	Estudios técnicos y socioambientales para el desarrollo de la cuenca, subcuencas y de obras de represas elaborados				M&E system reports	Semi-annual	Project M&E Unit	
	Estudios - Number	0	2	5				
	Planes de gestión de las cuencas Canindé/Piauí elaborados e implementados				M&E system reports	Semi-annual	Project M&E Unit	
Planes - Number	0	0	3					
Output 3.3 Apoyo a la innovación	Número de diagnósticos sobre la demanda y oferta de servicios de innovación tecnológica concluidos				M&E system reports	Semi-annual	Project M&E Unit	
	Diagnósticos - Number	0	2	2				
	Número de cooperativas apoyadas con acciones de innovación				M&E system reports	Semi-annual	Project M&E Unit	
Cooperativas - Number	0	2	5					
Outcome	3.2.1 Tons of Greenhouse gas emissions (tCO2e) avoided and/or sequestered				Impact Survey - Carbon-Balance Tool (EX-ACT)	Ex ante, mid term and final Carbon-Balance Tool (EX-ACT)	Independent consultancy firm	
	Hectares of land - Area (ha)	0	0	424				
	tCO2e/20 years - Number	0	0	-99805				
	tCO2e/ha - Number	0	0	-4990				
tCO2e/ha/year - Number	0	0	-11.77					

Integrated project risk matrix

Risk Category / Subcategory	Inherent risk	Residual risk
Country Context	Substantial	Moderate
Political Commitment	Substantial	Moderate
Governance	Moderate	Low
Macroeconomic	Substantial	Moderate
Fragility and Security	Substantial	Moderate
Sector Strategies and Policies	High	Moderate
Policy alignment	High	Moderate
Policy Development and Implementation	Substantial	Moderate
Environment and Climate Context	High	Moderate
Project vulnerability to environmental conditions	High	Moderate
Project vulnerability to climate change impacts	High	Moderate
Project Scope	Moderate	Low
Project Relevance		No risk envisaged - not applicable
Technical Soundness	Moderate	Low
Institutional Capacity for Implementation and Sustainability	Substantial	Moderate
Implementation Arrangements	Substantial	Moderate
Monitoring and Evaluation Arrangements	Moderate	Low
Project Financial Management	Substantial	Low
Project Organization and Staffing	Substantial	Moderate
Project Budgeting	Substantial	Moderate
Project Funds Flow/Disbursement Arrangements	Substantial	Moderate
Project Internal Controls	Substantial	Low
Project Accounting and Financial Reporting	Moderate	Low
Project External Audit	Low	Low
Project Procurement	Moderate	Low
Legal and Regulatory Framework	Moderate	Low
Accountability and Transparency	Low	Low
Capability in Public Procurement	Moderate	Moderate
Public Procurement Processes	Moderate	Low
Environment, Social and Climate Impact	Substantial	Moderate
Biodiversity Conservation	Moderate	Low

Risk Category / Subcategory	Inherent risk	Residual risk
Resource Efficiency and Pollution Prevention	Substantial	Moderate
Cultural Heritage		No risk envisaged - not applicable
Indigenous People	Low	Low
Labour and Working Conditions	Moderate	Low
Community Health and Safety		No risk envisaged - not applicable
Physical and Economic Resettlement		No risk envisaged - not applicable
Greenhouse Gas Emissions	Substantial	Moderate
Vulnerability of target populations and ecosystems to climate variability and hazards	High	Substantial
Stakeholders	Moderate	Low
Stakeholder Engagement/Coordination	Low	Low
Stakeholder Grievances	Moderate	Low
Overall	Substantial	Moderate
Country Context	Substantial	Moderate
Political Commitment	Substantial	Moderate
Risk: Changes in political authorities at the state and national levels are relevant and could alter the executing agency's priorities and produce changes in the technical teams, delaying the Project implementation. Although PSI enjoys full political support from the State Government's current leadership, the result of the upcoming 2022's elections may slightly change the scenario concerning the political commitment to the Project.	Substantial	Moderate
Mitigations: The project responds directly to the state government's priorities and interests. It aligns with programs and public policies that are not expected to change in the medium term. The PSI also fits the Federal Government's priorities according to the criteria established for external financing, as evidenced by the high rating of the Project by the Commission for External Financing (COFIEX). The risks will be mitigated through the involvement of several other partners in PSI development, including public state agencies, civil society, private sector. Also, IDB and IFAD		

will keep a continuous dialogue with state and federal counterparts to inform new authorities of Project characteristics and benefits, as well as keep participating in policy dialogue platforms such as the Forum of State Secretaries and Northeast Consortium. IFAD Office in Salvador will play a critical role in monitoring changing political scenario.		
Governance	Moderate	Low
Risk:		
Weakening of state government secretariats aimed at rural development, family farming, environmental conservation, and poverty reduction due to increased political power of the agribusiness sectors (monoculture for export) may interfere in the allocation of resources to rural development. Nevertheless, this risk is considered low to moderate, as the country and state institutions are solid and exhibit a long-term commitment to family farming and poverty alleviation policies targeting the poorest and most vulnerable rural populations.	Moderate	Low
Mitigations:		
The project will adopt a multisectoral approach to tackle the main problems affecting the rural populations of the Project area. PSI will strengthen, integrate and develop government programs and policies related to sustainable rural development. Besides, the Project will include a capacity-building component to help strengthen key rural development institutions and secretariats at the state level.		
Macroeconomic	Substantial	Moderate
Risk:		
i) Unstable political and economic environment with trends of increase in inflation, unemployment, decreasing/low GDP growth, and deterioration of public accounts. ii) If the fiscal situation worsens due to the lingering economic effects of COVID-19 and unfavorable developments in the international and national context, this could undermine the state government's capacity to mobilize and allocate sufficient funding to the Project and could delay implementation. iii) If the Brazilian Real appreciates compared to the Dollar, the Program costs could increase (in Dollars), and the budget would be insufficient to execute the Project activities as planned. iv) The	Substantial	Moderate

<p>effects of the Ukraine war in Brazil, and in Piauí as a consequence, are the increase in costs of fertilizers imported and in commodities prices, particularly corn, wheat, oil and sunflower oil, which could affect general food prices. The restrictions of the supply – or just the possibility of lower availability – already boosted prices and worsen the national inflation rates.</p>		
<p>Mitigations:</p> <p>i) Close monitoring of the macroeconomic situation and policies. ii) Consistent political dialogue at federal and state levels. iii) Elaborating PSI action plans, considering the most likely future scenarios, and adjusting priority actions and Project disbursement according to contextual changes whenever necessary. iv) Regarding the impacts of the war in Ukraine, the Project will partner with procurement consultants and technical assistance (TA) teams to map a wider network of suppliers, how their peers are handling the crisis, and support innovative solutions to manage the impacts of the war in supply availability and costs. Besides, the productive investment plans that will benefit producers (ERP, PAPS and BP) will take current and future inflation macroeconomic tendencies into consideration in their economic feasibility analysis.</p>		
<p>Fragility and Security</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>The economic fragility in the past years, coupled with the drastic effects of a pandemic of undetermined duration, led to high unemployment rates and an exponential increase in the population living below the poverty line in Brazil. That figure, which was 9.5 million people in August 2020, tripled to more than 27 million in February 2021. With the upsurge of the pandemic, the number of people in food insecurity also considerably increased, especially in the North and Northeast regions. In 2020, food and nutrition insecurity affected 71,9% of households in the Northeast region. These trends, along with the political tensions that precede the 2022 elections may lead to a serious situation of institutional insecurity.</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p>		

PSI's integrated resilience approach shall help address various climate, economic and environmental shocks. Besides activities aimed at improving family farmers' ability to recover from hazards, Project interventions aim to assure food and nutritional security, poverty reduction, and minimization of target groups' economic losses to external shocks. The PSI has in its general objective food security.		
Sector Strategies and Policies	High	Moderate
Policy alignment	High	Moderate
Risk:		
There is a risk that possible public policies are not sufficiently aligned with IFAD and IDB's priorities (especially regarding access to land, environment, climate, gender, diversity, youth, food and nutrition), potentially limiting the scope of PSI's development objectives and operation. In addition, there may be discrepancies between state and federal political priorities, which may also affect the Project.	High	Moderate
Mitigations:		
The Project design is fully aligned with Piauí's Pluriannual Plan (PPA) for 2020-2023, Piauí's Water Resources Plan, Pillars of Growth and Social Inclusion Project, and Pro Piauí. PSI will be implemented at the state level and in an area of poverty prevalence, where the water issue is a consensual priority, reducing the risks of misalignment. At the federal level, PSI is aligned with several policies and programs, such as Brazil's Determined National Contribution (NDC) objective of establishing sustainable agriculture that is resilient to climate change; National Adaptation Strategy (ENAA), and National Adaptation Plan to Climate Change (PNA); Cisterns Program, National Rural Environmental Registry System (SICAR), National Technical Assistance and Rural Extension Policy for Family Farming and Agrarian Reform (PNATER), PAA, PNAE, and PRONAF. The exceptionally high rating of the project by the Commission for External Financing (COFIEX) illustrates the sound alignment with federal policies. IFAD and IDB will continue dialoguing with the federal agencies to ensure their awareness of the project objectives and activities.		
Policy Development and Implementation	Substantial	Moderate

<p>Risk:</p> <p>The risk that strategies and policies aimed at the rural and agricultural sector are not based on solid evidence, do not accurately represent rural organizations' views and are inadequately supported by a regulatory framework, affecting the Project implementation and the achievement of its goals.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>i) The Project will build a solid basis for collaboration with research institutions and civil society partners with strong experience regarding the semiarid context, besides counting on the capacity and experience of a strong M&E system to ensure that empirical data and information can guide its implementation. ii) PSI will be based on a bottom-up rural development approach, facilitating beneficiary participation in Project implementation and building the capacity of poor rural people and their organizations. iii) The Project's Steering Committee will serve as a participatory mechanism, ensuring that there is broad representation in the implementation of the Project. iv) IDB and IFAD will ensure PSI receives constant feedback on innovative approaches, good practices, and policies from other projects in their portfolios. v) The partnership between IFAD and the IDB, both international bodies with a state and federal impact, will help to minimize the risks. vi) In addition, IFAD grants, such as DAKI-Semiárido Vivo, can help and support the preparation for Project implementation. vii) Finally, IFAD continues to support policy dialogue instruments, thus ensuring the effective implementation of the PSI.</p>		
Environment and Climate Context	High	Moderate
Project vulnerability to environmental conditions	High	Moderate
<p>Risk:</p> <p>The Project area faces long-term degradation of Caatinga's ecological and productive functions, with 33% of the Piauí biome (84.000 km²) affected by moderate desertification processes. Degraded riverside areas also affect the hydrological functioning of the basin. This context constitutes a risk to the productivity of the agricultural activities supported by the Project.</p>	High	Moderate
<p>Mitigations:</p>		

<p>i) The Project's interventions include the environmental recovery of priority protection areas (riparian forests) to improve hydrological services in the Piauí and Canindé watersheds, co-benefits for biological corridors, environmental regularization initiatives, investments in basic rural sanitation, and institutional strengthening in territorial environmental management. ii) The PSI productive component will also contribute to reducing environmental vulnerability by supporting family farmers and communities with technical assistance to adopt agroecological and resilient productive practices. (i.e. water access technologies, such as household cisterns, greywater reuse systems, solar powered desalination units, among others) iii) To fulfill the requirements of IDB's Environmental and Social Policy Framework and the provisions of the Performance Standards (PS), the executing entity will implement an Environmental and Social Management System for the PSI and has already elaborated and disclosed a preliminary Strategic Environmental and Social Impact Assessment.</p>		
<p>Project vulnerability to climate change impacts</p>	<p>High</p>	<p>Moderate</p>
<p>Risk:</p> <p>Almost all of the project area belongs to the semiarid region. Therefore, it is constantly subject to climatic risks and water scarcity, both due to the lack of precipitations and high evapotranspiration. The increase in temperature and the variability of rainfall patterns with more frequent, prolonged, and severe droughts present a risk of significant impacts on production systems. These climate risks may reduce productivity, and family farmers' income, resulting in deterioration of target population livelihoods and ecosystems. The need for water for crops and animals is increasing in a context already characterized by water scarcity and where access to water for human consumption still has ample gaps.</p>	<p>High</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>Project will invest in climate change adaptation, environmental recovery, and the conservation of areas essential for the hydrological functioning of the Piauí and Canindé watershed, social technologies for capturing, storing, and recycling water,</p>		

and supporting the adoption of agroecological practices to increase productive systems' resilience.		
Project Scope	Moderate	Low
Project Relevance		No risk envisaged - not applicable
No relevant risk for the project's objectives and interventions being not fully aligned with IFAD's or the country's development priorities. The Project corresponds to the central challenges of production and access to services for the rural poor, and the design is also aligned with state policies and priorities. Besides, PSI has a participatory approach that will allow ownership, relevance, and alignment with target groups' needs and priorities		
Technical Soundness	Moderate	Low
Risk: : There is a low to moderate technical risk in implementation due to the current capacities of state-level public institutions as Project activities require strong coordination and integrated planning.	Moderate	Low
Mitigations: i) Designing the Project based on lessons learned from PVSA and IDB projects in the Brazilian Northeast (1633/OC-BR, 5440/OC-BR, 4723/OC-BR, 4732/OC-BR, ATN/LC-17432-BR). PSI is highly robust also based on IFAD's and IDB's solid technical experience. ii) Establishing effective management and coordination structure. iii) The Project includes an institutional strengthening component of SEMAR, SAF, and EMATER. iv) Building alliances with third-party suppliers of technical assistance to producers and communities, which are very common in IFAD projects in Brazil and have achieved excellent results in innovation and technical quality.		
Institutional Capacity for Implementation and Sustainability	Substantial	Moderate
Implementation Arrangements	Substantial	Moderate
Risk: i) The execution of the Project by several government entities and organizations of rural producers (who manage the beneficiaries' investment plans) is the main risk identified. If	Substantial	Moderate

<p>there is no adequate coordination between the key institutions, execution can be delayed and the technical quality of the Project products affected. ii) There is also a risk that the capacities of the project executing agency are insufficient for adequate and effective Project management, generating delays and lower execution quality. iii) For some jobs, such as technical assistance and provision of specialized services, as in the project's water component, there is a risk of a lack of qualified personnel in the state. iv) Lack of clarity in institutional responsibilities could delay the execution of water and sanitation works and compromise their proper operation and maintenance.</p>		
<p>Mitigations:</p> <p>i) Establishing a Central Project Management Unit (CPMU) in SEPLAN, which will be responsible for the general Project coordination and management. This CPMU will coordinate planning, financial management and implementation, and will report on the technical and financial evolution of the Project. Each executing institution with signed investment plans shall continuously monitor their implementation by rural organizations. ii) Establishing a Coordination Committee made up of representatives from the CPMU and the operational teams of SAF, SEMAR, and INTERPI that will meet monthly to coordinate Project communication activities, the planning of community actions, review the progress in the Annual Operational Plan, review environmental and social aspects, among other themes. iii) The institutional strengthening of component 3 will offer training and capacity building and, when necessary, the PSI may bring in technical personnel from other states, as the PVSA did. IFAD grant projects, such as DAKI-Semiárido Vivo, will also provide training to teams, mainly TA, for climate change adaptation practices and approaches. iv) Cooperation agreements will be signed with each municipality in which the water and sanitation type of works; training and technical assistance will be provided to community organizations and beneficiary families to ensure adequate management, operation, and maintenance of the project investments.</p>		
<p>Monitoring and Evaluation Arrangements</p>	<p>Moderate</p>	<p>Low</p>
<p>Risk:</p>	<p>Moderate</p>	<p>Low</p>

<p>The risk of poor M&E performance is considered low because PVSA has built a strong M&E capacity, based on which PSI will improve and develop the necessary systems. i) As the execution of the Project will take place in a decentralized manner (by several entities of the public administration), the task of monitoring physical progress will be more complex, which may result in information loss. ii) The Project may have difficulties in composing a specialized M&E team to work at the CPMU, as well as in the PMUs of the co-executors, both in the state's professional staff and in hiring specialist consultants.</p>		
<p>Mitigations:</p> <p>i) IDB has prepared a robust M&E Plan, which defines key aspects and methodologies for monitoring and evaluating PSI results. This plan will be updated by the M&E team at the beginning of the PSI execution, to include the monitoring arrangement to guarantee the fluidity of information between the bodies responsible for implementing the Project and define each professional's roles. ii) Although each co-executing entity will be responsible for monitoring its activities, SEPLAN will consolidate the M&E data of the project as a whole. iii) The SIGMA, a system used by the SAF team for the World Bank Project (Pillars of Growth - Pilares do Crescimento), will be used, adapted, and made available online for the co-executors to manage information. There is a budget planned for the system improvement and this will be an important legacy for the state. iv) Strengthening the M&E team's capacities in the context of developing the institutional capacities of key state entities.</p>		
<p>Project Financial Management</p>	<p>Substantial</p>	<p>Low</p>
<p>Project Organization and Staffing</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>Financial team from the Central Project Management Unit (CPMU) with limited experience in the financial management of IFAD and IDB funded projects, resulting in limited ability to fulfil the functional needs of the Project</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>Provide training of the financial team, with the support of IFAD and IDB, in management processes for the use and reporting of external funds</p>		

Project Budgeting	Substantial	Moderate
<p>Risk:</p> <p>SEPLAN is the state entity that leads the policies related to external financing with multilateral agencies and will be the main executing entity. SEPLAN may have little fiscal margin to provide counterpart budget and funds on time.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>IFAD and IDB teams will ensure a strong commitment of SEPLAN to the Project and its articulation with SEFAZ for ensuring the allocation of sufficient counterpart financial resources for Project implementation</p>		
Project Funds Flow/Disbursement Arrangements	Substantial	Moderate
<p>Risk:</p> <p>The State Government will maintain a USD denominated bank account in order to receive IFAD loan funds. The parri passu mechanism will be implemented for the IDB-IFAD cofinanced components. Beneficiary organizations, which will manage resources and implement investment might have weak capability around management of resources, are not able to submit timely and quality investments plans and financial reporting which might delay implementation.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>Include definition of parri passu arrangement in the Program Operating Regulations.</p> <p>Financial reporting and accountability mechanism of implementing organizations will be clearly established in Program Operating Regulations and a model agreement will be prepared to be signed with the organizations clearly stating responsibilities and mechanisms to be applied.</p> <p>Technical assistance will be provided by IDB to implement the requirements as per Program Operating Regulations and agreements signed.</p>		
Project Internal Controls	Substantial	Low
Risk:	Substantial	Low

<p>The project will have an appropriate organizational structure, procedures, manuals, systems, established workflows and staff responsibilities, segregation of duties, chart of accounts, asset control, and audit functions. The area that will require special attention is the supervision of the funds transferred to rural organizations. If these organizations fail to submit timely and adequate accounts to SAF for the resources transferred, execution may be delayed</p>		
<p>Mitigations:</p> <p>The preliminary Program Operating Regulations were elaborated and will be further developed to ensure adequate support and supervision of rural organizations. Key aspects will be clearly establishing oversight responsibilities of project staff and mechanism of supervision; capacity-building plan for rural organizations, disbursement and reporting procedures, and external auditors' review of rural organization transactions to ensure a continuous improvement of rural organizations' management capacities for the adequate use of Project funds.</p>		
<p>Project Accounting and Financial Reporting</p>	<p>Moderate</p>	<p>Low</p>
<p>Risk:</p> <p>The accounting policies used in the State system and acceptable and in line with international standards. The State financial management system is reliable and suitable for operations; however, it does not fully comply with IFAD reporting requirements and might lack the capability to produce the management reporting needed for proper decision making by the project team</p>	<p>Moderate</p>	<p>Low</p>
<p>Mitigations:</p> <p>The project will implement a complementary financial system to allow for monitoring of budget and execution by funding source component and category which generates reporting as required by IFAD and IDB.</p>		
<p>Project External Audit</p>	<p>Low</p>	<p>Low</p>
<p>Risk:</p> <p>The IDB is responsible for the fiduciary oversight of the project. The external audit of the project will be carried by an external firm acceptable to the IDB (regional audit courts responsible for</p>	<p>Low</p>	<p>Low</p>

audits at state level are not accredited by the World bank). As per the cooperation agreement audited financial statements will be shared by IDB to IFAD no later than 6 months after end of fiscal year.		
Mitigations:		
No measures		
Project Procurement	Moderate	Low
Legal and Regulatory Framework	Moderate	Low
Risk:		
The new federal regulatory framework for tenders and administrative contracts (Law no. 14.133/2021), establishes important changes that will have direct repercussions on State public Procurement. Considering the new law will have a mandatory application from April 2023, there is a risk of possible interruptions and delays in the project procurement execution. In addition, the risk linked to changes and innovations brought by the new legislation is also highlighted, which can directly impact the development of the Project as the teams may find it difficult to assimilate and implement the changes at the appropriate time. From the data extracted on the PEFA program website (Public Expenditure and Financial Accountability), it is also possible to identify the risk related to the weaknesses of public access to information on purchases and contracts, which can generate gaps for irregular practices, distrust of the legitimacy of activities, and questioning by the control bodies.	Moderate	Low
Mitigations:		
To reduce the risks inherent to the changes brought by the new regulatory framework, it is recommended that the conditions and methods peculiar to the selection and contracting contained in the IFAD and IDB norms, when applicable, are indicated in the Grant Agreement, and their use is subject to a favorable opinion from the legal body of the grantee prior to the execution of said Agreement. Providing training and retraining on the rules applicable to the personnel involved in procurement activities and continuous monitoring of the Project's procurement team regarding the changes in the new law are also strongly recommended.		
Accountability and Transparency	Low	Low

<p>Risk:</p> <p>In terms of accountability, the absence of clear protocols in the National systems can lead to failures in the direction of demands and, consequently, impact the investigations and solving any irregularities, with a potential risk of questioning the legitimacy of some decisions taken under an apparent conflict of interests. The inexistence of a 2-tiered system to handle complaints can generate a lack of exemption in the evaluation, mistaken conclusions and/or ineffective treatment of the information, directly impacting the necessary corrective measures and affecting the reputation, and culture of the Project.</p>	Low	Low
<p>Mitigations:</p> <p>i) implement specific protocols for receiving/handling complaints that include general and exception rules, dissemination, training, and communication plans, as well as non-retaliation policies against whistle-blowers, among others; ii) adopt a 2-tiered system for handling complaints with rules well defined in a specific manual; iii) implement an ethics and compliance council to deliberate on complaints; iv) adopt the practice of conducting prior research in procurement/contracting activities (third party due diligence) through consultation of federal and state debarred lists and other relevant tools.</p>		
<p>Capability in Public Procurement</p>	Moderate	Moderate
<p>Risk:</p> <p>i) Hiring according to IADB guidelines and procedures is unusual for the state government (except for SAF, the executing agency of PVSA) and needs specific capabilities in public procurement, although executing agencies already have professionals with experience in biddings of this nature. ii) Acquisitions will be carried out by several government entities and by rural organizations that will receive, funds for the implementation of PAPs and BP have to carry out a large volume of contracts.</p>	Moderate	Moderate
<p>Mitigations:</p> <p>i) Provide training and retraining on the rules applicable to the personnel involved in procurement activities. ii) Establish a Procurement Management sector at the CPMU to coordinate the procurement issues and carry out the primary and more complex</p>		

selection and acquisition processes, and coordinate the operations on the topic of acquisitions with the entities involved in Project execution. iii) The PSI should provide training and retraining on the applicable rules for all professionals involved in procurement activities, including producer organizations		
Public Procurement Processes	Moderate	Low
<p>Risk:</p> <p>Procurement processes follow a fragmented flow between different sectors of the executing agency, showing a low degree of communication and interaction between those involved, especially regarding the planning phase of activities. This can lead to a lack of understanding of the procurement and contracting processes, problems with specification and identification of needs, difficulties in choosing the applicable method, adoption of unrealistic plans, and non-compliance with deadlines for each process, among others. Such risks can severely impact the efficiency and quality of the Project's procurement and contracting activities. Lack of knowledge about IADB's procurement rules represents a risk that can lead to delays and failures in the development of activities in the area.</p>	Moderate	Low
<p>Mitigations:</p> <p>i) The Project shall adopt participative and integrated planning of procurement involving its coordination and the technical and financial area; ii) procurement and contracting flows and procedures will be clearly described in the Program Operating Regulations Manual; iii) the project procurement team will be trained in IADB guidelines which are in line with IFAD's.</p>		
Environment, Social and Climate Impact	Substantial	Moderate
Biodiversity Conservation	Moderate	Low
<p>Risk:</p> <p>The PSI is within the Caatinga biome, which, despite the adverse conditions, presents great biodiversity, with a high rate of fauna and flora endemism. Changes in the water regime may affect protected and/or endemic species of both fauna and flora.</p>	Moderate	Low
<p>Mitigations:</p>		

<p>Mitigations: i) The Project design has already included the prepared and disclosed preliminary Strategic Environmental and Social Impact Assessment. ii) Carrying out studies of the biotic environment, surveying the existing fauna and flora, and proposing periodic monitoring and rescue programs for endangered species. ii) Implementing activities to improve family farmers' productivity and income exclude critical habitat areas. iii) In addition, in line with IDB policies, the PSI will not be able to carry out any activities that cause significant conversion or degradation of natural habitats.</p>		
<p>Resource Efficiency and Pollution Prevention</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Risk:</p> <p>i) The development of productive activities generate the risk of soil degradation, loss of forest cover, deforestation, burning, contamination of soil and water, and the generation of solid/liquid waste. ii) The lack of proper sanitation and sewage treatment is a leading cause of pollution in the project area. iii) The high concentration of salt in soils refers to the natural process of salinization of surface and ground waters, a characteristic of the Project area. The use of high salinity water can lead to a rapid deterioration of soil conditions</p>	<p>Substantial</p>	<p>Moderate</p>
<p>Mitigations:</p> <p>i) The Project will mitigate these possible risks through fostering agroecological practices (organic fertilizer, water for reuse, recovery of degraded areas, among others), actions to strengthen public institutions and the Piauí-Canindé river basin committee itself, and activities aimed at training and environmental education for fostering ecosystem conservation. PSI will help communities (particularly quilombola) obtain land titling, strengthening incentives for them to invest in conservation practices. Besides, the project will offer financial literacy to producers receiving land ownership to ensure land is used responsibly and to beneficiaries' maximum value creation and protection. ii) The Project will invest in basic sanitation infrastructures, including individual systems for treating household sewage, greywater reuse systems, and green pits. iii) Unlike other identified risks, this is a permanent one. Still, it can be mitigated by implementing technologies to desalinate well water and other water sources and periodically monitor the</p>		

characteristics of irrigated soil. Besides, the project will constantly monitor water quality, particularly in the context of supervision missions and ad hoc implementation support missions, in accordance with national standards.		
Cultural Heritage		No risk envisaged - not applicable
There is no risk the Project may cause significant degradation of cultural or physical resources, including threats to resources of historical, religious, or cultural importance or their loss.		
Indigenous People	Low	Low
Risk: There is no risk the Project may have a significant physical, social, or economic negative impact on indigenous peoples, or that it threatens resources of historical or cultural importance to them or the loss of these resources. Indigenous peoples will not be adversely impacted by PSI actions.	Low	Low
Mitigations: i) Project eligibility/exclusion criteria prohibit the acquisition or restriction of land use in areas of indigenous and traditional communities. ii) The Environmental and Social Management Framework (ESMF) will include a Plan for Disclosure and Public Consultations, contemplating the participation of quilombola, indigenous and other traditional communities, informing about the Project and location of proposed interventions in the communities, reporting on the activities and location of any intervention in the area bordering the demarcated Territory. iii) The ESMF will also include a Social Communication and Community Participation program that respects and includes forms of documenting and means of communication accessible and adequate to the cultural specificities of indigenous peoples and traditional communities of the Project area.		
Labour and Working Conditions	Moderate	Low
Risk: Risk that the Project may result in abusive labor practices (for example, forced or child labor), cases of gender violence, discriminatory and unsafe/unhealthy working conditions for	Moderate	Low

those employees of the Project, including third parties and large suppliers.		
<p>Mitigations:</p> <p>All contracts with contractors, suppliers, and third parties to be financed with IFAD funds will include provisions that prohibit child labor and promote decent work. The Project will recruit a social specialist for the CPMU. An action plan for gender equality will also be developed, examining measures to prevent and combat gender-based violence.</p>		
Community Health and Safety		No risk envisaged - not applicable
Risk: There is no risk the Project will have adverse effects on the health and safety of the community.		
Physical and Economic Resettlement		No risk envisaged - not applicable
The Project's intervention should not cause the resettlement of families.		
Greenhouse Gas Emissions	Substantial	Moderate
<p>Risk:</p> <p>The degradation of the Caatinga biome due to unsustainable agricultural practices could lead to rising greenhouse gas (GHG) emissions. The setbacks in environmental policy and control in recent years point to a tendency for increased emissions.</p>	Substantial	Moderate
<p>Mitigations:</p> <p>PSI's components of environmental recovery aim to contribute to the recovery and conservation of water resources in the Piauí-Canindé river basin through actions such as the recovery of riparian forests and environmental revitalization of springs through reforestation with native seedlings. These activities will reduce GHG emissions. In fact, they will even sequester carbon.</p>		
Vulnerability of target populations and ecosystems to climate variability and hazards	High	Substantial
<p>Risk:</p> <p>i) In the semi-arid region, variations of the usual rainfall pattern in the semi-arid region are somewhat frequent. This factor</p>	High	Substantial

<p>influences the water availability and puts the communities' ability to maintain water supply for drinking and other uses at risk. ii) According to the Drought Monitoring System of the North-eastern Brazil, the state of Piauí has a wide range of drought intensity both in the short and long term: from low-intensity droughts to extreme droughts. Projections indicate that, for the next 30 years, the average increase in temperature in the region will be between 0,5o and 1,5oC. In the Project area, drought is the main climate threat and, from 2012 to 2018, the region has faced the most severe and prolonged drought in a hundred years, demonstrating the high vulnerability of the populations and their production systems to climate variability and hazards.</p>		
<p>Mitigations:</p> <p>i) This possible risk can be prevented or mitigated through measures focused on sustainable water management and access, mainly for human consumption, agricultural production, and the safety of children. The installation of small dams may help regulate the flow of rivers and recharge the water table. ii) IDB has conducted a climate change and disaster analysis that concluded that the drought and flood risk management plans to be financed by PSI will ensure adequate risk mitigation measures.</p>		
<p>Stakeholders</p>	<p>Moderate</p>	<p>Low</p>
<p>Stakeholder Engagement/Coordination</p>	<p>Low</p>	<p>Low</p>
<p>Risk:</p> <p>There is a low risk that the main players invited to be part of the Project show little interest or commitment toward the project's objectives and activities. Some civil society organizations represent different interests relevant to the Project - Movement of Landless Workers (MST), COOTAPI, and FETAG of Oeiras. The design team met their representatives as part of the consultation process for this Project's concept note. The objectives and approaches of the Project align with the interests of these organizations. Also, IDB, in line with its Environmental and Social Policy Framework (ESPF) has carried out a public consultation process.</p>	<p>Low</p>	<p>Low</p>
<p>Mitigations:</p>		

<p>SEPLAN coordinates the participation of interested sectorial institutions (SEMAR, SAF, EMATER, INTERPI, IDEPI) both during Project design and implementation. At the community level, the Project will implement a participatory process to develop Productive Adaptation Plans (PAP) and Business Plans (BP) to ensure the participation and representation of the needs and aspirations of the different groups in defining the specific supports to be offered by the Project. PSI will also establish continuous communication, awareness-raising, and coordination with the many partners at all levels (local, state, and federal) starting at the project design stage, and activities on visibility aimed at promoting and clarifying potential outcomes of project activities, both for target groups and partners involved in implementation.</p>		
<p>Stakeholder Grievances</p>	<p>Moderate</p>	<p>Low</p>
<p>Risk:</p> <p>Project implementation may entail the submission of complaints by several involved or impacted groups, thus affecting the continuity of activities and the established schedule.</p>	<p>Moderate</p>	<p>Low</p>
<p>Mitigations:</p> <p>The Project will incorporate a clear and effective mechanism for grievance/complaints redress, to be designed in a participatory way in line with IDB methodologies and guidelines (Mecanismo de Resolução de Queixas - MRQ). During the design, a public consultation was conducted with stakeholders. The procedure includes mechanisms to manifest the claim or complaint, response time, and resolution spheres. This mechanism shall be easily accessible to the population and have a speedy resolution, ensuring that submitted complaints are quickly reviewed and situations are mutually agreed upon in a satisfactory way for the parties involved.</p>		