Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 09-May-2023 | Report No: PIDA35395

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Brazil	P177474	Piauí Pillars of Growth and Social Inclusion Project - Phase 2	
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
LATIN AMERICA AND CARIBBEAN	05-Jun-2023	25-Oct-2023	Agriculture and Food
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	State of Piauí	Piauí State Secretariat for Planning (SEPLAN)	

Proposed Development Objective(s)

Increase land tenure security, adoption of climate-smart agriculture, and sustainable natural resources management practices, among target beneficiaries of the State of Piauí; and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it

Components

Land tenure regularization
Environmental management and geospatial information management
Climate-smart rural development
Project management
CERC

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	63.28
Total Financing	63.28
of which IBRD/IDA	50.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	50.00
Non-World Bank Group Financing	
Counterpart Funding	13.28
Borrower/Recipient	12.50
Local Farmer Organizations	0.78

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

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Other Decision (as needed)

B. Introduction and Context

Country Context

1. **Brazil's economy continues to recover, with Gross Domestic Product (GDP) growing at 2.9 percent in 2022, propelled by a successful COVID-19 vaccination campaign, rising demand for services, and fiscal stimulus**. The labor market improved through 2022, including for women and youth, as unemployment fell to 7.9 percent by December 2022 (down from a peak of 11.1 percent in December 2021). Persistent inflation (5.6 percent as of February 2023) has prompted the tightening of monetary policy rate (13.75 percent as of February 2023) to anchor 2023-24 inflation expectations. Improved revenues, gradual economic recovery and elevated prices of commodities boosted fiscal results in 2022, with the 12-month primary surplus of the public sector reaching 1.2 percent of GDP and public debt declining to 72.9 percent of GDP as of January 2023 (a 5.4 p.p reduction).

2. **With the economic recovery, poverty is expected to have gone down from 28.4 in 2021 to 25 percent in 2022[1], responding to increased job opportunities and expansion of the Bolsa Família cash transfer program.** A real increase in the minimum wages combined with a major overhaul of the Bolsa Família and a planned introduction of additional benefits to families with children are expected to drive poverty down to 23.9 percent in 2023. Further reduction may occur as the economy recovers but despite the social gains of earlier decades poverty and disparities remain prominent in the lives of many Brazilians in the absence of stronger

[1] Using the recently published US$6.85 PPP line for UMIC economies.

investments in human capital among the less well-off.

3. **Brazil faces significant climate change impacts compounded by deforestation and land degradation.** Climate change is altering temperature and rainfall patterns in the country, resulting in reduced water availability and extended droughts, and could push another 800,000 to 3 million Brazilians into extreme poverty as soon as 2030. Continued deforestation in the Amazon and Cerrado biomes remains a matter of urgency, as it has increased land-use emissions - the main source of greenhouse (GHG) emissions in Brazil. Strengthening resilience to climate change and protection of natural assets, especially the fragile ecosystems of the Amazon and Cerrado, is essential for environmentally sustainable economic growth.

4. **The State of Piauí, located in the Northeast Region, is one of the poorest in Brazil, with a Human Development Index (HDI) of 0.646 ranking the State 24th out of 27**.[2] It has a population of 3,281,000 inhabitants[3], with 34.2 percent living in rural areas. 45 percent of the population of the State lives under poverty[4], with 60 percent of the extreme poor located in rural areas.[5] According to data from the 2019 Brazilian National Household Sample Survey, the GINI Index in Piauí was equal to 0.551, and the State has the second worst distribution of labor income in Brazil. According to current IBGE data, the average monthly nominal household income per capita in Piauí is around USD 210.00, occupying the 18th position out of 27.[6]

5. **The territorial area of the State of Piauí has an extension of 25.17 million hectares, which encompasses two terrestrial biomes with diverse characteristics.** The *Cerrado* biome encompasses 53 percent of the State territory, and the remain area lies within the *Caatinga* biome (thorny scrub).[7] The *Cerrado* is a strategic biome for economic and environmental reasons, including its current and potential contribution to addressing food security and climate change challenges in the region and globally. The second biome, the *Caatinga,* is the only exclusively Brazilian biome, which means that a large part of its biological heritage cannot be found anywhere else on the planet.[8]

Sectoral and Institutional Context

6. **The food and agriculture sector plays a significant role in the Brazilian economy**. Agriculture and agribusiness account for about 8.4 percent of the country' GDP; 16.2 percent of total employment; and 40 percent of total exports (Brazil is the world's second largest food exporter).[9] Against the backdrop of COVID-19, agriculture has become an important factor for mitigating the negative economic effects of the pandemic, as the 2019/2020 grain season reached a record-high harvest (approximately 251.9 million tons).[10] Another record is expected for the 2022/2023 harvest.[11] These trends, together with growing food prices year on year, are expected to increase competition for agricultural land.[12]

[2] IBGE. https://cidades.ibge.gov.br/brasil/pi/panorama [Access on 25.07.2022]
[3] IBGE. https://cidades.ibge.gov.br/brasil/pi/panorama [Access on 14.06.2022]
[4] Neri, M. June 2022, "Mapa da Nova Pobreza", 40 págs., Rio de Janeiro, RJ - FGV Social. https://cps.fgv.br/MapaNovaPobreza
[5] Fundação Centro de Pesquisas Econômicas e Sociais do Piauí – CEPRO (2018), Estudo sobre Desenvolvimento Humano e Política Social do Piauí, Estado do Piauí, 154p.
[6] IBGE. https://cidades.ibge.gov.br/brasil/pi/panorama [Access on 14.06.2022]
[7] https://biblioteca.ibge.gov.br/visualizacao/livros/liv101676.pdf
[8] https://www.scielo.br/j/abb/a/zH98wR9sqpC9NtbwKwd3G8d/
[9] World Bank Group. 2016. *Brazil Systematic Country Diagnostic.*
[10] Companhia Nacional de Abastecimento—Conab. 2020. *Acompanhamento da safra brasileira de grãos*. Safra 2019/20.
[11] Safras & Mercado. 2023. https://safras.com.br/eng/safras-lowers-brazilian-soybean-production-estimate/
[12] WB 2020. COVID-19 in Brazil—Impacts and policy responses.

7. **Agriculture is the main source of economic activities in rural areas, particularly for family farmers.** [13] The agricultural sector accounts for 8.0 percent of the State's GDP and provides work for 670,321 individuals. It is directly related to food and nutritional security, with 82,93 percent of family farmers directing their production solely to self-consumption.[14] Piauí has 245,601 farms or agricultural production units.[15] Around 90 percent of these farms are considered family farms (most of which are smallholders, with less than 20 ha) and work on 28 percent of the total area.[16] Even though family agriculture occupies a relatively small area, they still account for 21.3 percent of the Gross Agriculture Production Value (GPV).

8. **Agriculture activities and rural population in Piauí are highly vulnerable to climate change**. Brazil's average annual temperatures are expected to rise by 1.7°C to 5.3°C by the end of the century. The projected increased heat will increase stress on crops and is likely to change the length of the growing season, potentially leading to yield reductions and to negatively affect livestock production. Rainfall is expected to decrease in the north-eastern region of Brazil. Decreased water availability is likely to reduce yields and the reduction in soil moisture may alter suitable areas for agriculture or crop production. Increased heat and water scarcity conditions will increase evapotranspiration, further contributing to crop failures and overall yield reductions. Moreover, land degradation and soil erosion, exacerbated by recurrent extreme weather events[17] adversely impact agricultural production and livelihoods of the rural poor. Family farmers are more sensitive to impacts of climate events as they have limited resources to increase resilience to climate change. The main consequences of climate change expected to affect Piauí (increased temperatures and droughts and decrease rainfall) significantly worsen the risks the State is already facing with native vegetation fires and water scarcity described above. At the same time, the agricultural sector is also an important contributor to Piaui's overall greenhouse gas (GHG) emissions. Annual data show that although the State of Piauí emitted 19.7 MtCO2eq in 2020 (21st position in the national raking, and 3.78 percent of Brazil emission), the emissions coming from Land Use Change and Forestry (LUCF) and Agriculture sectors represented 53 percent and 28 percent respectively.[18]

9. **Rural areas of Piauí are characterized by high poverty levels, particularly among family farming households, *Quilombolas* and Traditional Peoples and Communities (QTPC)**.[19] This not only hinders the socio-economic development of these populations, but also their ability to invest in enhancing their resilience to climate change. Based on a review of the literature on Piauí and stakeholder consultations, important factors limiting for the sustainable development of the agriculture sector and increased resilience of family farmers and QTPC to climate change are: (i) high level of land tenure informality, leading to land insecurity; (ii) low compliance with environmental regulations[20] and poor management of natural resources; (iii)

[13] Law 11.326 (2006) defines family farmers as follows: (i) does not have under any tenure regime an area of more than four fiscal modules (fiscal modules are defined by a number of hectares that can vary between municipalities and states); (ii) predominantly relies on its own family labor; (iii) household income predominantly originates in the family farm; and (iv) family members operate the farm. In Piauí, a fiscal module (FM) ranges from 30 hectares to 90 hectares.

[14] FIDA. 2022. Um novo retrato da agricultura familiar do Semiárido Nordestino brasileiro a partir dos dados do Censo Agropecuário 2017, https://aksaam.ufv.br/ToolSys/Download/Publicacao/5/6..

[15] IBGE. 2017. Censo Agropecuario

[16] Ibid

[17] El Niño events are expected to bring stronger and more frequent precipitation events, with an increased likelihood of longer drier periods in between.

[18] https://plataforma.seeg.eco.br/territories/piaui/card?year=2020&cities=false

[19] There are 153 known Traditional People and Communities in Piauí, including 83 certified *Quilombola* communities (of which 61 have open land regularization processes at the National Institute for Colonization and Land Reform (Instituto Nacional para Colonização e Reforma Agraria – INCRA).

[20] The Brazilian Forest Code (Law 12.651 of 2012) requires that: (i) all private rural landholdings maintain a percentage of native vegetation as Legal Reserves (*Reservas Legais*, RLs); and (ii) Areas of Permanent Preservation (*Áreas de Preservação Permanente*,

difficulties in access to formal credit; (iv) low access and use of improved inputs and climate-smart agriculture practices; and (v) low integration of family farmers and QTPCs to markets.

10. **Women farmers in Piauí face even stronger challenges**. Across Piauí, women fall behind men in official labor force participation and salaries: 63.5 percent of them are outside the labor force compared to 36.9 percent of men, whilst earning an average of 9.8 percent less.[21] This situation worsened during COVID-19, as women suffered a greater rise in unemployment and men found it easier to join the labor market as conditions improved.[22] As with employment, COVID-19 also increased the burden of housework among women. Although 85 percent of women living in rural areas in Brazil regularly engage in agricultural activities, significant gender inequalities remain. Despite rural women's high participation in agriculture, only 22.1 percent of farmers in Piauí who are declared as head of an agricultural establishment are women and 77,9 percent are men. Reduced access to land titles causes challenges when accessing credit and technical assistance, which in turn hinders women's chances of successfully running their own agricultural establishments. In Piauí, 78.1 percent of farmers with a land title are men and only 21.9 percent are women.[23] 81.8 percent of farmers who report having received technical assistance in Piauí are men (and only 18.2 are women), and 96.1 percent of women farmers in Piauí report challenges to access rural credit.[24] This environment is further aggravated by a very low representation of women in leadership positions in rural communities and farmers organizations, that could potentially advocate for change. In Piauí, 78 percent of women declared that the number of women leaders in their communities and municipalities was low. When asked about reasons, they mostly named household and care-taking tasks and cultural prejudices against women leaders.[25]

11. **Piauí's agrarian structure is characterized by pronounced land inequalities, as is the case in most Brazilian States.** Land tenure data in Piauí has been historically very unreliable, which is one of the reasons behind the government's efforts to modernize the Piauí State Land Institute (*Instituto de Terras do Piauí* – INTERPI) and formalize land tenure throughout its territory. There are 709 agrarian reform settlements in Piauí that include over 45,000 farms. 234 of these agrarian reform settlements depend on the State and are created and administrated by INTERPI within the framework of Brazil's agrarian reform to provide unproductive land to landless peasants. While land was initially owned by the State, as part of the State land tenure regularization program, INTERPI is transferring land ownership to family farmers located within these settlements. As of January 2023, INTERPI has delivered 15,054 land titles in more than 120 settlements.[26]

12. **Formalizing the land tenure of small-scale farmers and QPTC is a priority of the State Government to reduce land conflicts, improve productivity, and encourage the adoption of sustainable land management practices**. There is a high level of land tenure informality in the State among family farmers and QTPC, exposing farmers to unfair dispossession and making their access to credit and subsidized financing lines more

APPs), such as riparian forests along watercourses, steep slopes, mountain tops, etc., also be maintained by landholders. The Forest Code also obliges landholders to register their landholdings in the Rural Environmental Cadastre (*Cadastro Ambiental Rural*, CAR)

[21] Piauí CEPM. 2021. Diagnostico sobre o perfil da mulher piauiense no contexto atual, available at *https://portal.pi.gov.br/cepm/wp-content/uploads/sites/23/2022/03/Diagnostico-da-Mulher-PI..pdf*
[22] World Bank. 2021. Brazil Country Gender Scorecard.
[23] Instituto Brasileiro de Geografia e Estatística (IBGE).2017. Censo Agropecuário, Florestal e Aquícola, available at *https://censoagro2017.ibge.gov.br/*
[24] Piauí CEPM. 2021. Diagnostico sobre o perfil da mulher piauiense no contexto atual, available at *https://portal.pi.gov.br/cepm/wp-content/uploads/sites/23/2022/03/Diagnostico-da-Mulher-PI..pdf*
[25] Ibid.
[26] 6,329 families received a land title under Pillars 1 project in more than 70 settlements (see Annex 2).

difficult, preventing them to invest in more productive and sustainable agricultural practices. Piauí's QTPC have gained attention over the last decade, primarily in the southern part of the state where the rapid expansion of the agribusiness has resulted in an increasing number of land conflicts between QTPC and agribusinesses. This has led the government to adopt a series of measures, including the adoption of a new state law on land tenure regularization in 2019[27], and the creation within INTERPI of a unit dedicated to QTPC. There is ample evidence that formalized land rights significantly reduce the number of land conflicts, and improves productivity and income generation. Once land rights holders have formal land rights, they feel more secure about their land tenure, and are incentivized to investment more and more sustainably. Farmers spend less time on resolving disputes or protecting their land and spend more time on agricultural or other income-generating activities. Per the Intergovernmental Panel on Climate Change (IPCC), insecure land tenure affects people and communities' ability to adjust land use is ways can advance climate adaptation and mitigation outcomes. Securing land tenure incentivize the adoption of climate-smart land management practices.[28]

13. **The ability of family farmers to invest towards improving their production and resilience to climate change is further limited by the costs and difficulties to comply with the Native Vegetation Protection Law.** The said Law (Forest Code, Law 12.651 of 2012), which requires farmers to register in the Forest Code defines Rural Environmental Cadastre (*Cadastro Ambiental Rural* – CAR)[29] and is, at the same time, a requirement to access most public programs.[30] The Areas of Permanent Preservation (APPs) and the Legal Reserves (*Reserva Legal* – RL) defined in the Native Vegetation Protection Law provide ecosystem services that benefit agricultural production through biological pest control, regulation of climatic and hydrological systems, maintenance of soil structure and fertility, nutrient cycling, and pollination. Registration in the CAR National Electronic System (*Sistema Nacional de Cadastro Ambiental Rural* – SICAR) is required to obtain an environmental license for rural economic activity on the land, and for other official permits and authorizations issued by the environmental authorities. The CAR is a potentially promising avenue to slow illegal deforestation on private properties as the implementation of environmental regularization[31] of rural landholdings through the CAR enables a more effective supervision and monitoring of deforestation and degradation of native vegetation. Furthermore, the widespread application of the CAR contributes to the better management of the remaining native vegetation areas on private landholdings and to recover degraded RL and APPs in them, enhancing carbon storage and increasing resilience to climate change impacts.

14. **Currently, the implementation of the CAR in Piauí is ongoing (243,592 cadasters in the SICAR by April 2022, covering more than 18 million hectares or 76 percent of the State)**. However, there are 39 municipalities in the State where less than half of their territory has CAR information, which implies that areas with large stock of public lands present high risks of potential irregular occupations and/or change in land use. Despite progress in SICAR enrollment, that is an auto-declaration made by farmers, to achieve the CAR

[27] In 2019, Piauí adopted State Law nº 7.294/2019, which recognized the existence of "traditional territories" and include land tenure regularization provisions for the same.
[28] IPCC, 2019 and IPCC, 2020
[29] CAR is a geo-referenced cadaster for identifying rural properties or occupied private landholdings, delimiting areas of permanent preservation (APPs), legal reserve (RL) and any remaining areas of natural vegetation on the landholdings and community territories for control and monitoring purposes. The Brazilian Forest Code requires that rural landholders to retain the natural vegetation of part of their private rural landholdings all land on steep slopes, along water courses (up to a certain distance from the margin) or in the vicinity of springs. These areas are APPs (Area of Permanent Preservation). The private landholders must also set aside an area called a Legal Reserve (*Reserva Legal* – RL). The required size of the RL differs according to the biome, from 80 percent in the Amazon Biome, to 20 percent in other biomes.
[30] Such as the federal National plan for Family Farming (*Programa Nacional de Fortalecimento da Agricultura Familiar* – PRONAF*).*
[31] Environmental regularization is the process carried out by the rural producer, so that his property and/or rural real estate fits within the principles established in the environmental legislation.

regularization the following steps are still necessary: registries' analyses, validation, resolution of data conflicts and inconsistencies; and support natural resources restoration plans. Challenges found by the State Secretariat of Environment and Water Resources (*Secretaria de Meio Ambiente e Recursos Hídricos do Estado Piauí* – SEMAR) at this phase include: the high number and low quality of registrations, and scarce cartography data and technical and human resources to perform analyses, validation and restoration plans. Thus, support to family farmers and traditional communities is still needed for them to adhere to the Forest Code and, consequently, for them to improve their climate resilience, land use and natural resource management systems. It is important to note that family farmers and traditional communities' livelihood, food security, income, and quality of life rely on access to credit and technical assistance services to adopt new practices and technologies.

15. **Along with the low compliance with Brazilian Forest Code requirements, the use of unsustainable practices by family farmers aggravates the unsustainable nature resources management.** The dynamics of native vegetation of the *Cerrado* biome is often associated with fire. Nevertheless, human land use practices and climate change have altered the natural fire regime. In the dynamics of illegal deforestation, forest fires are a substantial part of the modus operandi of environmental illegality. In addition, fires set by ranchers to induce regrowth of pastures in the dry season often get out of control due to anomalous weather conditions and spread over wide areas, affecting protected areas community territories and remnants of native vegetation. More fragmented landscapes, with smaller patches and a greater proportion of edges, tend to be more vulnerable to fire than landscapes with continuous and native vegetation. In 2022, 10,866 hotspots were registered by the National Institute for Space Research (*Instituto Nacional de Pesquisas Espaciais* – INPE) in the State of Piauí. In an annual ranking of the Brazilian states that have the highest number of hotspots, Piauí is always ranked among the first eight, and fires impact municipal economies. Fires are also closely linked to climate change, as these are expected to increase in frequency due to extreme droughts combined with higher temperatures. At the same time, they also contribute to the emission of carbon compounds resulting in the acceleration of climate change, polluting the atmosphere, causing an increased vulnerability of people and ecosystems to climate impacts such as acceleration of the processes of desertification and loss of biodiversity. The staff shortages in SEMAR that is responsible for implementing the Forest Code is one of the main difficulties encountered in dealing with the problem of native vegetation fires, whether for the implementation of preventive measures or for fighting these fires.

16. **Environmental challenges are compounded by a limited use of improved agricultural practices technologies in family farms throughout the State, which translates into low levels of agricultural productivity.** The use of improved agricultural technologies, such as limestone application and fertilization is limited, with 11 percent of farmers in the State using some sort of fertilizer and 22 percent using pesticides.[32] Moreover, there is a lack of knowledge of available technologies and practices that could help increase family farmers productivity and resilience and foster climate-smart agriculture adoption. 43 percent of the farmers in Piauí are still using fire to clear the land for new crops[33], contributing to increased fires of native vegetation in the State and having a significant impact in terms of GHG emissions. Agricultural research and extension services have been reduced over the past two decades as results of fiscal constraints and privatizing policies. Though there has been new support towards the reconstitution and training of staff of the State Secretariat for Technical Assistance and Agricultural Defense (*Secretaria de Estado da Assistência Técnica e Defesa Agropecuária* - SADA), staff devoted to extension services to farmers in the State (1 extensionist for every 400

[32] At the national level, 42 percent of farmers are using fertilizers and 35 percent are using pesticides. IBGE. 2017. Censo Agropecuario

[33] http://repositorio.ipea.gov.br/bitstream/11058/5592/1/BRU_n08_agricultura.pdf

farmers) is clearly under-dimensioned. Only 20 percent of farmers receive any sort of technical assistance and extension services.

17. **Low productivity and high variability of incomes are also linked to limited access to finance and markets**. When technology is known, its adoption is hindered by the lack of financial resources, with only 14 percent of farmers in the State of Piaui having access to credit.[34] Investment loans provided by commercial banks to family farmers are restricted for several reasons: (i) formal requirements (such as land titling, CAR registration) are not met by farmers, and (ii) a lack of viable investment projects, mainly due to poor integration into value-chains and/or to an absence of technical and managerial project implementation support. Most family farmers are not linked to economic, productive, or commercial organizations such as cooperatives and associations, experiencing difficulties selling their products. It is estimated that in the Northeast, around 20 percent of family farmers have low access to markets, allocating part of their production to self-consumption and trading the surplus irregularly in local markets over time.[35]

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

Increase land tenure security, adoption of climate-smart agriculture, and sustainable natural resources management practices, among target beneficiaries and in select development territories of the State of Piauí; and in case of an Eligible Crisis or Emergency, respond promptly and effectively to it.

Key Results

- Increase land tenure security: Number of people who received land titles issued by INTERPI (Number); of which are women beneficiaries or co-beneficiaries (Number);
- Increase adoption of climate-smart agriculture: Family Farmers (members of supported organizations) adopting improved climate-smart agriculture practices and technologies (Number, disaggregated by gender, core indicator). This core indicator will monitor the adoption of climate-smart agriculture practices and technologies[36];
- Increase sustainable natural resources management: Landholdings and Community Territories implementing sustainable natural resources management practices (Number).[37]

[34]This percentage is similar to the national level (15 percent of farmers accessing credit). IBGE. 2017. Censo Agropecuario
[35] World Bank. 2015. Agricultural productivity and family farms in Brazil: Creating opportunities and closing gaps
[36] Climate-smart agriculture practices and technologies are defined as those that contribute to climate change resilience, including adaptation and mitigation approaches. See Box 2 for further details.
[37] This indicator will measure the number of landholdings and Community Territories for which new and/or improved sustainable natural resources practices have been introduced as a result of the project. Sustainable natural resources practices refer to technologies and approaches that ensure the sustainable use of natural resources, either by regenerating or protecting them. For example: rural environmental cadaster, natural vegetation restoration plans, fire prevention, control and management, and water monitoring and management.

D. Project Description

18. **Strategic approach.** The proposed project is an Investment Project Financing (IPF) of US$50.0 million to be implemented over a five-year period. The total project cost is estimated to be US$62.5 million, including US$12.5 million of counterpart funding from the State of Piauí and project beneficiaries.

19. **Geographic focus.** All state agrarian reform settlements and territories of QTPC where land regularization hasn´t been done will be eligible under Component 1. Under Components 2 and 3, the project will implement activities in the areas targeted under Component 1 as well as in agrarian reform settlements and communities where the Pillars I project will intervene with regards to land regularization, in order to deliver on the two other aspects of the integrated approach (environmental regularization and agriculture development) and to jump start implementation. Component 3 will focus more particularly in six territories of development (4 Northern Territories of Development[38] and two territories in the South of the State)[39] to ensure complementarity with other projects implemented by the State.[40]

20. **Beneficiaries.** The Project's direct beneficiaries are family farmers, as defined by the Brazilian law in rural settlements and QTPC. The number of these direct beneficiaries is estimated at 24,480 farmers in total, including 4,950 beneficiaries of Subcomponent 3.1 that will have benefitted from land titles and CAR under the Pillars 1 project.

21. **Component 1 - – Land Tenure Regularization Regularization (USD 20.08 million, of which IBRD loan USD 15.85 million).** This component will support the State Government's efforts to strengthen land tenure security for 22,500 small-scale farmers and members of QPTCs. Beneficiaries will be families eligible for land donation under the state land tenure regularization program. Land titles will be issued under the name of both spouses, and women's participation will be encouraged. Providing these families with formal land rights will remove one of the main sources of tenure insecurity, which in turn will bring a series of social, economic, and environmental benefits. Families and communities with formal land rights are less exposed to land conflicts and are better protected against unfair dispossession. They are incentivized to invest more, and more sustainably, including through the adoption of sustainable land management practices, soil conservation measures and increased investments in climate-smart agriculture. Therefore, the proposed project investments will help increase productivity and encourage sustainable agriculture practices, while reducing vulnerability to climate change.[41]

22. This component will have four main activities: (i) the modernization and strengthening of INTERPI; (ii) Land tenure regularization in agrarian reform settlements, with a target of delivering 15,000 land titles to family

[38] Território Planície Litorânea; Território dos Cocais; Território dos Carnaubais; e Território Entre Rios. See Annex IV Component 3 Territories in Development in Piaui for more details.
[39] Território Chapada das Mangabeiras; e Alto Parnaíba.
[40] In particular IFAD-funded Viva o Semi-Arido project and the IADB-IFAD Sustainable and Inclusive Piauí's project.
[41] Bambio, Y., and S. Bouayad Agha, 2018: Land tenure security and investment: Does strength of land right really matter in rural Burkina Faso? World Dev., 111, 130–147, doi:10.1016/J.WORLDDEV.2018.06.026.

Robinson, B.E. et al., 2018: Incorporating land tenure security into conservation. Conserv. Lett., 11, e12383, doi:10.1111/conl.12383.

IPCC, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press

farmers in state agrarian reform settlements; (iii) Land tenure regularization for QPTCs. The objective will be for INTERPI to regularize the land of at least 10 QIPTC territories, while helping advance other tenure regularization processes related to QIPTC territories; and (iv) strategic partnerships with the judiciary and citizen engagement.[42] The focus will be on activities related tenure regularization for family farmers and QPTC, the modernization of the public land registry (*cartório*), provision of legal aid to the poor, and alternative land conflict resolution.

23. **Component 2 – Environmental Management and Geospatial information management (Total Cost USD 14.00 million; IBRD loan USD 12.24 million).** Environmental management and climate change resilience involve managing complex dimensions, such as land use changes, natural resources management, sustainable use, and environmental services assessment. The main objective of this Component is to contribute to improving the State's capacity to promote sustainable natural resources management (including natural vegetation cover and water resources), to promote the adoption of sustainable natural resources practices within family farmers, including historically marginalized groups targeted by the project such as QPTC and women, and to provide accurate geospatial information for the elaboration of public policies, natural resources management, and climate risk management.

24. The Component has four main activities: ((i) the implementation of preventive measures or measures to control and combat vegetation fires; (ii) the implementation of a system that enables continuous monitoring of surface water for events or trends over time; (iii) rural environmental cadastre and environmental regularization for the selected areas; and (iv) the provision of spatial data on land use, land tenure, native vegetation and native vegetation fire risk, within the State Land and Environmental Geotechnical Center (*Centro de Geotecnologia Fundiária e Ambiental* – CGEO). SEMAR will lead the implementation of this Component.

25. **Component 3. Climate-smart Rural Development (Total Cost USD 25.24 million; of which IBRD loan USD 18.05 million and beneficiaries USD 0.78 million).** This Component aims to increase the socio-economic inclusion and climate resilience of family farmers from land reform settlements and QPTC, by granting access to climate-smart agricultural technologies and markets and strengthening the agriculture sector public services provided to farmers. All activities under this Component are designed to strengthen the climate resilience of the beneficiaries and to integrate climate change mitigation and adaptation strategies. Investments under this Component will contribute to improve net carbon balances through: (i) emission reductions from improved agroforestry, livestock management and cropping systems; (ii) better agriculture management; and (iii) investments in sequestration from afforestation and/or restoration of degraded areas. The Component will be implemented by the State Secretary of Family Agriculture (*Secretaria de Estado da Agricultura Familiar* - SAF).

26. The Component will have four main activities: (i) climate-smart productive support to farmers' organizations through the provision of matching grants; (ii) institutional strengthening of SAF and SADA to increase their capacity to deliver support to family farmers, including historically marginalized groups targeted by the project such as QTPC and women; (iii) capacity strengthening of farmers' organizations to foster their resilience to climate change and their insertion into productive value-chains; and (iv) the development of Socioeconomic Development Plans (SDP) for agrarian reform settlements and QPTC, to collectively identify the socioeconomic opportunities from a more efficient, sustainable and commercial exploitation of their

[42] Within the framework of this activities, INTERPI is expected to strengthen existing partnerships with the land tenure regularization center of the Office of the Inspector General of the State Secretariat of Justice (Corregedoria Geral de Justiça do Estado do Piauí), the Inspector General of the Extrajudicial Forum of the State Secretariat of Justice (Corregedoria do Forum Extrajudicial), and the National Institute for Agrarian Reform (Instituto Nacional de Colonização e Reforma Agrária - INCRA).

settlements.

27. **Component 4. Project Management (Total Cost USD 3.96 million; of which IBRD loan USD 3.86 million).** This Component will be implemented by the State Secretariat for Planning (*Secretariat Estadual do Planejamento* – SEPLAN). It will support Project coordination and management, including: (i) Project management and administration; (ii) financial management (FM); (iii) procurement; (iv) monitoring and evaluation (M&E) of Project performance and impact; (v) environmental and social risks management and grievance redress mechanism (GRM); and (vi) communication and outreach. The Component will finance studies, workshops, training, travel, technical advice, consulting, administrative services, limited software and equipment, and operating costs. A data platform aggregating available geospatial data will be set up to facilitate the search and use of information generated by different institutions and products (INTERPI; SEMAR; National Institute for Space Research, *Instituto Nacional de Pesquisas Espaciais* -INPE; Brazilian Forest Service; etc).

28. **Component 5. Emergency Response (US$0).** A Contingent Emergency Response Component (CERC) with no funds is included in the Project as a mechanism for funding requests arising from emergencies such as natural disasters and other shocks, as defined in the operational manual for the CERC. If such a crisis develops, the State of Piauí can ask the World Bank to reallocate part of the Project funds to cover the costs of emergency response and recovery.

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

29. Based on an initial screening of the environmental and social risks and impacts of the proposed Project, the environmental risk is rated **Moderate** and the social risk is rated **Substantial**. The Project does not include any activity with potential to generate significant negative environmental impacts. The Technical Assistance activities do not include the preparation of future investment projects, do not pose direct adverse environmental impacts and shall not result in “downstream” negative environmental effects.

30. The overall impact of land tenure regularization activities supported by the Project on the environment are expected to be positive because they are designed to protect and conserve biodiversity and habitats and land tenure is widely recognized as a foundation for reducing illegal deforestation and degradation of rural landscapes and for maintaining vital ecosystems services. Land titles contribute for deforestation control by allowing the demarcation of legal reserves and permanent protection areas and enabling the identification of persons accountable for illegal deforestation. The alternative to land tenure regularization is a "no action" scenario, with continuity of the current situation, favoring the uncontrolled exploitation of important Biomes

and the deforestation in the *Cerrado*.

31. The State's land regularization environmental management framework includes procedures in the preparation of the CAR to improve conservation and the preservation of ecological corridors, fragile ecosystems and areas with relevant biodiversity. Following the Brazilian Forest Code (which has diverse provisions aiming to protect the social interest of vulnerable groups, notably family farmers), the demarcation of permanent protection areas does not have adverse impacts on livelihoods and nutrition patterns of these social groups. The Client's institutional capacity in implementing land tenure regularization programs also reduces the risks of negative impacts to the environment.

32. The promotion of sustainable and climate-smart agricultural practices and the technical assistance on agricultural production pose potential environmental risks and impacts, as some agricultural activities may interfere with sensitive biodiversity areas, land use conversion for production increase, use of inadequate soil management and indiscriminate use of pesticides. These impacts would be limited in scope and localized and can be avoided or mitigated with proper environmental management practices. The implementing agency, SAF, has prior experience with the Bank environmental guidelines, reducing the potential risk due to the agricultural production activities.

33. Natural resources management - prevention of natural vegetation fires and water resources management - may result in positive impacts to the environment. Natural vegetation fires are among the main environmental problems faced by Piauí as they contribute to carbon emissions, acceleration of climate change, atmospheric pollution, desertification, and loss of biodiversity. The Project will encourage and promote techniques that allow the control, monitoring and reduction of vegetation fires and shall result in significant environmental benefits. Improvements in water resource management may improve water quality throughout the State.

34. In sum, the Project does not include any activity with potential to generate significant adverse environmental impacts. It is expected to have an overall positive impact on the environment as its activities can contribute to reduce illegal deforestation and degradation of rural landscapes, maintain vital ecosystems services, reduce greenhouse emissions, leading to a sustainable landscape management.

35. In spite of these positive environmental impacts, the Project would be working in some sensitive biodiversity areas and potential negative environmental impacts would include: (i) land use disturbance and exploitation of natural resources; (ii) lead to legal deforestation to open new agriculture areas; (iii) inadequate soil management, (iv) indiscriminate use of pesticides. In addition, the following risk factors determine the Substantial social risk rating of the Project: (i) Component 1 deals with land regularization of small farmers and traditional communities (good faith occupants of State vacant lands) in a context that has been ridden by land conflicts, land grabbing, social tension and conflicts in face of the expansion of the agrarian frontier (particularly in the *Cerrado Piauiense*); (ii) activities envisaged under Component 2, aiming the prevention and control of forest fires, are expected to train and engage voluntary community workers, who may be exposed to some health and safety risks when carrying out these activities.

36. The Project is also expected to have many positive social impacts on poor, disadvantaged and vulnerable social groups living in the rural areas of the State of Piauí (including poor small farmers settled in Agrarian Reform settlements and traditional communities). The Project's main objectives are to increase land tenure security of small farmers and traditional communities, increase the income of family farmers currently in poverty, control and combat forest fires and enhance the quality of surface and groundwater in a territory ridden by cyclical droughts. Project activities are also expected to contribute to gender equity by prioritizing women in land titling processes and productive inclusion initiatives. Project activities are not expected to:

a. Increase risks ordinarily related with the influx of workers on rural communities: fraternization, increased risk of communicable diseases and the pressure they put on local social and health services, increased risk of inappropriate and criminal behavior, sexual harassment/exploitation, and gender-based violence potentially leading to tension and conflict between local communities and construction workers. These risks are minimized because high volumes of labor influx is not anticipated, neither for the small construction works, nor for the demarcation works which ordinarily involve a crew of just five members (topographer, surveyor engineer, field assistant, social worker and driver), whereas laborers needed for trailblazing and other manual labor are hired locally;

b. Occur in places defined by the prevalence of gender-based violence, child and/or forced labor, or in a context of weak law enforcement. The Brazilian labor legislation strictly prohibits child and forced work and SEA/SH are criminal offenses with severe penalties;

c. Have adverse impacts on Indigenous Peoples. The Project aims to benefit a few local communities that in recent years started a process of self-identification as members of a distinct indigenous social and cultural group and are recognized by the State Government as such (based only on the criterium of self-identification), these local communities do not possess the four characteristics set in ESS 7;

d. Lead to significant adverse impacts related to permanent or temporary physical and economic displacement due to land acquisition or restrictions on land use. The land regularization component will only regularize plots of land already peacefully occupied by non-title holders small farmers and traditional communities;

e. Compromise existing legitimate (customary, collective or subsidiary) land rights of traditional communities and small farmers or lead to the eviction of non-title holders. The land regularization component explicitly aims to recognize and increase the security of these land rights and benefit traditional communities and vulnerable social groups; or,

f. Lead to changes in land use or to land conversion with adverse impacts on livelihoods and nutrition patterns of poor and traditional rural communities.

37. Nevertheless, three risk factors determine the Substantial social risk rating of the Project, namely:

a. Component 1 deals with land regularization of small farmers and traditional communities (good faith occupants of State vacant lands) in a context that has been ridden by land conflicts, land grabbing, social tension and conflicts in face of the expansion of the agrarian frontier (particularly in the *Cerrado Piauiense*);

b. Activities envisaged under Component 2 aiming the prevention and control of forest fires are expected to train and engage voluntary community workers, who may be exposed to some health and safety risks when carrying out these activities; and

c. Despite the implementation of the previous operation under the safeguard policies, the Borrower lacks previous experience with the Environmental and Social Standards. In consequence and during project preparation, the Borrower will prepare an Environmental and Social Management Framework (ESMF), a Stakeholder Engagement Plan (SEP), Labor Management Procedures (LMP), a Resettlement Framework (RF) and the Environmental and Social Commitment Plan (ESCP) following the principles and requirements of the relevant ESSs.

E. Implementation

Institutional and Implementation Arrangements

38. **The Institutional and Implementation Arrangements consider a multi-sectoral approach and is based on the Project's scope and risk profile, as well as on the lessons learned from the implementation of previous operations with the State of Piauí, including Pillars 1 project**. The arrangements take into account the current physical and human resources available in SEPLAN, which will perform the role of project coordinator and oversight, as well as INTERPI, SEMAR and SAF that will be implementing part of the operation.[43]

39. **Borrower and implementing agency.** The Government of Piauí, through the State Secretariat for Planning (*Secretariat Estadual do Planejamento* - SEPLAN) will be the Borrower for the proposed loan, with the Federative Republic of Brazil serving as Guarantor.

40. **Project Management.** SEPLAN will host a Project Management Unit (PMU) and will be responsible for overall management, planning, coordination, monitoring and evaluation of all project activities, as well as for project financial management, procurement, disbursements and accounting. SEPLAN will also be responsible for implementing the social and environmental risk management instruments, as well as for disseminating project results through a proactive communication strategy. In addition, SEPLAN will ensure that counterpart resources are foreseen in the State's budget.

41. **Project implementation**. INTERPI, SEMAR and SAF will be responsible for formulating, implementing and monitoring the project's sectoral interventions and results of Component 1, 2 and 3 respectively. Project Implementation Units (PIU) will be established in each Secretariats.

42. **Steering committee.** To facilitate the dialogue and collaboration amongst the different agencies and ensure oversight over the implementation of the Project, a Project Steering Committee (*Conselho Gestor do Projeto* - COGEP) will be implemented. It will be chaired by SEPLAN and include representatives of the various institutions involved in the implementation of the project (INTERPI, SEMAR, SAF) as well as representatives of (i) SADA that will support implementation of PIPs in coordination with SAF under Component 3; (ii) the State Secretariat for Women (*Secretaria das Mulheres do Piauí* – SEMPI) in order to support implementation and monitoring of gender-related activities; and (c) the General State Ombudsman (*Ouvidoria Geral do Estado*, GSO).

CONTACT POINT

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[43] Arrangements consider the current charts of SEPLAN, INTERPI, SEMAR and SAF. In case charts change, implementation arrangements will be updated in the Project Operations Manual, in form and substance satisfactory to the World Bank. Arrangements also take into account the need of coordinated efforts and aligned actions with the other World Bank-financed operation – Piauí Health and Social Protection Development project (P178567), to ensure that the proposed institutional arrangements are consistent.

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