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Report No: PAD00054

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED LOAN

IN THE AMOUNT OF US$100 MILLION

TO THE

STATE OF BAHIA
WITH A GUARANTEE FROM THE FEDERATIVE REPUBLIC OF BRAZIL

FOR A

BAHIA SUSTAINABLE RURAL DEVELOPMENT PROJECT
AS PHASE 1 OF THE MULTI-PHASE PROGRAMMATIC APPROACH

TRANSFORMING BRAZIL'S AGRIFOOD SYSTEM

WITH AN OVERALL FINANCING ENVELOPE OF US$1,289 MILLION

OCTOBER 11, 2024

Agriculture and Food Global Practice
Latin America And Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective {September 16, 2024})

Currency Unit =	BRAZILIAN REAL
BRL 5.56 =	US$1
US$ 0.18 =	BRL 1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Carlos Felipe Jaramillo
Regional Director:	Benoit Bosquet
Country Director:	Johannes C.M. Zutt
Practice Manager:	Diego Arias Carballo
Task Team Leader(s):	Eirivelthon Santos Lima, Carlos Bellas Lamas, Luis Alfonso Alvestegui Justiniano

ABBREVIATIONS AND ACRONYMS

Adab	Bahia State Agency for Food Safety and Agriculture Health *(Agência de Defesa Agropecuária da Bahia)*
AFD	French Development Agency *(Agence Française de Développement)*
AGE-BA	General Auditor of the State of Bahia (*Auditoria Geral do Estado da Bahia*)
Agersa	Regulatory Agency for Water and Sanitation Services of Bahia *(Agência Reguladora de Saneamento Básico do Estado da Bahia*)
AgPS&G	Agricultural Public Services and Goods
Anater	National Agency for Technical Assistance and Rural Extension (*Agência Nacional de Assistência Técnica e Extensão Rural*)
ATER	Technical Assistance and Agricultural Extension (*Assistência Técnica e Extensão Rural*)
AVP	Agricultural value of production
Bahiater	Bahia Superintendency of Technical Assistance and Rural Extension (*Superintendência Baiana de Assistência Técnica e Extensão Rural*)
BP	Business Plan
BB	Banco do Brasil
BNB	Northeast Bank (*Banco do Nordeste*)
BNDES	National Economic and Social Development Bank
CapEx	Capital Expenditure
CAR	Regional Development and Action Company (*Companhia de Desenvolvimento e Ação Regional*)
CC	Consultation Letter (*Carta Consulta*)
CCAs	Centers of Community Associations (*Centrais de Associações*)
CCDR	Country Climate and Development Report
Ceplac	Commission for Cocoa Cultivation Planning (*Comissão Executiva do Plano da Lavoura Cacaueira*)
Cerb	Environmental Engineering and Water Resources Company of Bahia (*Companhia de Engenharia Ambiental e Recursos Hídricos da Bahia*)
CERC	Contingent Emergency Response Component
Codeter	Territorial Development Collegiates (*Colegiado Territorial de Desenvolvimento Sustentável*)
Cogefur	Management Council of the Revolving Fund (*Conselho Gestor do Fundo Rotatório*)
CPF	Country Partnership Framework
CPSD	Country Private Sector Diagnostics
Cresol	Rural Credit Cooperatives with Solidarity Interaction (*Cooperativas de Crédito Rural com Interação Solidária*)
CSA	Climate-smart agriculture
DA	Designated Account
DESENBAHIA	Bahia's Development Agency *(Agência de Fomento do Estado da Bahia)*
DFIL	Disbursement and Financial Information Letter
DO	Development Objective
EFA	Economic and financial analysis
EIRR	Economic Internal Rate of Return
E&S	Environmental and Social
Embasa	Bahian Water and Sanitation Company (*Empresa Baiana de Águas e Saneamento*)
Embrapa	Brazilian Agricultural Research Company (*Empresa Brasileira de Pesquisa Agropecuária*)
EOI	Expression of Interest
ERP	Enterprise Resource Planning
ERS	Economic Rate of Substitution
ESG	Environmental, Social, and Governance
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework

ESS	Environmental and Social Standards
ESRS	Environmental and Social Review Summary
ETP	Ecological Transformation Plan
FAPESB	Bahia State Research Foundation (*Fundação de Amparo à Pesquisa do Estado da Bahia)*
FAO	Food and Agriculture Organization
Fiplan	Integrated Planning, Accounting and Finance System of the State of Bahia (*Sistema Integrado de Planejamento, Contabilidade e Finanças do Estado da Bahia*)
FIRR	Financial Internal Rate of Return
FLEM	Luis Eduardo Magalhaes Foundation (*Fundação Luis Eduardo Magalhães*)
FM	Financial Management
FMA	Financial Management Assessment
FMIS	Financial Management Information System
FNPV	Financial Net Present Value
FY	Fiscal Year
GAP	Gender Action Plan
GBV	Gender-based Violence
GDP	Gross Domestic Product
Gecen	Centrais Program Management Unit (*Gerência de Gestão do Programa de Centrais*)
GHG	Greenhouse Gas
GoB	Government of Brazil
GRS	Grievance Redress Service
HCP	Higher Carbon Price
HDI	Human Development Indicator
HLO	High-Level Outcomes
IAASB	International Auditing and Assurance Standards Board
IACM	Internal Audit Capability Model
IBRD	International Bank for Reconstruction and Development
IDB	Interamerican Development Bank
IFAC	International Federation of Accountants
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFR	Interim Financial Reports
IP	Indigenous People
IPCA	Broad National Consumer Price Index
IPCC	Intergovernmental Panel on Climate Change
IPF	Investment Project Financing
IPSAS	International Public-Sector Accounting Standards
IRR	Internal Rate of Return
LDO	Budget Guidelines Law (*Lei de Diretrizes Orçamentárias*)
LOA	Annual Budget Law (*Lei Orçamentária Anual*)
LUCF	Agriculture and Land Use Change and Forestry
Mapa	Ministry of Agriculture, Livestock and Food Supply (*Ministério da Agricultura e Abastecimento*)
MDAFF	Ministry of Agrarian Development and Family Farming (*Ministério do Desenvolvimento Agrário e Agricultura Familiar*)
MFD	Maximizing Finance for Development
MHDI	Municipal Human Development Index
MPA	Multiphase Programmatic Approach
MTR	Mid-term Review
M&E	Monitoring and Evaluation
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution

NGO	Non-Governmental Organizations
NPCC	National Policy on Climate Change
NPV	Net Present Value
NRW	Non-Revenue Water
NTSC	National Technical Support Committee
OECD	Organization for Economic Co-operation and Development
OECMs	Other Effective area-based Conservation Measures
PCAB	Program Rural Water Centers of Bahia (*Programa Centrais de Águas da Bahia*)
PAC	Growth Acceleration Program (*Programa de Aceleração do Crescimento*)
PAD	Project Appraisal Document
PBC	Performance-Based Condition
PCE	Private Capital Enabling
PCM	Private Capital Mobilization
PCU	Project Coordination Unit (*Unidade de Coordenação do Projeto*)
PDO	Project Development Objective
PESB	State Plan for Water Supply and Sanitation (*Plano Estadual de Água de Saneamento Básico*)
PESH	Water Security State Plan (*Plano Estadual de Segurança Hídrica*)
PrDO	Program Development Objectives
PforR	Program for Results
PGSs	Participatory Guarantee Systems
PMU	Project Management Unit
POs	Producer Organizations
POM	Project Operational Manual
PPA	Pluriannual Plan (*Plano Pluriannual*)
PPCD-AM	Action Plan for Deforestation Prevention and Control in the Legal Amazon
PPCD-Cerrado	Action Plan for Deforestation Prevention and Control in the Cerrado
PPSD	Project Procurement Strategy for Development
Pronaf	National Program to Strengthen Family Farming (*Programa Nacional de Fortalecimento da Agricultura Familiar*)
PRSB	Regional Water and Sanitation Plans (*Planos Regionais de Saneamento Básico*)
PVPP	Photovoltaic Power Plants
RFP	Request for Proposals
RWS	Rural Water Services
SACC	Agreement and Contract Administration System (*Sistema de Administração de Convênios e Contratos*)
SAF	Secretary of Family Farmers (*Secretaria de Agricultura Familiar*)
SDR	State Secretariat of Rural Development (*Secretaria de Estado de Desenvolvimento Rural*)
SEA	Social and Environmental Assessment
Seagri	Secretariat for Agriculture, Livestock, Irrigation, Fisheries, and Aquaculture (*Secretaria da Agricultura, Pecuária, Irrigação, Pesca e Aquicultura)*
Sebrae	Brazilian Support Service for Micro and Small Businesses (*Serviço Brasileiro de Apoio às Micro e Pequenas Empresas*)
Sefaz	Secretariat of Finance (*Secretaria da Fazenda*)
Senai	National Industrial Apprenticeship Service (*Serviço Nacional de Aprendizagem Industrial*)
Seplan	Planning Secretariat (*Secretaria de Planejamento*)
Senar	National Service for Rural Learning (*Serviço Nacional de Aprendizagem Rural*)
SER	Shadow Exchange Rate
Sicoob	Brazilian Credit Cooperative System (*Sistema de Cooperativas de Crédito do Brasil*)
SIHS	State Secretariat of Water Infrastructure and Sanitation (*Secretaria de Infraestrutura Hídrica e Saneamento*)
Sisar	Integrated Rural Sanitation System (*Sistema Integrado de Saneamento Rural*)

SOE	Statement of Expenditure
SOL	Online Bidding Solution (*Solução Online de Licitação*)
SS	Summary Sheet
STN	National Treasury Secretariat
Sudeagro	Superintendency for Agricultural Development of the State of Bahia (*Superintendência de Desenvolvimento Agropecuário do Estado da Bahia*)
TA	Technical Assistance
TCE-BA	Court of Accounts of the State of Bahia (*Tribunal de Contas do Estado da Bahia*)
TFP	Total Factor Productivity
TOC	Theory of Change
ToR	Terms of References
TTL	Task Team Leader
UA	Universally Aligned
UTRs	Units of Technological Reference
WSS	Water Supply and Sanitation

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DATASHEET

BASIC INFORMATION

Project Beneficiary(ies)	Operation Name		
Brazil	Bahia Sustainable Rural Development Project		
Operation ID	Financing Instrument	Environmental and Social Risk Classification	
P180429	Investment Project Financing (IPF)	Moderate	

Financing & Implementation Modalities

[✓] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternative Procurement Arrangements (APA)	[ ] Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date	Expected Program Closing Date
30-Oct-2024	30-Oct-2030	28-Dec-2035
Bank/IFC Collaboration	Joint Level	
Yes	Joint Project – involving co financing with IFC (loan, equity, budget, other) or staffing	

MPA Program Development Objective

The MPA Program Development Objective (PrDO) is to enhance resilience of family farmers in targeted States.

MPA FINANCING DATA (US$, Millions)

MPA Program Financing Envelope	1,602.20

Components

Component Name	Cost (US$)
Component 1: Increasing agricultural productivity, access to markets, and resilience.	52,505,011.00
Component 2: Supplying safe drinking water services to rural communities.	27,698,667.00
Component 3: Designing and Scaling Innovative Solutions.	3,987,845.00
Component 4: Contingent Emergency Response Component (CERC).	0.00
Component 5: Project Management.	15,558,477.00

Organizations

Borrower:	State of Bahia
Implementing Agency:	CAR - Companhia de Desenvolvimento e Acao Regional

MPA FINANCING DETAILS (US$, Millions)

MPA Program Financing Envelope:	1,602.20
of which Bank Financing (IBRD):	1,289.00
of which Bank Financing (IDA):	0.00
of which Other Financing sources:	313.20

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)?	No
Is this project Private Capital Enabling (PCE)?	No

SUMMARY

Total Operation Cost	**158.68**
Total Financing	**158.68**
of which IBRD/IDA	**100.00**

Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	100.00

Non-World Bank Group Financing

Counterpart Funding	50.00
Borrower/Recipient	50.00
Commercial Financing	8.68
Unguaranteed Commercial Financing	8.68

Expected Disbursements (US$, Millions)

WB Fiscal Year	2025	2026	2027	2028	2029	2030	2031
Annual	9.05	23.79	23.28	21.03	11.51	6.17	5.17
Cumulative	9.05	32.84	56.12	77.15	88.66	94.83	100.00

PRACTICE AREA(S)

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Climate Change; Education; Finance, Competitiveness and Innovation; Water

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary Financial Management Risk rating from Specialist: Moderate as of 2024-09-18T15:07:38Z Procurement Risk rating from Specialist: Moderate as of 2024-04-10T00:00:00Z	Moderate
7. Environment and Social Environment Risk rating from Specialist: Moderate as of 2024-04-25T21:24:31Z Social Risk rating from Specialist: Moderate as of 2024-04-25T21:24:31Z	Moderate
8. Stakeholders	Moderate
9. Overall	Moderate
Overall MPA Program Risk	Moderate

POLICY COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description
Schedule 2, Section I, A, 1(a): The Borrower shall cause to be operated and maintain, throughout Project implementation, a PMU within CAR, with functions, resources, and (subject to paragraph B.1(vii) below) composition acceptable to the Bank, including its Key Staff, and as further detailed in the Project Operations Manual, to implement the Project as set out in Article III.
Schedule 2, Section I, A, 1(b): The Borrower shall cause to be operated and maintain, throughout Project implementation, a PIU within CERB, with functions, resources, and (subject to paragraph B.1(viii) below) composition acceptable to the Bank, including its Key Staff, and as further detailed in the Project Operations Manual, to implement the Project as set out in Article III.
Schedule 2, Section I, A, 1(c): The Borrower shall not later than [ninety] [(90)] days after the Effective Date, establish and thereafter maintain during the implementation of the Project, a Matching Grants Subproject Evaluation Committee, chaired by [•], and composed of representatives of [•], with responsibilities and sufficient resources, all acceptable to the Bank and set forth in the POM.
Schedule 2, Section I, E, 1: The Borrower shall cause CAR to enter into an agreement with the Procurement Agent (the "Procurement Agent Agreement") under terms and conditions acceptable to the Bank.
Schedule 2, Section I, E, 2: The Borrower shall exercise and shall cause CAR and the Procurement Agent to exercise its rights and carry out its obligations under the Procurement Agent Agreement in such manner as to protect the interests of the Borrower and the Bank and to accomplish the purposes of the Loan.
Schedule 2, Section I, F, 1: To facilitate the carrying out of the Project, the Borrower may, or may cause CAR, CERB or Centrais to, as set out in the Project Operations Manual, enter into Cooperation Agreements with each of the

Cooperating Partners under terms and conditions acceptable to the Bank, and shall thereafter maintain said Cooperation Agreements throughout Project implementation.
Schedule 2, Section I, G, 1: The Borrower shall carry out, and cause the Project to be carried out, in accordance with the Project Operations Manual.
The Borrower shall carry out the Project in accordance with the Implementation Arrangements set out in Section I, Schedule 2 of the Loan Agreement.

Conditions

Type	Citation	Description	Financing Source
Effectiveness	Condition-1	Article 5.01(a): the CAR Subsidiary Agreement and the CERB Subsidiary Agreement have been entered into in form and substance acceptable to the Bank, and all conditions precedent to its effectiveness (if any) have been fulfilled.	IBRD/IDA
Effectiveness	Condition-2	Article 5.01(b): the Procurement Agent Agreement has been entered into in form and substance acceptable to the Bank, and all conditions precedent to its effectiveness (if any) have been fulfilled.	IBRD/IDA
Effectiveness	Condition-3	Article 5.01(c): the PMU has been established and its Key Staff appointed in a manner acceptable to the Bank.	IBRD/IDA
Effectiveness	Condition-4	Article 5.01 (d): the PIU has been established and its Key Staff appointed in a manner acceptable to the Bank.	IBRD/IDA
Effectiveness	Condition-5	Article 5.01(e): the Project Operations Manual has been prepared, approved, and adopted in in form and	IBRD/IDA

		substance satisfactory to the Bank.	
Disbursement	Condition-6	Schedule 2, Section III, B, 1(a): for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed USD [20,000,000] may be made for payments made prior to this date but on or after the date falling twelve (12) months before the Signature Date, for Eligible Expenditures under Category (1).	IBRD/IDA
Disbursement	Condition-7	Schedule 2, Section III, B, 1(c): for Emergency Expenditures under Category (3), unless and until all of the following conditions have been met in respect of said expenditures: the Borrower has determined that an Eligible Crisis or Emergency has occurred, and has furnished to the Bank a request to withdraw Loan amounts under Category (4); and (B) the Bank has agreed with such determination, accepted said request and notified the Borrower thereof; and (ii) the Borrower has adopted the CERC Manual and Emergency Action Plan, in form and substance acceptable to the Bank.	IBRD/IDA

I. STRATEGIC CONTEXT

A. Country Context

1. **Brazil's economic activity continued to recover after negative GDP growth in 2014-2019 and the drastic impact of COVID-19.** GDP grew 2.9 percent in 2023, after having achieved the rates of 4.8 percent in 2021 and 3.0 percent in 2022, on the back of robust private consumption, still supported by a strong labor market, fiscal stimulus to social transfers, declining inflation, and the monetary policy easing. A record grain harvest and a favorable external environment also boosted exports in 2023. With economic activity slowing since the second half of 2023 and 2023's unusually high agricultural output not being matched in 2024, GDP growth is expected to moderate to 2.0 percent in 2024. Medium-term growth projections remain at around 2 percent per year, constrained by structural factors limiting total factor productivity (TFP) growth in services and industry sectors. The successful implementation of growth-enhancing structural reforms, including those related to trade openness, market competition, and the business environment could provide a boost to potential growth.

2. **In 2023, the poverty rate (US$6.85 per day) fell again to 21.3 percent, linked to improvements in economic conditions and social protection policies.** Unemployment reached 7.1 percent, the lowest since 2014, reaching women, youth, and Afro-Brazilians. The Bolsa Familia Program helped reduce poverty: coverage expanded by 2 million families, reaching 21.3 million people, with the average monthly transfer increasing from R$394.48 to R$670.36. Finally, the real minimum wage increased by 2.8 percent, boosting the incomes of about 24.5 percent of the households in the bottom 40 percent with at least one formal worker. With sustained job growth, the poverty rate is projected to further decrease to 20.5 percent by 2026.

3. **Although deforestation has diminished by 22.7 percent in the Amazon region in 2023, climate change risks are still pressured by the high levels of land use emissions in the Amazon and Cerrado ecosystems.** Brazil's greenhouse gas (GHG) emissions are dominated by land use change (40.8 percent) and agriculture (31.0 percent). Climate change is altering temperature and rainfall patterns in the country, resulting in reduced water availability and extended droughts; it could push another 800,000 to 3 million Brazilians into extreme poverty as soon as 2030.

B. Sectoral and Institutional Context

4. **The agricultural sector is highly heterogenous.** There are nearly 5 million rural properties distributed over 65 million hectares of land**.** Nearly 3.9 million rural properties are classified as family farms[1, 2, 3]. They represent 77 percent of all rural properties in Brazil. Family farmers[4] often work on less than 100 hectares of land each. The Northeast region holds the highest concentration of family farmers, accounting for 47 percent of all family farms in Brazil. The South region comes in second place with 18 percent, followed by the Southeast region with 17 percent. The North region accounts for 12 percent, and the Center-West region accounts for 5 percent of all family farmers in Brazil. These family farmers co-exist with 1.1 million small, medium, and large-scale commercial farmers. Family farmers are diverse, some are highly

[1] Instituto Brasileiro de Geografia e Estatística. 2017. Censo Agropecuário. Rio de Janeiro.
[2] Law No. 11.326 defines family farmers as: owning land under 4 fiscal modules, family performing most of farm work, significant income come from farm activities, farm must be managed by the owner family, and total annual household income below R$ 360,000.
[3] Fiscal module defines the minimum land size per municipality needed for a family farm to succeed, considering subsistence, social progress, and full dedication to agriculture. This area ranges from 5 to 110 hectares.
[4] Family Farmer means a farmer, as set forth in Federal Law No. 11.326, dated July 24, 2006: (a) who does not have under any tenure regime an area of more than four fiscal modules; (b) who predominantly relies on its own family labor; (c) whose household income predominantly originates in the family farm; and (d) whose family members operate the farm.

productive and commercially oriented, embracing technological innovations[5]. In contrast, others follow subsistence-oriented farming practices, lack market access, and rely on traditional farming methods.

5. **The agrifood sector plays an important role in the national economy and livelihoods of the poor.** The primary agriculture sector accounts for 5 percent of the national GDP, nearly US$175 billion. Considering the back and forward linkages along the entire agrifood system ranging from input providers, farmers, agribusiness firms and distributors, its contribution to the national economy reaches 26 percent of GDP. The primary agricultural sector employs 15 million people, accounting for 20 percent of the national workforce. Brazil is now a top-5 producer of 34 agricultural commodities, and it is the largest net agrifood exporter in the world. Half of its agrifood production, US$123.2 billion, is sold in international markets. The agrifood exports represent 37 percent of Brazil's total exports. Overall, Brazil's agrifood sector has performed well on aggregate. However, many family farmers struggle to make ends meet; rural poverty is estimated to be at 38.7 percent, which is more than twice the urban poverty rate[6]. Also, it is estimated that 1 percent of the rural properties, mostly medium and large-scale farms, generate 50 percent of the gross agricultural value of production[7].

6. **The agrifood sector witnessed an annual growth rate of 2.03 percent in TFP from 1970 to 2017**[8]. The Center-West region demonstrated the most impressive performance, with an annual agricultural TFP growth of 3.9 percent. The South and Southeast regions also experienced significant growth, at 2.43 percent and 1.91 percent respectively. However, the North and Northeast regions saw a decline in agricultural TFP growth rates between 2006 and 2017. This high TFP growth was achieved through investments in: (i) agricultural innovation (i.e., research and development, agricultural extension, and technical assistance); (ii) agriculture finance (i.e., credit and insurance); (iii) infrastructure (i.e., rural roads and irrigation); and (iv) trade liberalization. Small-to-mid-size farmers (20-200 hectares) and those in the North and Northeast of Brazil have recorded the lowest TFP growth through this period. Despite the country's overall improvement in competitiveness, certain regions (i.e., North and Northeast) and specific farmers segments lag behind. Prioritizing agricultural TFP improvements in lagging regions and farmer segments is a priority for Brazil to unlock sectoral further economic growth, while reducing poverty and inequality.

7. **Factors that weigh on Brazil's future agrifood potential.** Despite the recent growth and future potential of the agrifood sector in Brazil, there are several challenges to be overcome.

8. **Challenge #1 – Delivery of last-mile agricultural public goods and services**. The literature shows that agricultural public goods such as rural infrastructure (rural roads, electrification, irrigation, information, and communication technology, etc.) and services (land administration, food safety and agriculture health, agriculture innovation, etc.) are fundamental for addressing food security and sustainable development[9, 10]. Brazil invests only 1 percent of its agricultural GDP on agricultural public goods and services compared to the OECD average of 3.4 percent[11]. As a result, few farmers benefit from them (i.e., 20 percent of farmers benefit from agricultural extension services) and 63 percent of the rural population has experienced food insecurity. This low coverage is compounded by the poor-quality of public goods and services provided[12]. Roads are another example of the challenges of delivering such agricultural public goods in rural areas. In Brazil, roads are essential to moving over 305 million tons of agricultural output between farms and markets annually.

[5] Schwab, K. 2016. The fourth industrial revolution. World Economic Forum.
[6] Instituto Brasileiro de Geografia e Estatistica (IBGE). 2023. Síntese dos indicadores sociais (SIS).
[7] Souza, G., et al. 2018. Imperfeições de mercado e concentração de renda na produção agrícola. Revista de Política Agrícola, ano 27, n. 2, p. 31-38.
[8] Gasques, J.G. et al. 2020. Crescimento e produtividade da agricultura brasileira: uma análise do censo agropecuário," in José Eustáquio Ribeiro Vieira Filho and José Garcia Gasques, eds., Uma jornada pelos contrastes do Brasil. Cem anos de Censo Agropecuário. IPEA. Rio de Janeiro, Brasil.
[9] Atkin, David, and Dave Donaldson. 2015. "Who's Getting Globalized? The Size and Implications of IntraNational Trade Costs." NBER Working Paper.
[10] Porteous, Obie. 2019. "High Trade Costs and Their Consequences: An Estimated Dynamic Model of African Agricultural Storage and Trade." American Economic Journal: Applied Economics 11 (4): 327–66.
[11] Organization for Economic Development (OECD). 2023. Agricultural Policy Monitoring and Evaluation 2023. Adapting Agriculture to Climate Change.
[12] Davis, K., S. C. Babu, and C. Ragasa. 2020. Agricultural Extension: Global Status and Performance in Selected Countries. Washington, DC: International Food Policy Research Institute.

Rural roads near agriculture production areas are often unpaved and in poor condition[13], leading to high transport cost for inputs and outputs[14]. This problem is significant for family farmers located in remote areas. Furthermore, the provision of water supply services is also deficient in Brazil, as acknowledged by the National Program for Rural Water Supply and Sanitation approved in 2019.

9. **Challenge #2 - Building assets for an inclusive agrifood system.** Most family farmers struggle with poverty with household incomes falling below US$1.24 daily threshold. This struggle can be attributed, in part, to the lack of minimum assets endowment. The current literature underscores the crucial role of land administration efforts to secure land tenure and empowering family farmers[15] and highlights the significance of minimum asset ownership for production[16]. Also, recent research provides compelling evidence for the effectiveness of supporting rural households through various productive inclusion phases using a multifaceted "graduation approach[17]" and "productive alliances"[18] programs[19]. These approaches and programs, combining productive asset transfers, technical and business administration assistance, and access to saving accounts, have demonstrably led to long-term sustained increases in income and consumption for participating family farmers, therefore, lifting them out of poverty.

10. **Challenge # 3 – Improving agrifood system sustainability.** Brazil's agrifood sector accounts for nearly one third of total national GHG emissions. When combined with land-use change and forestry, the agrifood sector's contribution reaches 60 percent of the national GHG emissions[20]. In addition, the use of outdated farm technologies and farming practices leads to soil degradation and water pollution. In 2019, Brazil was the fourth largest global consumer of fertilizers. Overuse of fertilizer is associated with leaching of nitrates into groundwater, emission of nitrogen oxides, pollution of soil with toxic heavy metals, and surface runoff of nitrogen and phosphorus. Furthermore, family farmers are highly exposed to extreme weather events (i.e., high spatial and temporal rainfall variability), which combined with low asset's endowment and income levels, make them highly vulnerable to climate change. To address the issue, a simultaneous approach is recommended: (i) implementing environmental policies to halt agricultural frontier expansion (i.e., turning unassigned public lands into protected areas, improving the implementation of the rural environmental cadaster– CAR) and (ii) promoting agriculture intensification of family farmers through the adoption of climate-smart agriculture (CSA)[21] technologies and farming practices.

11. **Challenge #4 - Agrifinancing for sustainable agrifood sector development**. Returns from investing in agrifood production can be highly uncertain because of significant variations in natural conditions and volatility in agrifood markets. Availability of credit heavily influences agrifood systems (i.e., crop and livestock selection, type of production technologies and practices, etc.). Brazil's agrifinance market, which relies on a US$228.5 billion credit market in 2023/24, is dominated

[13] Vieira Filho, José Eustáquio Ribeiro Organizador et al. 2019. Diagnóstico e desafios da agricultura brasileira. Rio de Janeiro: IPEA, 2019.
[14] Brazil ranks 74th on the Road Connectivity Index and 51st logistics performance (LPI). it is lagging peers in the quantity and quality of its infrastructure. By comparison China's rank is 19th and India's 38th on LPI.
[15] Deininger, Klaus. 2003. Land policies for growth and poverty reduction. The World Bank Publications.
[16] Eswaran, Mukesh, and Ashok Kotwal. 1986. "Access to Capital and Agrarian Production Organization." The Economic Journal 96(382): 482-98.
[17] The Bangladeshi organization BRAC (www.brac.net) designed a livelihood program known as the "Graduation approach. This program provides ultra-poor households with a productive asset, training, coaching, access to savings, and consumption support to help them graduate from extreme poverty. The program has been replicated in many countries and rigorously evaluated.
[18] Productive Alliances are business partnerships among the following partners: (i) technical (either private or public), commercial (wholesalers, processors, and/or retailers), and financial (banks) along with producer organizations (POs) designed to strengthen the position of family farmers within agricultural value chains.
[19] Abhijit Banerjee, Dean Karlan, Robert Osei, Hannah Trachtman, Christopher Udry. 2022. Unpacking a multi-faceted program to build sustainable income for the very poor, Journal of Development Economics, Volume 155
[20] According to SEEG, in 2022, Brazil's net GHG emissions were of 1.688 GtCO2e. Agriculture and livestock emitted a net 617 MtCO2e (or 36 percent of total net GHG emissions), while land-use change and forest sector emitted 489 MtCO2e.
[21] CSA farming practices and technologies are defined as those contributing to climate change resilience, and/or climate change mitigation while achieving two or more of the CSA pillars: (i) improving productivity, (ii) adapting and improving resilience to climate change, and (iii) mitigating climate change.

by the private sector providing 67 percent of total credit (US$154 billion). The public sector remains a significant contributor, at 33 percent (US$75 billion from *Plano Safra*). Despite the use of preferential credit schemes as a key agriculture public support policy, only 15 percent of family farmers access credit lines, indicating a pressing need for improved agrifinance accessibility to family farmers[22]. Furthermore, the current available agrifinance instruments could be strengthened to provide incentives for the adoption of CSA practices and technologies, contributing towards improvement in agrifood productivity, environmental goals, and improved livelihoods.

12. **Challenge # 5 – Enhancing women participation on agrifood system development.** Despite comprising over 32 percent of Brazil's farmers, women face marginalization within the agrifood sector. Sociocultural norms limit their access to essential resources such as land, water, financing, inputs, and innovation services[23]. Furthermore, women disproportionately bear the burden of unpaid domestic and caregiving responsibilities. They spend 2.3 times as much time on unpaid domestic and caregiving work than men[24]. Moreover, women's leadership within farmers' organizations, such as cooperatives and community associations, remain underrepresented[25]. Recent findings indicate that female-owned properties are 61 percent less productive[26], on average, than male-owned ones[27]. Female farmers yields are 20-30 percent smaller than those of male farmers[28]. Additionally, agricultural commercialization is lower when farmers' organizations are led by women, as compared to those led by men[29]. Addressing these gender inequalities in the agrifood system of Brazil could improve yields, incomes, and food security.

13. **The Plano Pluriannual (PPA) for 2024-2027, approved by Congress in 2023, is being implemented.** The PPA 2024-27 has three pillars: (i) Social Development and Guarantee of Rights; (ii) Economic Development and Socio-Environmental and Climate Sustainability; and (iii) Defense of Democracy and Reconstruction of the State and Sovereignty. It also proposes five cross-cutting agendas: women, indigenous people, racial equality, children and adolescents, and green action. It involves a renewed emphasis on themes present under President Lula's 2003-10 administrations, new programs (e.g. the Ecological Transformation Plan-ETP) and more ambitious versions of earlier initiatives, such as: (i) the third Growth Acceleration Program (PAC) with US$350 billion in infrastructure-related investments; (ii) the fifth Action Plan for Deforestation Prevention and Control in the Legal Amazon and Cerrado (PPCD-AM and PPCD-Cerrado) to support the control of deforestation; (iii) National Programme for the Conversion of Degraded Pastures into Sustainable Agricultural, Livestock and Forestry Production Systems; (iv) a bolder *Plano Safra*, with more than US$70 billion in credit lines for farmers and a stronger focus on climate mitigation; (v) a new industrial policy, with US$60 billion of financing until 2026; and (vi) the ABC+ Plan aiming to promote adaptation to climate change and reduce GHG emissions.

C. Relevance to Higher Level Objectives

14. **The MPA is aligned with the Country Partnership Framework (CPF) for Brazil CPF (FY24–FY28).** It aligns with the existing CPF Higher Level Objectives (HLOs) of: (i) great productivity and employment; (ii) greater inclusion of the poor and underserved populations; and (iii) greener economy with reduced vulnerability to climate chocks. The MPA's alignment is realized through prioritized investments within the proposed pillars of the MPA. The pillar 1 purpose is to enhance access

[22] Souza, Priscila and Amanda Albuquerque. 2023. Family Farming in Brazil: Inequalities in Credit Access. Rio de Janeiro: Climate Policy Initiative, 2023.
[23] Only 20 percent of women have access to land within the family agriculture segment. Additionally, only 12 percent of women obtain technical assistance (*Censo Agropecuário* – IBGE, 2017).
[24] World Bank Gender Data Portal. 2023. Brazil Country Profile.
[25] Women participation in associative activities is only 5.3 percent, while 12.8 percent two men participate in some type of association. (*Censo Agropecuário* – IBGE, 2017).
[26] Female-owned properties as less capital-intensive, relying on fewer modern inputs, hiring fewer workers, and having limited credit access compared to male-owned properties.
[27] Araujo, R. et al. 2024. Seeds of Disparity: The Gender Land Divide from Brazil's Agricultural Transition (No. dk4bc). Center for Open Science.
[28] Northern Michigan University, 2021. https://nmu.edu/gender/sites/gender/files/2021-01/Martz-GC.GN495-Zine.pdf
[29] In Brazil, farmers sell, on average, 60 percent of their output. Among women led farmers, they only sell 46 percent of their outputs.

to direct support by family farmers (including indigenous people and traditional communities) to overcome market failures. In this case, it will remove liquidity constraints these beneficiaries face when adopting new technologies and farming practices, leading to higher productivity, improved resilience to climate shocks and environmental sustainability. Investments under this pillar could contribute to HLO (i), (ii) and (iii). The pillar 2 aims to strengthen the provision of agricultural public services and goods, with a focus on strengthening agrifood innovation systems, land administration, food safety and agriculture health and rehabilitation and expansion of last mile rural infrastructure. The investments under this pillar could improve agriculture productivity and access to markets in lagging areas. Therefore, the proposed pillar will contribute to the CPF HLO (i) and (ii).

15. **The MPA supports Brazil's Nationally Determined Contribution (NDC) and National Adaptation Plan (NAP).** In the latest update of NDC[30], Brazil pledged to reduce emissions by 48 percent compared to 2005 levels by 2025 and by 53 percent by 2030. Also, Brazil aims to achieve climate neutrality by 2050. The MPA is aligned with these mitigation priorities through the adoption of CSA technologies and practices. Brazil's NAP purpose is to develop adaptation strategies to improve resilience to climate change, ensure food security and increase productivity. The NAP's priorities include improving agricultural risk and vulnerability monitoring and assessing vulnerability to climate change of indigenous people. It also aims to strengthen agricultural extension services to deal with climate change mitigation and adaptation. The MPA will contribute to these efforts through investments to build a more productive and resilient agrifood system. Finally, the MPA responds to the agriculture sector priorities identified in the World Bank Country Climate and Development Report (CCDR) for Brazil[31], which includes increasing agricultural productivity and climate gains as priority actions to be financed. The MPA, furthermore, supports the World Bank's Climate Change Action Plan 2021-25,the Roadmap for Climate Action in Latin America and the Caribbean and the Bank's Green, Resilient and Inclusive Development approach. Finally, the MPA will contribute to gender equity objectives as proposed in the World Bank's Gender Strategy 2024-2030[32].

16. **The proposed MPA is aligned with the Bank's Private Capital Mobilized (PCM) strategy.** The MPA recognizes the role of the private sector in achieving agrifood system transformation. The MPA will support private sector participation through: (i) improving the enabling environment for private sector investments and/or participating in productive alliances[33] (i.e., expanding agrifinancing and direct participation in agrifood investments on family farmers and their Producer Organizations - POs); (ii) creating incentives for the private sector to provide specialized services to POs; and (iii) private sector engagement through procurement of goods and services. To maximize private sector engagement, the MPA will leverage synergies with the International Finance Corporation (IFC) through planned IFC investments when opportunities arise. Also, the MPA will support a better business environment for investment through the improvements in last mile agriculture public goods and services delivery. This would enable private sector investment along different agricultural value chains that are dominated by family farmers. Access to finance is catalyzed through matching grants and support for business development services. The MPA will aim to incorporate private sector solutions and financing in approaches to climate mitigation and adaptation (CCDR). Phase 1 of the MPA, for instance, will prepare POs to interact with market players along agricultural value chains, requiring a minimum co-financing matching grant from them.

[30] Brazil. 2023. Adjustments to the National Determined Contribution to the Paris Agreement under the UNFCCC.
[31] World Bank. 2023. The Brazil Country Climate and Development Report. Washington, DC.

[32]https://www.worldbank.org/en/topic/gender/brief/gender-strategy-update-2024-30-accelerating-equality-and-empowerment-for-all

[33] A Productive Alliance (PA) involves smallholder producer organizations (POs), buyers, and the public sector. These agents are connected through a business plan, which describes the capital and services needs of the POs and proposes improvements that would allow them to upgrade their production capacities and skills to strengthen their linkage to markets. The implementation of business plans is done through subprojects, which are public grants which are matched by the beneficiary POs and buyer(s). The matching grants finances productive assets, technical assistance, and business development.

D. Multiphase Programmatic Approach

(i) Rationale for using an MPA.

17. **Brazil is taking strides towards a sustainable agrifood system, with both federal and state governments tackling issues such as market access, productivity, social inclusion, food security, climate change adaptation and mitigation, and environmental sustainability.** Their combined annual public support to the agrifood sector is estimated to be around US$100-150 billion. However, Brazil's complex three-tiered public system, with a federal government, 26 states, 5,559 municipalities and a federal district creates challenges in coordinating and aligning agricultural public policies and programs across different levels of government. Recognizing this coordination and alignment challenge, the rationale for using the MPA includes the following:

(a) **The MPA Program offers the ability to gradually increase country coverage of agriculture services and public goods (AgPS&G) and direct support to family farmers to address agrifood systems transformation.** The MPA's phased approach allows for the gradual increase of beneficiary coverage, including the provision of AgPS&G and direct support to farmers to transition to sustainable agrifood production systems. The proposed better synchronized national and subnational interventions are important for achieving critical mass and ensuring the long-term viability of the proposed solutions. The modular nature of the MPA accounts for varying levels of readiness and institutional capacity within participating national and subnational governments. By incrementally onboarding participants, the MPA can offer standardized AgPS&G together with targeted direct support, fostering greater replicability and improving the individual projects' success rates.

(b) **The MPA will contribute to a shared vision and long-term engagement across government levels.** The MPA will support a collaborative environment across all levels of government in Brazil, between federal and state governments. The MPA will provide support to transform its fragmented agricultural public support policies and programs landscape into a more cohesive national agrifood development strategy. This will be achieved through three elements: (i) strengthening a shared national vision to guide interventions at the national and subnational level; (ii) developing a menu of investments tailored to the needs and readiness of the different tiers of governments; and (iii) implementing a robust monitoring, evaluation, and knowledge system, which will include impact evaluations of ongoing projects alongside piloting new approaches to strengthen agrifood public policies.

(c) **The proposed MPA will support agrifood policy reforms through policy evaluation for improved policy design**. The MPA will systematically assess existing policies and identify challenges within Brazil's agrifood system. This focuses on evaluations will generate knowledge for policymakers aiming to refine and scale agrifood policies with demonstrably positive outcomes.

(d) **The MPA will also promote operational efficiency by harmonizing, simplifying, and standardizing procedures, processes, and operations**. The MPA will further explore alternative standardization in project design, procurement processes, environmental and social standards, and monitoring and evaluation practices. The MPA will support knowledge dissemination by dedicating resources from each phase to ensure analytical findings and lessons learned are appropriately adapted and shared with relevant stakeholders.

(e) **The MPA better supports long-term strategic approach when compared to standalone Investment Project Financing (IPF) or Program-for-Results (PforR) financing.** While standalone individual operations such as IPFs and/or PforRs are often designed to addresses immediate needs of our clients, they are less suited for tackling more structural problems that needs a long-term engagement and better coordination among national and subnational stakeholders. In contrast, the MPA provides a better framework for long-term strategic engagement and coordination.

(ii) Program Theory of Change (ToC)

18. **The MPA leverages recent research on agrifood sector development, acknowledging that a singular approach cannot address the multifaceted causes of lack of access to markets, low productivity, poor resilience to shocks, and food insecurity**. Recognizing the context-specific nature of these challenges, the program's ToC depicted in **Figure 1** outlines a causal pathway towards achieving program impacts through a three-pillared approach: (i) pillar 1 will improve access to direct support for targeted family farmers and their POs, thereby reducing financial constraints for investment in productive activities; (ii) pillar 2 aims to enhance the delivery of last mile agricultural public goods and services, which will improve the enabling conditions for the agrifood system to develop; and (iii) pillar 3 is a positive feedback loop where governments can repurpose policies towards green, resilient, and inclusive policies within the agrifood system. The MPA's pillars are presented in more detail in the framework section. Incorporated in the overall MPA strategy is a set of activities (social, agronomic, and financial measures) designed to increase resiliency of farmers to shocks (e.g., climate change).

19. **The successful delivery of expected outcomes in the MPA hinges upon several key assumptions:** (a) family farmer's constraints to adopting and maintaining new agricultural technologies and practices (higher-yielding, more profitable, resilience building technologies) do not significantly change; (b) timely development of national-level governance frameworks to facilitate coordination and cooperation between federal and state government levels throughout program implementation; (c) political support to the establishment of effective monitoring and evaluation systems to validate outcomes and steer implementation efforts; (d) food consumers are aware of the benefits of nutrient-rich food; and (e) there is no significant changes to the sectoral environment (business/policy) that affects family farms profitability and/or productivity. The MPA is designed to recognize that the impact pathway from activities to be implemented by each phase to the MPA's impacts is long, complex, and context specific.

(iii) The proposed pillars of the MPA

20. **Pillar #1 – Financing the adoption of CSA.** It will provide direct support to family farmers to adopt CSA technologies and practices tailored to the objectives of each operation. Direct support to farmers could include improving access to input/output markets and increasing productivity (POs and farmers) and/or strengthening climate resilience, food, and nutritional security. Direct support often involves providing matching grants to individuals or their POs together with technical assistance. These time bound direct support programs complement AgPS&G (see pillar 2) by allowing family farmers and POs to overcome market failures. The specifics regarding beneficiary selection and other technical aspects of the proposed interventions within this pillar will be specified in the design of each individual operation under the MPA.

21. **Pillar #2 - Strengthening AgPS&G for agrifood system development.** The AgPS&G supported by the proposed pillar are those public goods and services that are put in place with the main objective of supporting the transformation of agrifood system towards increased competitiveness, productivity, social inclusion, food security, and environmental sustainability. The AgPS&G for family farmers could include: (i) land administration; (ii) agricultural innovation (i.e. research and development and agricultural extension); (iii) agribusiness development services; (iv) and agriculture health and food safety; and (v) rural infrastructure (last-mile) such as irrigation systems (in and off-farm), rural transportation (i.e. rural roads), rural potable water and sanitation services, and/or irrigation, information and communication technology (ICT) for rural areas, and rural electricity.

22. **Pillar #3 - Repurposing and scaling innovative agrifood support policies and programs**. The final pillar is about repurposing agrifood support policies and programs to achieve agrifood system transformation towards people, planet, and economy. In Brazil, there are still significant support policies and programs linked to agriculture credit programs. Also, the level of support to AgPS&G has been overall low and declining in recent years. To achieve agrifood system transformation, there is room to make the current agrifood public policies and program more aligned with climate and environmental goals while increasing support to family farmers who are facing liquidity constraints due market failures. This repurposing could include making direct support to farmers "greener" and shifting and increasing support to AgPS&G.

Finally, the learning agenda of the MPA serves as a crucial instrument for identifying knowledge gaps and pinpointing areas for improvement within existing agrifood policies aiming to support family farmers.

23. **Contingency Emergency Response Component (CERC)**. During project design, participating entities have the option to integrate into their operation a CERC, which enables rapid access to funding to reduce damage to infrastructure, ensure business continuity, and recover more rapidly from a disaster. Following a major disaster, the affected entity may request the World Bank to reallocate resources within their project into the CERC. As a condition for disbursement, an emergency response manual needs to be developed for each participating entity.

(iv) Program Development Objective (PrDO) with Key PrDO Indicators

24. **The MPA Program Development Objective (PrDO) is to enhance resilience of family farmers in targeted States**. The PrDO will be monitored by measuring progress on four program outcomes **(Table 1)**. Each proposed phase of the MPA will contribute to one or more PrDOs indicators, as appropriate, and it will also add relevant intermediary outcome indicators.

Table 1. PrDO outcome indicators for the MPA "Brazilian AgriFood System Transformation"

Program Development Objectives	Unit	Program Indicators
PrDO 1: Enhance resilience of family farmers	%	Increase in gross value of sales by family farmers and rural organizations in the agrifood system (disaggregated by male, female, and youth).
PrDO 2: Enhance resilience of family farmers	Number of people	People fed as a result of increased agricultural/food production (ScoreCard).
PrDO 3: Enhance resilience of family farmers	Hectares	Landscapes under enhanced conservation and/or sustainable management (terrestrial and inland water areas) (ScoreCard).
PrDO 4: Enhance resilience of family farmers	Number of people	People benefiting from increased resilience of livelihoods, jobs or firms (ScoreCard).

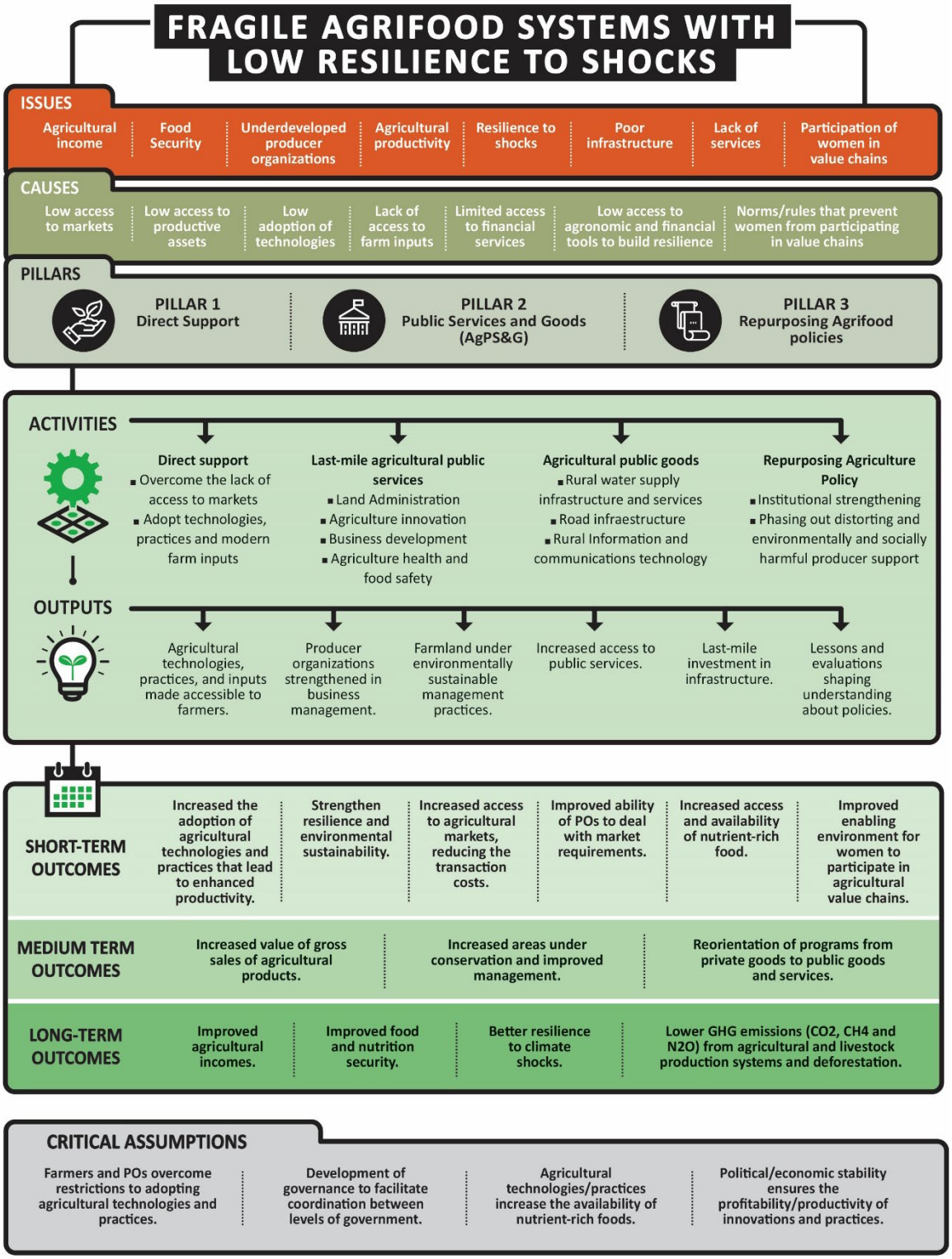
(v) Program Framework.

25. **The Program is designed as a horizontal and simultaneous MPA consisting of twelve phases implemented over a 10-year period with a closing date in 2034.** The total financing envelope for the MPA is up to US$1,602.20 million, which includes up to US$1,289.00 million from IBRD financing and up to US$313.20 million in counterpart financing. The MPA will be prepared in phases as the participating entities achieve readiness to join the MPA. Each phase would consist of one or more individual operations. The participating entities, which include states and federal government, will demonstrate their readiness to join the MPA by submitting letters of intent to the World Bank requesting financing and ensuring sovereign guarantee from the Federal Government through the approvals of Carta Consultas [34].

26. **The participating entities will design their operations to align with the MPA's ToC and PrDOs**. Each entity will choose investments to address their specific agrifood system needs from a broad menu of potential investments defined at the Program level, as described in the pillars of the MPA. This high-level menu of investment facilitates a unified approach towards achieving the Program goals, while adapting to accommodate the varying needs and readiness of different tiers of governments.

[34] Subnational entities may only borrow if the Union agrees to provide IBRD with a repayment guarantee. Several steps are needed to approve and sign a project: (i) the Union must approve the project's concept note (*Carta Consulta - CC*); (ii) a law authorizing the project must be passed by the local assembly (*lei autorizativa*); and (iii) the federal Senate must grant the project approval before loan signing and project effectiveness can take place.

Figure 1. The Theory of Change (ToC) for the Program for the Agrifood System Transformation



27. **Readiness level based on the progress in obtaining *Cartas Consultas***. Currently, three *Cartas Consultas* (Bahia -BA, Pernambuco-PE, and Santa Catarina-SC) have already been approved by the Federal Government. There are three *Cartas Consultas* pending approval (Paraiba-PB, São Paulo-SP and Espírito Santo-ES). There are other six *Cartas Consultas* under development (Ministry of Agrarian Development and Family Farming- MDAFF, Pará-PA, Maranhão-MA, Paraná-PR, Roraima-RR and Ceará-CE). The proposed operations, though aligned with achieving specific PrDOs, are completely self-contained. Therefore, a delay in any operation's preparation due to its readiness will not restrict the progress of others. The first three phases to be approved are Bahia (P180429), Pernambuco (P500431), and Santa Catarina (P506142). The participating entities have all formally expressed interest in participating in the Program.

28. **Given that several "*cartas consultas*" are being developed, the MPA will require flexibility to reallocate budget among operations to accommodate the final amounts approved in each "*carta consulta*".** These adjustments will remain within the limits of the proposed financial envelope. While the final budget, approval date, instrument choice, specific objectives, and environmental risks for each phase will be determined once participating entities design their operations. The MPA will capitalize on existing responsibilities of the MDAFF and Ministry of Agriculture, Livestock and Food Supply (MAPA) to coordinate relevant aspects of the MPA across the participating entities. Their early involvement aims to: (i) facilitate a central coordination mechanism to streamline program execution, (ii) contribute to develop a comprehensive learning agenda to guide knowledge exchange among participating institutions, and (iii) support the design of a monitoring and evaluation framework to assess the program's effectiveness. The World Bank will support this upfront engagement through its implementation support

29. efforts, contributing to MDAFF and MAPA's efforts to provide strategic direction and vision for the entire MPA. **Table 2** presents the estimated program framework.

30. **The MPA will reach roughly 421,000 family farmers (households) directly, corresponding to 1.175 million people across its phases depending on the scope of the interventions in each operation**. These beneficiaries encompass various farmers, including family farmers, indigenous communities, *quilombolas*[35], and traditional communities, particularly women (50 percent of the beneficiaries are expected to women). Also, it will benefit POs including farmers associations and cooperatives. The MPA's impacts extend beyond the direct beneficiaries of the proposed interventions, it will positively influence a broader range of agrifood sector stakeholders, including food consumers, agribusinesses, and government agencies. The targeting of beneficiaries will be done in the design of each phase of the MPA.

[35] A *quilombola* is an Afro-Brazilian resident of quilombo settlements first established by escaped slaves in Brazil.

Table 2. The MPA "Brazilian AgriFood System Transformation" Framework

Phase	Operation ID	Sequential or Simultaneous	Phase's Proposed DO*	IPF or PforR	Estimated IBRD Amount ($ million)	Estimated Co-Financing ($ million)	Estimated Approval Date	Estimated Environmental & Social Risk Rating
1	P180429 (BA)	Simultaneous	To increase market access and agricultural productivity and to develop resilience of family farmers to climate shocks while expanding access to resilient water services in selected rural areas.	IPF	100.00	50.00	Oct 2024	M
2	P500431 (PE)		PDOs will be defined for each phase	IPF	50.00	12.00	Feb 2025	M
3	P506142 (SC)			IPF	120.00	30.00	Mar 2025	M
4	P-TBD (ES)			IPF	119.00	29.70	Feb 2026	M
5	P-TBD (PB)			IPF	70.00	17.50	Feb 2026	M
6	P-TBD (SP)			IPF	160.00	40.00	Jun 2026	M
7	P-TBD (PR)			IPF	100.00	20.00	Aug 2026	M
8	P-TBD (PA)			IPF	120.00	24.00	Oct 2026	H
9	P-TBD (MDAFF)			IPF	100.00	20.00	Dec 2026	M
10	P-TBD (MA)			IPF	100.00	20.00	Jul 2027	M
11	P-TBD (RR)			IPF	100.00	20.00	Dec 2027	H
12	P-TBD (CE)			IPF	**150.00**	**30.00**	May 2029	M
Total					**1,289.00**	**313.20**		
			Revised Financing Envelope		**$ 1,602.20**			

31. **The learning agenda will support the exchange of learning across-state.** The MPA will establish a well-coordinated learning agenda across participating states and the federal government. This agenda will be implemented when feasible through impact evaluations, analytical studies, and operational assessments. These different knowledge products can be curated and synthesized into accessible formats such as technical reports and policy briefs. To further facilitate knowledge exchange, workshops tailored to different target audiences can be carried out to share lessons learned and best practices among participating entities. The funding responsibility for developing and disseminating these knowledge products will lie with the individual projects funded under the MPA.

II. PROJECT DESCRIPTION

32. **The Bahia Sustainable Rural Development Project, serving as the MPA's Phase 1, strongly aligns with the MPA's objectives and approach**. This alignment is achieved by adhering closely to the established Theory of Change (ToC) and contributing directly to the overarching Program Development Objectives (PrDOs). With nearly 14 percent of Brazil's family farmers located within its borders, Bahia represents a significant proportion of the MPA's target beneficiaries. Furthermore, the state's diverse agro-ecological and socioeconomic landscape presents a great opportunity to test and refine the program's strategies across various family farming conditions. Finally, the strong commitment from local authorities in Bahia positions the state as a willing and enthusiastic partner in the MPA. The sectoral background for agriculture and rural water and sanitation services is presented in **Annex 4**.

A. Project Development Objective

(i) PDO Statement

33. To increase market access and agricultural productivity and to develop resilience of family farmers to climate shocks while expanding access to resilient water services in selected rural areas.

(ii) PDO Level Indicators

PDOs	Unit	PDO-Indicator
PDO #1. Increase access to markets, agricultural productivity, and climate change resilience of family farmers	Percentage	i. Market Access: Increase in the gross value of sales of Producer Organizations (POs) - (disaggregated by POs classified as dynamic and in transition to market). ii. Market Access: Increase in agriculture sales for farmers supported by the project. (disaggregated by female-headed, male-headed, and indigenous and traditional communities). iii. Gender: Reducing (%) the inequality in gross sales between female-led and male-led Producer Organizations (POs).
	Number	iv. Agricultural Productivity: Farmers adopting improved agricultural technology (disaggregated by female, male, and youth). v. Resilience to Shocks: People benefiting from increased resilience of livelihoods, jobs or firms (disaggregated by female, male, and youth) (ScoreCard).
PDO #2. Increase access to resilient water services	Number	vi. Access to Drinking Water: People provided with safely managed water (disaggregated by female, male, youth, families-led by indigenous and traditional communities) (ScoreCard).

B. Project Components

34. **Component 1. Increasing agricultural productivity, access to markets, and resilience to shocks *(US$52.51 million IBRD, US$26.38 million from Government of Bahia, and US$8.69 million from private capital*[36]*)*.** This component will finance technical studies, technical assistance (TA), and matching grants to co-finance business and ethnodevelopment plans of POs and to support investments in CSA.

35. **Subcomponent 1.1. Development of business plans and strengthening capacities of POs and family farmers.** It will finance: (i) raising awareness about the matching grant opportunities; (ii) preparation of business plans aiming among other things to increase adoption of CSA technologies and practices; (iii) technical assistance to POs and its member on financial literacy, access to finance, and financial management; (iv) organizational development through learning from successful market-oriented POs; (v) capacity building to POs and its member on food and nutrition security; (vi) capacity building for POs and its members on CSA technologies and good farming practices; (vii) capacity building to POs and its members on issues related to gender with an emphasis on increasing women's participation and inclusion in project activities; (viii) capacity building to technical service providers to enable them to implement the proposed climate resilient innovations of the project; (ix) food marketing studies and specialized technical assistance aiming at sales prospecting in the agrifood system; (x) technical assistance to ensure POs compliance with environmental required licensing towards low-carbon development; (xi) support for POs participation in workshops and events related to food industry and trade shows; (xii) design and development of digital platforms for the delivery and monitoring of agricultural extension services; (xiii) provide access to digital services to improve market access; and (xiv) design of enterprise resource planning (ERP) software and improvements to the Online Bidding Solution (SOL) software. The selection of subprojects will prioritize women, quilombolas, and traditional communities by offering them differentiated scores and specific calls for proposals.

36. **Subcomponent 1.2. Implementation of business and ethno-development plans.** It will co-finance through matching grants the business/ethnodevelopment plans ("Subprojects") designed and approved under subcomponent 1.1. Subprojects under subcomponent 1.2 will be required to incorporate CSA practices and technologies as a criterion for the grant award. The matching grants will co-finance a range of good and services related to the implementation of the approved subprojects including: (i) works - small infrastructure linked to the adoption of climate resilient technologies and farming practices; and (ii) inputs such as plant, equipment, machinery, and tools related to the requirements of the business plan. The beneficiaries will contribute with between 10 to 25 percent of the total cost of the subprojects (cash and in-kind contribution).[37] An evaluation Committee will oversee the selection process of POs subprojects**.** The evaluation committee will include value-chain specific experts, cooperative development specialists, financial sector representatives, business development professionals, and government officials. A draft Project Operating Manual (POM) was prepared by the borrower and will be agreed with the World Bank before the project's effectiveness.

37. **Subcomponent 1.3 - Improving access to complementary agricultural public policies.** It will finance: (i) advisory services to translate the approved subprojects into individualized agriculture credit requests tailored to each family farmer's needs; (ii) advisory services to assist the POs to leverage their developed business/ethnodevelopment plans to access additional credit lines from financial institutions to complement the matching grants awarded by the project when needed;[38] (iii) technical assistance to PO's family farmers on land rights administration to support the completion of essential documentation for land ownership verification, prioritizing land regularization ensuring women are properly registered in the land titles; (iv) support POs in obtaining food safety licenses and certificates, which are required for

[36] Contribution from POs through their members (family farmers) to the business plans as required by the matching grants.
[37] Dynamic POs will contribute at least 20 percent of the total investment in their business plans, transitioning to markets POs at least 15 percent, and productive inclusion POs at least 10 percent of their plan.
[38] The PMU will establish technical cooperation agreements with designated financial institutions such as Banco do Brasil (BB), Banco do Nordeste (BNB), Cooperativas de Crédito Rural com Interação Solidária (CRESOL), Sistema de Cooperativas de Crédito do Brasil (SICOOB), and Programa Nacional de Fortalecimento da Agricultura Familiar (PRONAF). This effort aims to expand the pool of available credit to POs and their members.

market access, through agreements with municipal consortia[39] ("Certification Subprojects"); and (v) technical assistance to ensure compliance with environmental regulations for POs and their members, which is becoming increasingly important for accessing credit lines and markets. Financing under this component will support investments that generate benefits for climate change resilience and mitigation.[40]

38. **Component 2**. **Supplying safe drinking water services to rural communities (*US$27.70 million from IBRD and US$13.85 million from the Government of Bahia*).** While this component will fund water infrastructure to improve food and nutrition security of low-income rural households through the expansion of access to drinking water services from rural dwellers, its main objective will be to support the Bahia's efforts to develop a rural water state policy and bringing about institutional changes in the water sector to mainstream a strategy for managing rural water services. The current policy and institutional setting of the water sector in the state, and specifically the rural water sector, is presented in detail in **Annex 4**. The component will support the implementation of the new "*Centrais de Águas da Bahia*" Program, which will promote the Centers of Community Associations (CCAs), known as '*Centrais de Associações*' to address the chronic failures to reach sustainability of water services[41]. Following the client's priorities, the Project will target only the provision of water services[42]. This component will finance technical assistance (TA) to create and strengthen the CCAs, the infrastructure related to water supply systems, and the social and environmental activities associated with the implementation of the infrastructure. All activities under this component integrate climate change mitigation and adaptation strategies for the beneficiaries.

39. **Subcomponent 2.1. Strengthening and consolidating the multi-community management model for rural water supply services.** This subcomponent will support: (a) the establishment of the management model of "*Centrais de Associações*" in the hubs of Feira de Santana, Ribeira do Pombal and Vitória da Conquista, see map in **Annex 4**. It will finance, through agreements to be entered between CAR and the Centrais ("Centrais Subprojects"): (i) the organization of new CCAs and strengthening of existing ones[43] [44]; (ii) development of management skills, business plans, and training in the administration, operation, and maintenance of water systems. The menu of the technical assistance together with goods and services, may include: programs to control and reduce non-revenue water (NRW) losses, installation of pressure reducing valves, leak detection and control; implement demand management practices, including commercial systems, revenue policies, and customer outreach to promote water conservation and communication strategies with the users before, during, and after extreme weather events to enhance climate resilience[45]; improve supply management, which may include the establishment of information systems to monitor water resource quantity and improvements in maintenance planning; and strengthen social accountability measures to improve customer responsiveness. Workshops on gender, inclusion and water will be conducted to encourage discussions on social roles, gender inequality, the role of women in community organizations, and the importance of access to public sanitation policies. The state's action plan foresees an average time of 24 months to support existing CCAs and 60 months for new ones; and (b) the implementation

[39] Brazil ensures food safety through safety inspections and certifications. Municipal agricultural departments inspect meat, poultry, eggs, and milk, among other food products (Law 1.283/1950). Also, food safety certificates are required for local, regional, and national market access (Law 7.889/1989). However, limited resources, few qualified personnel, and high fixed costs challenge small municipalities in the provision of food safety services. The Public Consortia Law (Law 11.107/2005) provides a solution by allowing municipalities to collaborate, facilitating the delivery food safety services to producers. This project will support these consortiums through public calls for proposal to finance the provision of food safety services via "*consórcios municipais*" to improve food safety and market access for family farmers.

[40] As its activities will ensure the sustainability of CSA practices financed in the business plans from subcomponent 1.1 and 1.2 and the transition to low-carbon and climate resilient development by securing additional financing and access to new markets.

[41] Detailed information on the '*Centrais de Águas da Bahia*' Program, the implementation of CCAs and the results obtained in the Bahia Project (P147157) is presented in Annex 4.

[42] The Bahia Project (P147157) included the provision of rural water and sanitation services. However, it struggled to generate demand for rural household sanitation.

[43] CCAs already organized and working are: Seabra, Jacobina and Caitité

[44] A minimum quota for the participation of women in the management and technical teams of the new *Centrais de Águas* will be negotiated.

[45] This activity will include energy efficiency and climate awareness modules.

of photovoltaic power plants (PVPP) to enhance sustainability and resilience in water systems. It will finance: (i) a feasibility study to evaluate factors like solar irradiance, water demand, existing infrastructure, estimated costs, and climate hazard risks that could negatively impact the solar panels to implement this technology; (ii) engineering designs of PVPP systems, based on the feasibility study, which will consider factors like panel type, inverter capacity, battery storage requirements, and integration with the existing water pumping infrastructure; (iii) purchase and installation of high-quality solar panels, inverters, batteries, and other equipment; and (iv) commissioning and training. Training will be provided to CCAs for maintenance and troubleshooting[46]. This activity will contribute to climate-smart outcomes proposed in the project by promoting renewable energies.

40. **Subcomponent 2.2. Investments in rural water infrastructure and monitoring of service delivery.** This subcomponent will fund the design, construction, and the supervision of investments related to the construction, expansion, and rehabilitation of drinking water supply infrastructure in targeted rural communities, where there has been a prior agreement to utilize the CCAs management model. It will finance, inter alia: (i) water intakes and borehole wells, pumping stations, transmission mains, water storage tanks, water treatment units including disinfection, distribution networks, household connections with water meters and, if applicable, environmental mitigation activities; (ii) technical and operational designs that will include hydrology and climate impact assessments, engineering designs, economic and financial assessments, social and environment aspects including gender and youth inclusion; (iii) the supervision of works; and (iv) promoting social and environmental activities, including: (a) community mobilization and organization to encourage active participation of community users; (b) hygiene and environmental education; (c) providing families with instructions on how to connect households to the water infrastructure system; and (d) fostering tariff payment behavior. Project activities would neither support the design and construction of new dams or rely on existing dams; water is expected to be supplied mostly by borehole wells, and in some specific cases from surface water streams, the hydraulic structures to be built will not fall under the category of storage or regulation dams or structures that could cause significant safety hazards as defined in ESS4. The Project will support the strengthening of the model at state level with the consolidation of the technical assistance provided by the Bahia Water and Sanitation Company (Embasa) and the Environmental Engineering and Water Resources Company of Bahia (Cerb) through its Management Unit of the '*Centrais de Águas da Bahia*' Program (*Gerência de Gestão do Programa de Centrais, Gecen*).

41. **When designing and implementing the systems, Cerb will adopt measures to increase the climate resilience of water services against droughts, inconsistent rainfalls, and increased water scarcity in the semiarid region**, including: (i) reservoirs capacities sized on the basis of the pump's operating time, which will result in the adoption of larger reservoir volumes than recommended in conventional technical literature; (ii) adoption of a safe yield equivalent to a maximum of 70 percent of the well's tested flow rate in case of a decrease of aquifers' production in the future; (iii) demand management to raise awareness on rational water consumption; (iv) use and/or drilling of a complementary well in low yield aquifers; (v) furthermore, when operating the systems, Cerb, through Gecen/Cerb will monitor the operating flow rate of the wells to identify unexpected consumption increases and/or lowering of the flow rate, to protect and prevent the overconsumption and depletion of aquifers.

42. **Component 3. Designing and Scaling Innovative Solutions for Agrifood Production and Commercialization (*US$3.99 million from IBRD and US$1.99 million from the Government of Bahia*).** This component will finance the scaling of innovations that can have a positive impact on the long-term sustainability of the interventions on POs (Component 1).

[46] These mitigation measures will ensure that the systems will keep operating in the case of an unexpected shock.

43. **Subcomponent 3.1. Scaling innovations to improve productivity and access to markets**[47]. It will finance: (i) the implementation of Units of Technological Reference (UTRs[48]); (ii) implementation of experimental fields dedicated for research on CSA technologies; (iii) developing innovative technology licensing to ensure wider adoption of CSA innovations by POs; (iv) the provision of real-time weather data and early warning systems for climate risks to POs; (v) Implement pilot projects to evaluate the carbon footprint of agricultural technologies and practices; (vi) design and implement studies on agroforestry systems and reforestation; (vii) implement an online platform offering technical assistance resources, educational materials[49], and market access information for POs; (viii) strategic market certification for POs (e.g., organic and/or fair-trade); (ix) the establishment of participatory guarantee systems (PGSs) for organic certification together with training programs to equip POs with the skills to manage PGS; (x) advisory services to POs in integrating climate-smart and low carbon development considerations and Environmental, Social, and Governance (ESG) principles into their operations; (xi) acquisition of online platforms[50] to secure online ordering, payment processing solutions, and real-time market price and product availability information systems; (xii) improvements in library of good practices developed by farmers and POs in the Project (the system is called BiblioteCAR); (xiii) technical assistance to implement communication strategies to promote brands and products from POs; and (xiv) promotion of family farmers POs's brands in food events/trade fairs.

44. **Component 4. Contingency Emergency Response Component - CERC (US$0 million).** CERC is a mechanism for Borrowers (Bahia) to access funds rapidly to respond to an eligible crisis or disasters and health emergency. Standard conditions will apply to allow the activation of the CERC and ensure its adequate implementation, completion, and evaluation. An operation manual will detail implementation arrangements including activities that may be included, eligible expenditures, financial management (FM), procurement procedures and methods, as well as environmental and social (E&S) standards management framework for the implementation of CERC related activities.

45. **Component 5. Project Management and Institutional Development (*US$15.56 million IBRD and US$7.78 million from the Government of Bahia*).** It will finance activities related to overall project coordination, including: (i) procurement and financial management; (ii) monitoring and evaluation; (iii) managing compliance with social and environmental standards; (iv) communication; (v) operating expenses and personnel costs of the Project Management Unit (PMU); (vi) information technology equipment, software for project management; (vii) hiring consultants in key project management areas; (viii) capacity building and training for the PMU; (ix) design and implementation of information management and communication systems; and (x) implementation and/or improvement of project management systems. This component will also support the participation of the PMU in the MPA coordination, learning and monitoring efforts. A POM, to be approved by the World Bank before project effectiveness, will detail these aspects (**Annex 2**).

46. **Project estimated cost**. The estimated cost of Phase 1 is US$158.69 million, of which US$100 million is financed with resources from IBRD, US$50 million is co-financing from the State Government of Bahia, and US$8.69 million is co-financing for the subprojects matching grants by POs (private sector). The estimated costs are displayed in **Table 3**.

[47] Based on data from the instruments planned for this subcomponent, US$4.2 million out of US$5 million allocated will finance activities for diffusion of innovative technologies towards increasing climate resilience.
[48] The UTRs are established on family farms. Researchers: (i) set up the UTRs chosen technologies, (ii)monitor performance, yields and resource use, and (iii) show case the results to other farmers. Farmers participate by gaining hands-on experience with the URTs. Implementation typically involves the financing of inputs, labor, travelling, lodging, per diem, and small works.
[49] The Project will introduce agroecological notebooks to help women document their time spent on various activities and to foster awareness about time management.
[50] The Project will develop a disaster risk management plan to ensure continuous operation of systems and platforms under this subcomponent (in points (iv), (vii) and (xi) in the case of an event and it will invest in low-carbon energy sources for their operation.

Table 3. Budget Summary

Components	Project budget USD million				
	IBRD	Co-Financing		Total	Budget share by Component (%)
		Bahia	POs		
Component 1. Increasing access to markets, productivity	52.51	26.38	8.69	87.58	55.18
Component 2. Supplying safe water services to rural communities	27.70	13.85	-	41.55	26.18
Component 3. Designing and scaling innovative solutions	3.98	1.99	-	5.98	3.77
Component 4. Contingency Emergency Response Component/CERC	-	-	-	-	-
Component 5. Project Management/Institutional Strengthening	15.56	7.78	-	23.34	14.71
Front-End-Fee (FEE)	0.25	-	-	0.25	0.16
Total	**100.00**	**50.00**	**8.69**	**158.69**	**100.00**

C. Project Beneficiaries

47. **The project aims to reach at least 155,934 people, nearly 15 percent of the MPA targeted beneficiaries.** Direct beneficiaries include family farmers, indigenous people, *quilombolas*, traditional communities, producer organizations (community associations and cooperatives), and *Centrais* associations. It is estimated that at least 50 percent of beneficiaries, across all project components will be women. For component 1, the estimated number of beneficiaries will reach 36,294 households (100,534 people). For component 2, the estimated number of beneficiaries is nearly 20,000 households (55,400 people). Additional beneficiaries include other food system actors, schools, public and private institutions, federal and state agencies.

D. Rationale for Bank Involvement and Role of Partners

48. **Public sector financing is appropriate as it will be used to (i) address multiple market failures; (ii) deal with deficits in key agriculture services delivery; and (iii) stimulate private sector investment in line with Maximizing Finance for Development (MFD) principles.** As presented previously in the section about the challenges of the agrifood system, no single market failure and/or public policies deficiencies fully explains the lack access to markets, low productivity, environmental degradation, and low resilience to shocks of family farmers. Instead, different combinations of market failures and deficits in government services seem to bind for different farmers and POs. As a result, packages of interventions tailored to the specific needs of each participating entity are considered the most useful approach to improving the outcomes of interest. Therefore, public financing will only be employed to the extent necessary to reach areas where private sector investment incentives are not are not adequate to support family farmers and POs without additional incentives, in line with MFD principles. The Program will finance areas where market failures prevent private sector solutions or investment, in the absence of public sector funding and de-risking. Also, the Program will closely coordinate with IFC to find opportunities to maximize MFD.

49. **The MPA, thus, seeks to overcome these market failures and state deficiencies by: (i) reducing liquidity constraints through great access to financial services and/or smart direct support to farmers and POs (Pillar 1); and (ii) enhancing coverage and quality of agricultural public goods and services (Pillar 2); and (ii).** It is important to highlight that connecting the two areas of intervention mentioned above is the need to improve coordination in agricultural value chains. In this new project, there will be renewed effort from CAR to provide incentives for various agricultural value chain actors to get together to solve problems that restrict farmers from access profitable market opportunities. For instance, the Bahia Project will strength the relations between Embrapa, agricultural extension providers and POs to improve adoption of currently available crop varieties that could improve productivity and resilience to climate change. In

conclusion, the investments proposed in the MPA Program are necessary to fix markets failures, overcome deficits in government services, and improve the investment climate.

50. **Role of Partners.** A critical mass of actors – national and subnational governments, development banks, non-governmental organizations (NGOs), companies, investors, and donors – navigate the complex decisions of designing, funding, and implementing projects to improve agrifood system in Brazil. Recognizing this intricate landscape, the MPA will strategically leverage existing initiatives across Brazil to maximize impact on key outcomes of interest and avoid duplication of efforts. The MDAFF/MAPA intends to establish a Project Coordination Unit (PCU) within its already existing structure that would be solely focused on the coordination of the MPA. This collaborative spirit is exemplified in the Bahia Sustainable Rural Development Project (Phase 1), which brings together key partners like the Interamerican Development Bank (IDB), the International Fund for Agricultural Development (IFAD), the National Economic and Social Development Bank (BNDES), and the French Development Agency (AFD) to build a more comprehensive framework for transformation the agrifoods system.

E. Lessons Learned and Progress on Learning Agenda

51. **Lessons Learned**. The design of the MPA and its Phase 1 (Bahia) capitalizes on lessons learned and recommendations from past and ongoing experiences of agriculture sector operations from the World Bank and partners (see **Table 4**).

Table 4. Lessons Learned and Incorporated into the MPA and Project (Phase 1) Design

Lessons Learned	Lessons Reflected in the Project Design
Lesson #1. Projects focused solely on increasing productivity and production often underperform compared to those that integrate market access into the operation design. [51, 52, 53 and 54]	**The design of the MPA Program addresses, among other things, a critical yet often neglected issue of market access.** For the Bahia's Project (phase 1), it will address the issue of disconnectedness between domestic agricultural production and the demand from urban consumers. More precisely, it will: (i) carry out studies in key markets to understand their characteristics, trends, and business opportunities for POs (subcomponent 1.1 and 3.3); (ii) find potential POs through EOI followed by business plan development and matching grants to strength POs productive capacity (subcomponent 1.2 and 1.3); (iii) streamline connections between farmers and buyers (retailers, wholesalers, processors, exporters) through platforms or marketplaces for product showcasing and negotiation (subcomponent 1.1); and (iv) provided recurrent technical assistance to improve production processes and compliance with food safety standards (subcomponent 1.2).
Lesson #2. Previous projects financed by the Bank (Community Development Driven - CDD and Productive Alliances - PA) in Brazil and Latin America indicates that leveraging	**The design of the MPA and each individual phase will include as guidance the establishment of meaningful partnerships with key institutions and stakeholders that directly and indirectly influence the MPA's and its phases outcomes**. These partnerships will encompass academic institutions, financial institutions, private sector, non-governmental organizations, social movements, and other relevant governmental institutions. For instance, the Bahia Sustainable development Project is entering partnerships with Embrapa, National Service for Industrial Training (SENAI), National Service for Rural Learning (SENAR), commercial banks (public and private), and municipalities.

[51] World Bank. 2022. Toward Productive, Inclusive, and Sustainable Farms and Agribusiness Firms: An Evaluation of the World Bank Group's Support for the Development of Agrifood Economies (2010–20). Independent Evaluation Group. Washington, DC.
[52] World Bank. 2016. "Linking Farmers to Markets through Productive Alliances: An Assessment of the World Bank Experience in Latin America and the Caribbean." World Bank, Washington, DC.
[53] World Bank. 2021a. Malawi – Irrigation, Rural Livelihoods, and Agriculture Development Project. Implementation Completion and Results Report ICR3672. World Bank, Washington, DC.
[54] World Bank. 2021b. National Agricultural Innovation System Support Project (P131013). Implementation Completion and Results Report ICR4054. World Bank, Washington, DC.

partnerships for change is critical[51, 52, 55].	
Lesson # 3. Supply-side support encompassing technical assistance for primary production, processing, business management, and logistics should be tailored to the needs and readiness of farmers and their POs[51, 52, and 56].	**The MPA has been designed to provide tailored technical assistance, financing, and direct support to farmers based on their unique needs, readiness, and capacity.** In Bahia (phase 1), for example, POs will be categorized into two distinct groups: (i) emerging POs - social inclusion and (ii) transitioning POs - overcoming challenges to market access. Two grant windows will be established to address the specific characteristics and hurdles faced by each group (subcomponent 1.2). Alongside these grants for POs, customized technical assistance will be provided to directly address the individual needs and capacities of each POs group (subcomponent 1.1, 1.3, 3.1, 3.2). This approach ensures that participating POs receive the most fitting level of support tailored to their current stage of development.
Lesson # 4. Leveraging sectoral expertise and devising financial management strategies were paramount for project effectiveness[57].	**Recognizing the crucial role of specialized expertise from sectoral agencies involved in public goods and services delivery, such as water and roads, these institutions will be engaged in the MPA**. In the case of Bahia, the rural drinking water services component (Component 2) will rely on technical agencies like Cerb/Embasa. Their experience in water supply will be instrumental in ensuring informed decision-making, efficient resource allocation, and prompt problem-solving throughout the project. Moreover, they will play a pivotal role in incubating *Centrais*, facilitating their technical development until they have acquired capacity to autonomously manage tasks such as repairs, maintenance, and fee collection.
Lesson # 5. To ensure the long-term viability of the interventions proposed, investments must prioritize building resilience against increasingly frequent and severe climate shocks[58, 59].	**To enhance resilience to climate shocks, the MPA will focus on integrating climate change considerations into proposed investments (infrastructure and farmers).** For example, Bahia's project (Phase 1) will invest in technologies and practices that enhance climate resilience, including stress-tolerant seed varieties and insurance. Additionally, Component 2 will ensure that technical designs consider climate-resilient measures to protect groundwater sources, and water demand management, along with contingency plans to address prolonged droughts.

III. PROJECT IMPLEMENTATION

A. Institutional and Implementation Arrangements

For the MPA

52. The World Bank, through its implementation support effort of the various MPA's phases, will work with MDAFF and MAPA in coordinating the Program participation, overseeing monitoring and evaluation activities, and fostering a robust learning agenda for the entire MPA. Each project management unit (PMU) from the participating entities will be staffed with monitoring and evaluation (M&E) and knowledge specialists who will be partially responsible for participating in the MPA learning agenda. Other specialized agencies from the Federal Government may participate in the overall MPA coordination and learning (e.g., Embrapa, National Agency of Technical Assistance – ANATER, Development Banks, among others) as needed to help the MPA's implementation. The implementation of the institutional arrangements for the MPA

[55] World Bank. 2017. Santa Catarina Rural Competitiveness (P118540). Implementation Completion and Results Report ICR4054. World Bank, Washington, DC.
[56] Abdul Latif Jameel Poverty Action Lab (J-PAL). 2023. "Building stable livelihoods for low-income households." J-PAL Policy Insights. Last modified October 2023. https://doi.org/10.31485/pi.2353.2023
[57] World Bank. 2023. Bahia Sustainable Rural Development Project (P147157). Implementation Completion and Results Report. World Bank, Washington, DC.
[58] Kettle, N.P., Trainor, S.F., Edwards, R., Antrobus, D., Baranowski, C., Buxbaum, T., Berry, K., Brubaker, M., De Long, K.L., Fries, S., Holen, D., Keim, B., Meeker, D., Penn, H., Rosa, C., Thoman, R., Walsh, J. Zhang, J. 2023. Building resilience to extreme weather and climate events in the rural water and wastewater sectors. Journal of the American Water Resources Association.
[59] Boucher, S. R., Carter, M. R., Flatnes, J. E., Lybbert, T. J., Malacarne, J. G., Mareyna, P. P., & Paul, L. A. 2024. Bundling Genetic and Financial Technologies for More Resilient and Productive Small-Scale Farmers in Africa. The Economic Journal.

is, however, contingent upon the federal level operation approval and/or trust funds made available for this specific purpose.

For the Bahia Sustainable Development Project (Phase 1).

53. **The borrower is the State of Bahia with the Federative Republic of Brazil serving as the Guarantor. The State Secretariat of Rural Development (SDR) will act as the implementing entity. The SDR will delegate the project implementation to Company of Regional Development and Action (CAR),** who will house a Project Management Unit (PMU). The PMU will oversee the management, coordination, monitoring and evaluation of all project activities and will assume key fiduciary responsibilities. The PMU will have full-time professionals dedicated to technical, operational, and administrative tasks**.** The SDR/CAR have considerable experience working with the proposed PMU, which was acquired through the implementation of previously projects financed by the World Bank[60].

54. Following the lessons learned from the implementation of the previous project, CAR will establish a results-based contract with Luis Eduardo Magalhães Foundation (FLEM), a private non-profit institution that serves as a center for modernization and development of public administration aiming to support public sector project implementation. FLEM will support the PMU in managing the project, including the recruitment of professionals needed for the project's execution. This shared management model has proven to be a good practice in previous World Bank-funded projects in the state of Bahia, offering agility in processes and high rates of professional retention throughout the project's implementation[61].

55. To support the implementation of key activities of the project, CAR will establish cooperation agreements with: (i) federal institutions: EMBRAPA, ANATER, Universidade Federal do Recôncavo Baiano - UFRB, Comissão Executiva do Plano da Lavoura Cacaueira – CEPLAC, Banco do Brasil - BB, and Banco do Nordeste - BNB; (ii) state/municipal level public institutions including: *Agência de Fomento do Estado da Bahia* - DesenBahia, *Superintendência Baiana de Assistência Técnica e Extensão Rural* – BAHIATER, *Agência de Defesa Agropecuaria da Bahia* – ADAB, and *Consórcios Públicos Territoriais*[83]; and (iii) credit cooperatives including: SISCOOOB and CRESOL. A POM will be prepared by the State Government of Bahia and agreed with the World Bank before effectiveness. A POM will detail: (i) roles; (ii) responsibilities, (iii) processes; and (iv) procedures required to implement the project, among other things.

56. **The project will involve the Environmental Engineering and Water Resources Company of Bahia (Cerb), which is part of the State Secretariat of Water Infrastructure and Sanitation (SIHS)**. While CAR is responsible for the implementation, management, coordination, supervision, monitoring, and evaluation of Components (1, 2.1, 3, 4 and 5) of the Project, Cerb will be the implementing entity for subcomponent 2.2, under the overall coordination and supervision from CAR. It will be responsible for the construction of new and rehabilitation of existent rural water supply systems and the social and environmental activities associated with it. Cerb/Gecen will also assist CAR in the monitoring of Component 2.1. CAR will be responsible for setting up the new CCAs and continuing strengthening existing ones under Component 2.1. Cerb will establish a technical agreement with Embasa to: (i) provide technical, commercial, and operational support to the CCAs and (ii) contribute to increase the number of water connections by transferring rural water supply systems from Embasa to *Centrais*. Also, Cerb through Gecen will: (i) support planning and implementation of institutional strengthening for CCAs; (ii) provide technical support for the renewal of environmental regularization processes; (iii) provide technical support for the cadaster and/or update of existing rural water supply systems; (iv) implement the rural water system operational management software to strengthen *Centrais;* (v) provide training for operators of rural water systems, and (vi) monitor and evaluate water flow measurements for household connections. See **Annex 2** for details.

[60] Produzir I (Loan 4623-BR), II (Loan 7327-BR), III (Loan 7732-BR), and Bahia Produtiva (P147157).
[61] FLEM and CAR have had a partnership since 2008, when Mata Branca project was implemented, with a World Bank grant.

B. Results Monitoring, and Evaluation Arrangements

For the MPA Program

57. **To ensure effective implementation and track progress, the MPA for Brazil's agrifood system transformation will utilize a multi-tiered monitoring approach.** A results framework with specific indicators has been established for participating entities at national and subnational levels. Each entity will be responsible for monitoring its progress against this framework, submitting semi-annual reports through their respective PMUs. The World Bank implementation support team will provide technical support for the MDAFF/MAPA to implement the MPA's monitoring, and evaluation framework proposed. A streamlined monitoring system will be designed, contingent on financing for federal level operations or trust funds and implemented to aggregate results and provide individualized dashboards for various stakeholders, including national and subnational governments, and the World Bank. This comprehensive approach will ensure transparency, accountability, as well as facilitate informed decision-making throughout the program's lifecycle.

For the Bahia Sustainable Development Project (Phase 1).

58. **CAR, through the PMU, will monitor and evaluate the project**. The PMU will be responsible for data collection, monitoring, and evaluation (M&E). The M&E responsibilities include collecting, systematizing, and analyzing data to ensure smooth project execution. It will track progress on: (i) indicators of defined in the Results Framework at the end of each semester (biannually); and (ii) activities, products, and intermediary results. The project's M&E strategy is centered on the digital platform DATACAR, which streamlines project information management. In addition, DATACAR incorporates a digital registry of beneficiaries. The project M&E will follow the indicator definitions, data sources, and methodologies as set out in the Results Framework and detailed in a POM. Finally, the indicators related to intermediaries results and outcomes of interest for the MPA Program will be reported to the PCU in charge of consolidating the results of each individual phase being implemented. Finally, the project will rigorously evaluate the impacts of the proposed interventions on components 1 and 2.

C. Sustainability

The Brazil's Agrifood System Transformation - MPA

59. **Brazil demonstrates strong commitment and ownership to the MPA.** The MPA benefits from a demonstrably strong commitment from the borrowers. For the national government, there are sectoral policies that significantly align with the MPA framework. Brazil's National Policy on Climate Change (NPCC) approved in 2009 formalizes their commitment to reducing greenhouse gas emissions (GHG) and adapting agriculture to climate change, aligning perfectly with the MPA's goals. This commitment is further solidified by the development and ongoing updates of the Sectoral Low Carbon Emission and Adaptation to Climate Change Agriculture Plan (ABC+ Plan). These agrifood sector policies, programs and strategies go beyond the MPA 10-year period of execution. In addition, the letter of requests together with the *Cartas Consultas* coming from the state governments to participate in the MPA shows that there is a strong interest in participating in the MPA. All these policies are well funded in Brazil. However, they are still lacking strong coordination mechanisms and a robust learning agenda. Both dimensions will be provided by the MPA.

60. **All interventions under the MPA pillars should have a lasting impact**. The MPA prioritizes interventions with long-term sustainability across its three pillars. Pillar 1, for instance, focuses on enhancing the provision of essential AgPS&G within the agrifood system. Investing in PG&S is recognized as a critical enabler for attracting private sector investment in the agrifood sector's transformation, fostering highly sustainable outcomes. However, in Brazil, recent trends reveal a concerning decline in public support for agrifood AgPS&G, dropping from 3.4 percent of the agricultural value of production (AVP) in 2000-2002 to a mere 0.7 percent in 2020-2022. To ensure Brazil's APS&G keeps pace with sectoral growth, significant investment is crucial. Under pillar 2, the MPA aims to improves access to finance, especially, to family farmers. Financing is also a critical for the long-term transformation of agrifood systems. Environmental sustainability will

be mainstreamed through improved financial support to farmers. Also, the pillar 2 aims to promote smart direct support farmers to address market failures. Finally, pillar 3 is a positive feedback loop where governments can repurpose policies towards green, resilient, and inclusive policies within the agrifood system.

Bahia Sustainable Development Project (Phase 1)

61. **To become sustainable in a competitive market landscape, POs must deliver high-quality products that meet market demands at competitive prices.** Under component 1, the project will mainstream several measures to make the POs selected to be supported competitive. These measures include: (i) prioritize value chains where family farmers can demonstrate a competitive advantage; (ii) require enough co-financing (cash) from POs to increase shared responsibility while leveraging resources from other sources; (iii) business plan development for POs will be provided by professionals who have both business acumen and experience in the POs specific agricultural value chain; (iv) POs' managers and members will be given the necessary know-how in management, sales, and production to translate the business plans into tangible actions for growth; and (v) POs and their members will be strengthened to improve their ability to access financing given the limitation of grants, having adequate equity and debt capital available to finance their business is essential if the POs is going to serve its members competitively.

62. **The sustainability of the water supply systems managed by rural communities hinges on the capacity of the *Centrais*, as crucial actors to scale the delivery of water services to underserved communities.** Newly established *Centrais* will face significant challenges that could hinder their ability to deliver sustainable and reliable water services. These challenges include: (a) limited technical and managerial expertise to operate and maintain their systems; (b) insufficient financial resources to cover operation and maintenance stemming from users' low willingness to pay and/or inefficient revenue collection systems; (c) weak governance and transparency leading to mismanagement, corruption, and lack of accountability; and (d) insufficient community engagement. To address these challenges, the Government of Bahia and the Bank agreed that the new operation would continue providing *Centrais* with management, legal, operational, and technical support from staff in CAR, Cerb, and Embasa. By providing continued support and addressing these challenges, the *Centrais* can evolve – as in other Northeast states with similar systems - into resilient and effective entities, ensuring the long-term sustainability of their water services.

63. **To ensure that the revenues cover the overall costs of the *Centrais*, the construction of well-tailored information systems and dashboards to inform decision making in a clear and timely fashion** are needed and one of two other options: (i) ensure water fees are sufficient: even if not all systems break even, enough revenues must be generated overall to enable cross-subsidization, as has happened in the case of Sisar in Ceará; and (ii) find complementary sources of revenue in case fees are not sufficient. If collected fees do not cover the overall costs and users cannot afford higher fees, Centrals could devise alternative forms of revenue generation (e.g., selling water to water trucks that supply neighboring communities), and these would need to be evaluated for their feasibility and supported in their implementation. The Project will place strong emphasis from the onset in the development and implementation of business plans that take into consideration these factors for each Central.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

64. **The economic and financial analysis (EFA) demonstrates the economic justification of the first phase of MPA Program using the cost-benefit analysis methodology**[62]. The economic analysis shows that the project is economically viable. In the baseline scenario, the project yields a 21 percent economic internal rate of return (EIRR) and a net present

[62] The **Annex 2** presents the economic and financial analysis of the Bahia Sustainable Development Project (phase 1).

value (NPV) of R$ 362 million before accounting for environmental benefits from reducing GHG[63]. The scenarios with economic benefits from reducing GHG are positive: NPV of R$ 620 million for a low carbon price scenario and R$ 876 million for a high carbon price scenario.

65. **For component 1, the financial analysis** is based on 18 models that illustrate possible financial results from business plans financing in seven key subsectors for family farming in Bahia. The results of such models, demonstrate that there are opportunities for feasible businesses in the 7 subsectors. Key-indicators of the analysis include net margins, return on labor, Financial Net Present Value (FNPV), Financial Internal Rate of Return (FIRR).

66. **The economic analysis** is based on the aggregation of the cashflows of the eighteen illustrative cases, converted to economic prices where possible. The models were used to generate the expected project net cashflow for each of the seven subsectors. The total project cashflow analysis considers the phasing in of the total estimated investment in producer organizations – direct (subprojects) and indirect (structuring of technical assistance services, management costs, etc.) – to be made by component 1, component 3 and the beneficiaries' own contributions. Key-indicators of the analysis are Project Net Present Value (NPV), and Project Economic Internal Rate of Return (EIRR). Under this scenario, component 1 and component 3 yield an IRR of 16 percent and an NPV of R$ 107 million at 2023 constant prices.

67. **For Component 2, the financial analysis assessed the expected cashflows of each "*central*".** The '*Centrais*' are expected to make small surpluses of around R$ 0.5 million per year from 2030 onwards, which ensure their financial sustainability. The economic analysis compares the estimated net benefits from accessing adequate water supply services vis-à-vis an irregular supply of untreated water, against the total investment, maintenance, and operational costs of the new systems. Key-indicators of the analysis are Project Net Present Value (NPV), and Project Economic Internal Rate of Return (EIRR). The investment in water supply systems yields an economic EIRR of 44 percent and an NPV of R$ 342 million in 2023 prices considering a discount rate of 10 percent and period of analysis of 15 years.

Table 5. Estimated Economic Results from the Bahia Sustainable Development Project – Phase 1[64]

Components	**Net Present Value (R$ Million)**	**Economic Internal Rate of Return (%)**
Component 1 and 3	107	16
Component 2	342	44
Overall Project, including management costs (component 4)	**364**	**21**

68. **Paris Alignment.** The Project is aligned with the goals of the Paris Agreement on both mitigation and adaptation. Below we describe the assessment of: (i) reduction and adaptation to risks and (ii) reduction and mitigation risks[65].

69. **Assessment and reduction of adaptation risks.** The main climate and disaster risks likely to affect the project are coastal flooding, droughts, inconsistent rainfalls, and water scarcity in the semiarid region, while some areas are more moderately exposed to landslides and extreme temperatures. The project incorporates adaptation measures to reduce risks from natural hazards: (i) the adoption of improved site-specific CSA practices and technologies (component 1); (ii) the construction of water supply infrastructure which will improve drought[66] resilience and renewable energy use (component 2); (iii) the delivery of real-time weather data and early warning systems to farmers; and (iv) the creation of the enabling environment for the adoption of CSA practices and technologies (component 3).

[63] For a discount rate of 10 percent and a period of analysis of 15 years.
[64] The economic and financial analysis used a 10 percent discount rate and time horizon of 15 years.
[65] This is assessed using the three-step World Bank IPF Investment Method for Assessing Paris Alignment. Step 1, which assesses the Project's consistency with the country's climate strategies, is discussed in the Higher-level Objectives section.
[66] Drought will affect water infrastructure by affecting groundwater availability and the presence of days with extreme temperatures could increase evaporation of the resource.

70. **The promotion of CSA cropping systems and livestock climate smart production, alongside soil and water management practices to make more efficient use of natural resources and while improving the sustainable use of biodiversity, will retain soil moisture and rainwater, thus enhancing the resilience of farmers and ecosystems to unreliable rains, high temperatures, and droughts**. The project will also build the capacity of family farmers and the state's water institutions to strengthen their resilience to climate risks. Furthermore, monitoring of groundwater resources will ensure aquifers are not overdrawn by installed boreholes and thus avoid mal-adaptation while elements of the Resilient Water Infrastructure Design Brief will be incorporated to ensure infrastructure is resilient to floods and high temperatures as well.[67] The operation adequately reduces the physical climate risks to the project outcomes, while the project's climate resilience and adaptation design considerations limit the exposure to a low level of residual risk.

71. **Assessment and reduction of mitigation risks.** The project supports activities that are neutral and/or encourage the country's progress toward low-carbon development. Under component 1, the promotion and adoption of CSA practices and technologies and integrated land management (traditional agroforestry systems) are on the Universally Aligned (UA) list and considered to be fully consistent with low-GHG development pathways. Component 1 activities in all value chains, including livestock[68], will promote sustainable intensification on existing productive areas with no expansion, conservation actions into areas of high carbon stocks or high biodiversity, and will be interlinked with integrated land management such as integrated cropland-livestock-forestry systems, improved grassland and pasture management, sustainable management of soil nutrients and soil conservation, promotion of systemic production approaches aiming the adequate use of external synthetic inputs (herbicides, insecticides, fungicides) and other activities that allow the accumulation of carbon in the agricultural soil, all of these activities are on the UA list[69].

72. **Under Component 2, support for rehabilitation of water supply systems, water quality improvement, and water efficiency such as NRW reduction, including use of renewable energy (solar panels) are on the UA list.** Groundwater pumping will utilize solar or other renewable energy sources as much as possible and use of fossil fuel generators as the primary source of energy will be avoided.[70] Any reservoir expansion will avoid high carbon stock or biodiverse areas. Under components 1 and 2, agroforestry activities along with development of solar energy, protection of natural ecosystems approaches and infrastructure, will sequester and reduce GHG emissions. Thus, the Project is aligned with Brazil's climate strategies and plans, and with the country's pathway towards climate-resilient development and low greenhouse gas emissions.

73. **The estimated net carbon balance resulting from GHGs emitted or sequestered during the project implementation and capitalization period (15 years) would bring a mitigation benefit equivalent to 1.3 tCO_2e per hectare, project file contains detailed information.** Using the available data and making several assumptions, the World Bank estimated the net project carbon balance with the Ex-Ante Carbon-balance Tool (EX-ACT) and included the net carbon balance (valued at a low and high shadow price of carbon) in the Project's Economic and Financial Analysis.

B. Fiduciary

(i) Financial Management

74. The FMA concludes that: (i) the FM arrangements for the proposed Project are considered adequate; (ii) the fund's flow, disbursements, monitoring, auditing, and supervision arrangements have been designed in a way to respond to the Project's implementation arrangements; and (iii) the residual FM risk associated with the Project is rated as **Moderate**

[67] To reduce these risks, the Project will design, build, or acquire infrastructure and equipment to prevent the loss or deterioration of investments.
[68] Livestock activities will meet the three pillars of CSA. This will be achieved through technical assistance and investment at the farm level that will the adoption of the following practices: manure management, improvement of traditional raising practices, improvement of animal health, incorporation of trees in pastures, implementation of forage banks, among other things.
[69] See project technical files for the project GHG assessment of crop, livestock, forest, and land use change activities.
[70] The Project will invest in a thorough evaluation of the risk of rising average temperatures bringing a negative impact on the efficiency of photovoltaic panels, to identify the best technology that will allow for mitigation of that risk and its correct operation.

since the FM arrangements are similar to the arrangements of the previous Project[57]. There are no FM-related conditions for negotiations, board, and effectiveness.

75. The FMA identified the following risks to achieving the PDO: (i) Project transactions may not be timely authorized since there is not an internal audit unit to help management effectively implement and assess the risks, especially within the Producer Organizations (POs) grant agreements ("*Convênio*") area; and (ii) Agreement and Contract Administration System (SACC) will need to be customized so that Project transactions can be migrated from the state's Financial Management Information System (FMIS) allowing the generation of Interim Financial Reports (IFRs) per the Bank's format (i.e., category, component, and subcomponent).

76. The risk mitigation measures considered include: (i) hiring an experienced internal auditor to assist the Project with the internal audit compliance-related functions, including assessing the risk related to the Producer Organizations (POs) subprojects established through grant agreements ("*Convênios*") area, and (ii) customizing the SACC system to generate the IFRs per the World Bank's requirements.

(ii) Procurement

77. **Procurement under the Project will be carried out in compliance with the "The World Bank Procurement Regulations for IPF Borrowers" dated September 2023.** The procurement of all activities will be carried out by the CAR, FLEM, Cerb and project beneficiaries. The procurement teams under CAR, FLEM and Cerb are responsible for implementing procurement activities. They have already knowledge about the World Bank's regulations and were trained during the implementation of previous projects. Regarding the other mentioned parties that will be implementing less complex procurement activities, they should be trained on the use of SOL system and all parties will need to follow the procurement processes and rules that must be detailed in a POM. A POM should guide the processes of procurement of goods, works, consulting services, and non-consulting service contracts.

78. **Procurement arrangements shall follow all particularities and context described in the Project Procurement Strategy for Development (PPSD).** The PPSD and Procurement Plan were both prepared during project design, and they have been approved by the World Bank. Due consideration will also be given to sustainability and gender aspects in procurement. Regarding solar panel that are planned to be purchased under the project, prior to beginning the procurement process, the Borrower will undertake market analysis to identify the possible sellers. The World Bank will prior review procurements of solar panels and components to ensure that enhanced provisions are used by the Borrower. The residual Procurement risk associated with the project is rated as **Moderate**. PRAMS was prepared and approved.

C. Legal Operational Policies

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

D. Environmental and Social

79. Overall, this Project is expected to contribute to sustainable, resilient and inclusive rural development, generating positive environmental impacts and eco co-benefits. Notwithstanding, the environmental and social risk classification is proposed as Moderate. This is to account for the project scope and potential environmental and social risks and impacts resulting from the activities related to the small scale primary agricultural production, food processing, and the

construction or rehabilitation works from small rural water supply systems “centrais de água”. The project interventions are small-scale, and community based in nature which are not expected to have any significant or unmitigable social impacts and there will likely be no adverse impacts linked to resettlement or land acquisition. No significant adverse impacts are anticipated. The expected impacts are predictable, site specific, have minimal adverse impacts and easily mitigated. Based on the experience from previous project “Bahia Produtiva”, CAR and CERB (co-executor) has already developed a robust framework, and related systems to manage subprojects’ risks and impacts, including sub projects selection and exclusion criteria, impact identification, and monitoring of performance. To manage the risks and impacts of this project, CAR and CERB worked together and prepared a draft ESMF in accordance with ESF requirements, and strengthen the systems they already have. The ESMF includes criteria for the eligibility of subprojects and an exclusion list including resettlement and activities that cause serious impacts on biodiversity. CAR prepared and published draft versions of the SEP, ESMF, RF and IPPF. Going forward, to manage the risks and impacts from this project, CAR must complete a new updated version of the ESMF during project preparation, in accordance with the requirements from ESF, and strengthen the systems they already have in place.

80. **Citizen Engagement**. The Project has a robust citizen’s engagement approach. The participatory process, that includes consultations during preparation and implementation, will play a key role in engaging with stakeholders and receiving feedback from beneficiaries. The Project will use grassroot-level committees (e.g., Rural Development Forums/Collegiate Bodies and community associations) or other local participatory forum to support community participation and monitoring. The GRM will be linked to the Project’s monitoring and will collect information on beneficiary feedback and close the feedback loop with stakeholders by the indicator: Beneficiaries satisfied with productive investments and water access (Percentage) (Disaggregate by gender, indigenous and traditional communities) Disaggregate by Component 1 beneficiaries and Component 2 beneficiaries. The Project will track the percentage of grievances responded to and resolved, in relation to the delivery of Project’s activities, by the indicator: Complaints and inquiries received through the Grievance Redress Mechanism that are registered and addressed. (Percentage). Culturally appropriate materials and differentiated strategies will be used so that indigenous peoples and vulnerable groups are not excluded from surveys and instruments and monitoring and evaluation strategies.

V. GRIEVANCE REDRESS SERVICES

81. ***Grievance Redress.*** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank’s independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank’s Grievance Redress Service (GRS), visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank’s Accountability Mechanism, visit https://accountability.worldbank.org.

VI. KEY RISKS

82. **The overall risk of the MPA-Program is rated as Moderate.**

83. **Political and governance risk is rated as Moderate**. The risk rating stems from potential administrative changes within the state government over the six-year implementation period of the project (phase 1). To address this risk, the project will employ the following mitigation strategies: (i) provide technical support to ensure continuity and reduce the likelihood of abrupt policy shifts; (ii) strengthen decision-making authority of the PMU to minimizes the impact of political changes; and (iii) strengthen the positive image of the project to ensure it remains acceptable to various political audiences.

84. **Macroeconomic risk is rated as Moderate**. The macroeconomic risk for the project stands at a moderate level. Foremost, inflation remains a concern posing risks to subprojects. To address this, a cost-monitoring system will be implemented, ensuring adjustments are made to accommodate inflationary pressures, thereby safeguarding investment viability. Secondly, despite recent decreases, prevailing high interest rates continue to burden borrowing costs for farmers and POs. To mitigate this, attention will be given to the design of business plans to strengthen subprojects technical and financial viability. Finally, reduced tax revenues or federal transfers could undermine counterpart funding, particularly, if economic growth remains sluggish. A contingency plan will be formulated to address potential counterpart funding issues.

85. **Technical design risk is rated as Moderate**. There is a risk that underinvestment by POs could hinder sustainability of their businesses. In the previous project, farmers were not utilizing credit lines to supplement subprojects investments. Underinvestment could diminish long-term viability of their businesses beyond the initial subproject funding through grants. To mitigate this risk, several activities will be implemented: (i) collaboration with institutions such as Food and Agriculture Organization (FAO), Brazilian Service of Support for Micro and Small Enterprises (SEBRAE), SENAI to improve business plans development; (ii) to ensure efficient oversight and support throughout the subproject lifecycle, a new unit called "Coordination of Implementation and Business Plan Management" will be established in the PMU; and (iii) CAR will hire specialized consultants who will act as a liaison between POs and financial institutions to improve access to existing credit lines by the POs and its members.

86. **Institutional capacity for implementation and sustainability risk is rated as Moderate**. The project relies on two implementing agencies, CAR and Cerb. Both institutions have a proven track record of successful project execution. However, the implementation of the component on agriculture faced significant challenges. The implementation of subprojects relies on POs and their members. This dependence on external entities has resulted in delays and cost overruns in the implementation of subprojects[57]. To address this risk, CAR proposed to establish a dedicated "Coordination of Implementation and Business Plan Management" unit within the PMU. This unit will be tasked with: (i) providing close oversight of activities proposed in the grant agreement between POs and CAR, which will involve regular progress reports, site visits, and communication to identify and address roadblocks promptly; and (ii) clear procedures and requirements in a POM for termination of grant agreements with unresponsive POs.

87. **Fiduciary risk (FM and procurement) is rated as Moderate.** The project leverages FM and procurement arrangements proven during the implementation of the previous project. Consequently, there are no FM and procurement related conditions for project negotiations, board approval, and project effectiveness.

88. **The stakeholder risk is rated as Moderate**. This project will involve numerous institutions from the agrifood system and water sector. Each one of them will perform activities throughout the implementation of the project. Potential conflicts between these institutions could arise and negatively impact project implementation. To mitigate this risk, the project will: (i) establish results-based agreements with collaborating institutions; (ii) establish an ombudsman to address formal complaints and inquiries from stakeholders, civil society, and beneficiaries; and (iii) create a “Coordination for the Management of Grant Agreements” unit to facilitate the proper supervision of grants with POs and other relevant institutions. In addition, the PMU’s Procurement Unit will undergo a strategic strengthening initiative.

VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Period 2	Period 3	Period 4	Period 5	Closing Period
PrDO Outcome: Enhance resilience of family farmers in targeted States.						
Increase in gross value of sales by family farmers and rural organizations in the agri-food system . (Percentage)						
May/2025						May/2036
0						20
People benefiting from increased resilience of livelihoods, jobs or firms (Number of people) CRI						
May/2025						May/2036
0						940,000
➢People benefiting from increased resilience of livelihoods, jobs or firms - Female (Number of people) CRI						
May/2025						May/2036
0						470,000
➢People benefiting from increased resilience of livelihoods, jobs or firms - Youth (Number of people) CRI						
May/2025						May/2036
0						188,000
People fed as a result of increased agricultural/food production (Number of people) CRI						
May/2025						May/2036
0						117,000
➢People fed as a result of increased agricultural/food production - Female (Number of people) CRI						
May/2025						May/2036
0						58,500
➢People fed as a result of increased agricultural/food production - Youth (Number of people) CRI						
May/2025						May/2036
0						23,400
Landscapes under enhanced conservation and/or sustainable management (terrestrial and inland water areas) (Hectare(Ha)) CRI						
May/2025						May/2036
0						147,000
Phase 1 PDO: Increase market access, agricultural productivity and develop resilience of family farmers to climate shocks.						

Phase 1 PDO Indicator 1: Increase gross valeu of sales of rural organizations supported by the project. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	10	10	20	30
➢Increase gross value of sales of dynamic rural organizations supported by the project (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	10	10	20
➢Increase gross value of sales of rural organizations, in market transition, supported by the project (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	20	25	30	40
Phase 1 PDO Indicator 2: Increase the gross value of sales from agricultural activities, for farmers supported by the project. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	10	10	15
➢Increase the gross value of sales from agricultural activities for farmers supported by the project - Female - headed household. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	10	10	15
➢Increase the gross value of sales from agricultural activities for farmers supported by the project - Male-headed household (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	10	10	15
➢Increase the gross value of sales from agricultural activities for farmers supported by the project - Indigenous and traditional communities households (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	10	10	15
Phase 1 PDO Indicator 3: Reduce inequality in gross value of sales between female-led and male-led Producer Organizations (PO). (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	5	10	10
Farmers adopting improved agricultural technology (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	18,800	25,000	29,500	29,500
➢Farmers adopting improved agricultural technology - Female (Number)						
0	0	0	11,000	15,000	17,500	17,500
➢Farmers adopting improved agricultural technology - male (Number)						
0	0	0	7,500	1,000	12,000	12,000
People benefiting from increased resilience of livelihoods, jobs or firms (Number of people) [CRI]						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	17,400	43,500	74,000	87,100

➢People benefiting from increased resilience of livelihoods, jobs or firms - Female (Number of people) CRI						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	10,400	26,000	44,400	52,260
➢People benefiting from increased resilience of livelihoods, jobs or firms - Youth (Number of people) CRI						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	6,900	17,400	29,600	34,800
Phase 1 PDO: Increase access to resilient water services in selected rural areas.						
People provided with safely managed water (Number of people) CRI						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	2,700	19,300	36,100	49,000	55,400
➢People provided with safely managed water - Female (Number of people) CRI						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	1,000	8,000	15,000	20,000	23,200
➢People provided with safely managed water - Youth (Number of people) CRI						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	400	3,200	5,900	8,200	9,000
➢People provided with safely managed water - Indigenous and traditional people (Number of people)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	300	2,300	4,300	5,900	6,400

Intermediate Indicators by Components

Baseline	Period 1	Period 2	Period 3	Period 4	Period 5	Closing Period
Component 1: Increasing agricultural productivity, access to markets, and resilience.						
Rural Organizations that improved their institutional performance index. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	10	15	20	50
➢Disaggregated by dynamics rural organizations (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	50	60	70	80
➢Disaggregate by rural organizations transitioning to the market. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	20	30	40	50

➢Disaggregated by rural organizations of productive inclusion type. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	10	15	25	35
Number of Business Plans (PN) and Ethnodevelopment (PE) promoted. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	400	620	800	800	800	800
➢Approved PN (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	400	600	768	768	768	768
➢Approved PE (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	20	32	32	32	32
➢Implemented PN (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	400	600	768	768
➢Implemented PE (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	5	20	32	32
Number of Rural Organizations adopting improved agro-industrial and commercial practices and technologies (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	12	95	129	129
➢Disaggregated by dynamics rural organizations. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	4	36	46	46
➢Disaggregate by rural organizations transitioning to the market. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	8	59	83	83
➢Disaggregated by PO that adopt CSA practices. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	10	71	100	100
People and businesses using financial services (Number of people)						
	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	3,600	7,200	10,800	12,600
➢People and businesses using financial services – Youth (Number of people)						

	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	720	1,440	2,160	2,520
➢People and businesses using financial services – Female (Number of people)						
	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	1,800	3,600	5,400	6,300
Private capital mobilized to match the project grant (Amount(USD))						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	217	434	868	868
People fed as a result of increased agricultural/food production (Number of people) CRI						
	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	3,000	7,000	10,000	13,000
➢People fed as a result of increased agricultural/food production - Female (Number of people) CRI						
	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	1,800	4,200	6,000	7,800
➢People fed as a result of increased agricultural/food production - Youth (Number of people) CRI						
	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
	0	0	534	1,246	1,780	2,314
Component 2: Supplying safe drinking water services to rural communities.						
Percentage of systems that adopted aquifer resilience actions (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	100	100	100	100	100
Units of renewable energy generation implemented in the water supply centers. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	1	3	5	6
Number of household with a signed term of adhesion to the Central. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	3,000	6,000	9,000	15,000	18,000	20,000
Number water connections implemented by the project. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	1,000	7,000	13,000	18,000	20,000
➢Number of new connections (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	375	2,625	4,875	6,750	7,500
➢Number of recovered connections (Number)						

May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	625	4,375	8,125	11,250	12,500
Number of municipalities with service management agreements signed with the Centrais (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
44	44	49	54	58	64	66
Reduction in time burden of household chores as a result of access to water supply. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	20	20	20	20
Families with better knowledge about hygiene practices. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	0	50	50	50	50
Component 3: Designing and Scaling Innovative Solutions.						
Number of replicators and opinion makers trained in good agricultural practices and technologies that increase climate resilience. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	200	300	500	700	1,200	1,200
Number of Family Farming Brands promoted by the implementation of Communication Plans. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	20	40	80	120	160	160
Component 4: Contingent Emergency Response Component (CERC).						
Component 5: Project Management.						
Beneficiaries satisfied with productive investments and water access (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	80	80	80	80	80
➢Disaggregate by women (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	80	80	80	80	80
➢Disaggregate by indigenous and traditional communities (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	80	80	80	80	80
➢Disaggregate by Component 1 beneficiaries (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	80	80	80	80	80
➢Disaggregate by Component 2 beneficiaries (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031

0	0	75	75	75	75	75
People benefiting from greater gender equality (Number of people)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	17,000	37,000	55,000	58,000	60,000
➢People benefiting from greater gender equality - Female (Number of people)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	17,000	37,000	55,000	58,000	60,000
➢People benefiting from greater gender equality - Youth (Number of people)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	3,400	7,400	11,000	11,600	12,000
Complaints and inquiries received through the Grievance Redress Mechanism that are registered and addressed. (Percentage)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	90	90	90	90	90	90
Number of families directly benefiting from the project. (Number)						
May/2025	May/2026	May/2027	May/2028	May/2029	May/2030	May/2031
0	0	3,500	19,500	36,500	50,500	56,200

Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

PrDO Outocome: Enhance resilience of family farmers in targeted States of Brazil.	
PrDO indicator 1: Increase in gross value of sales by family farmers and rural organizations in agrifood system (Percentage)	
Description	This indicator measures, in percentage terms, the increase in gross sales of agricultural products by family farmers participating in the Program, in relation to the situation prior to the Project. The data must be adjusted for inflation for 2025.
Frequency	Annual.
Data source	Projects monitoring system, Baseline Study, Mid-Term Assessment and Impact Assessment.
Methodology for Data Collection	The increase in the gross value of sales of agricultural products will be measured in the beneficiary families of the subprojects and/or in Rural Organizations, depending on the destination of the investments: family or rural organizations. At the beginning of the Project, during the diagnosis in families and/or Rural Organizations, the project must collect the value of sales before the start of the project (baseline data). During implementation, the project must annually collect the value of sales in Rural Organizations and families where the investment was completed. Data collection can be sampled. Annual values must be updated for inflation (by the Broad National Consumer Price Index – IPCA). If the project carries out an impact assessment, the inflation correction must allow comparison of the result with annual monitoring results.
Responsibility for Data Collection	Project management unit (PMU) of each operation.
PrDO indicator 2: People fed as result of increased agricultural/food production (Number of people)(Disaggregated to youth and women) (ScoreCard).	
Description	The number of people benefiting from interventions by IBRD, IDA, IFC, and MIGA across multiple sectors that strengthen food and nutrition security. These interventions may span the universally accepted dimensions of food and nutrition security, including the availability of food, access to food, utilization of food and the stability of food systems. Examples of such interventions could include operations from a diverse set of thematic areas, such as climate resilient agriculture and food systems; social protection/social safety nets; nutrition services; supply chain, financial and trade finance operations that support food inputs, imports, and distribution of food, etc.; income generation and jobs; water for agriculture; agricultural services, improved practices and technologies; integration of (smallholder) farmers to markets, among others. People fed as result of increased agricultural/food production (including resulting from reduced food loss and waste, improved and/or new irrigation and drain-age services) (WBG SCORECARD FY24-FY30 METHODOLOGY NOTE).
Frequency	Annual.
Data source	Projects monitoring system, Baseline Study, Mid-Term Assessment and Impact Assessment.
Methodology for Data Collection	The indicator reports the number of people fed using the formula.: Calculation Formula – $Number\ of\ People\ Fed$ = **ΣFoodi Caloriei/ 365∗R** Index i represents the food commodity type. Foodi represents the increased or maintained amount of food commodity i produced or traded in by the project (kg). Caloriei represents the unit calorie contained in food commodity i (Kcal/kg). R represents the Minimum Daily Requirement (Kcal). Minimum Daily Requirement: 2000 Kcal Data Source: Nutritive Factor Table, FAO https://www.fao.org/economic/the-statistics-division-ess/publications-studies/publications/nutritive-factors/en/ ; The calculation requires the registration of the production or volume sold in kilograms. It is recommended that the calculation be made for the products targeted by the project, considering that in many cases family farming produces a high diversity of species.

	In the Baseline Study, the project must define which products it will evaluate and record the quantity produced by a sample of beneficiaries. Throughout the implementation, the project must annually monitor the quantity produced in the defined sample. It is expected that the Project's investments related to the adoption of new practices, agricultural technologies and/or increased commercialization will promote the increase of available food and consequently the number of people potentially fed.
Responsibility for Data Collection	Project management unit (PMU) of each operation.
WBG Corporate Scorecard Recommendation:	The WBG Corporate Scorecard Annex on Common Principles to Limit Double Counting provides details related to double counting. All decisions take a conservative approach, erring on the side of under-counting when possible. Preferably, each operation should contribute only one indicator to the WBG Results indicator it is reporting on. In cases where multiple indicators are included from one operation, a conservative approach will be taken to avoid double counting the same beneficiaries by considering in the overall calculations only the highest progress value of the two reported.
PrDO indicator 3: Landscapes under enhanced conservation and/or sustainable management (terrestrial and inland water areas) (ScoreCard) (Hectare).	
Description	The indicator measures the terrestrial and inland/marine aquatic areas (in millions of hectares) that are under enhanced protection, conservation, restoration, and/or sustainable management through operations supported by IBRD, IDA, IFC, and MIGA. This will include the results of work on diverse Landscapes (e.g. forests, grass/shrub lands, woodlands, wetlands, water bodies, watersheds, oases, urban green and blue spaces). These are expected to improve the extent or condition of these areas relating to biodiversity or other ecosystem services and address drivers of nature loss8. Relevant activities may reduce and reverse natural resource degradation, protect and enhance natural habitats and their ecosystem services, and hence provide nature benefits to dependent communities. This indicator does not include terrestrial or aquatic areas managed as offsets for project-related biodiversity impacts (public or private sector). Production landscapes or seascapes (e.g., plantations, agriculture, and aquaculture areas) may be included where practices are applied that result in demonstratable benefits to nature, while not involving conversation of natural habitats (WBG SCORECARD FY24-FY30 METHODOLOGY NOTE).
Frequency	Annual
Data source	Projects monitoring system, Baseline Study, Mid-Term Assessment and Final Evaluation.
Methodology for Data Collection	This indicator relies on the assumption that included activities (e.g. protection and conservation, restoration and sustainable management) result in a beneficial outcome for nature (e.g. biodiversity or other ecosystem services). The phases part of the MPA should quantify the indicator when the Project acts in the Production Landscapes: These areas (e.g., plantations, agriculture, and aquaculture areas) may be included where practices are applied that result in demonstratable benefits to nature, primarily restoration of degraded lands or benefits the larger landscape (on erosion, biodiversity, downstream environmental flow regime, other environmental quality, or addressing other ecosystem degradation) and Nature-based Solutions: These include actions to protect, conserve, restore, and sustainably manage, and restore natural and modified ecosystems, that address societal challenges and benefit both people and nature and can be expressed in hectares. Demonstrable impact to benefit degraded lands or the large landscape will be required for these areas to be included. Documented improvement estimating natural benefits of these solutions is required for the inclusion of the targeted areas. Each phase of the MPA must specify which lines of action/activities will be accounted for according to the context of the Project.
Responsibility for Data Collection	Project management unit (PMU) of each operation.
WBG Corporate Scorecard Recommendation:	The WBG Corporate Scorecard Annex on Common Principles to Limit Double Counting provides details related to double counting. All decisions take a conservative approach, erring on the side of under-counting when possible. Preferably, each operation should contribute only one indicator to the WBG Results indicator it is reporting on. In cases where multiple indicators are included from one operation, a conservative approach will be taken to avoid

	double counting the same beneficiaries by considering in the overall calculations only the highest progress value of the two reported.
PrDO indicator 4: People benefiting from increased resilience of livelihoods, jobs or firms (Number) (Disaggregated by youth, and female) (ScoreCard)	
Description	The number of people directly benefitting from improved climate risk management and increased climate resilience due to eligible investments, including through financial intermediaries, and activities by WB, IFC, and MIGA during the intervention period, where data and methodologies exist. This considers how interventions enhance resilience of their beneficiaries by including structural investments, non-structural or capacity development elements, and improvements to the enabling environments and institutional frameworks for climate resilience. These interventions could include, for example: access to climate-resilient infrastructure, climate-smart agriculture, food, and water, early warning systems, enhanced climate disaster response, and support to livelihoods, education, financial mechanisms, and social safety nets. People captured as beneficiaries with increased climate resilience may be all or a sub-set of targeted project or component beneficiaries, and/or could be a broader population depending on the activity type and reach. (WBG SCORECARD FY24-FY30 METHODOLOGY NOTE).
Frequency	Annual.
Data source	Projects monitoring system, Baseline Study, Mid-Term Assessment and Impact Assessment.
Methodology for Data Collection	This indicator accounts for the number of people who have greater resilience in their livelihoods, jobs and firms. Among the beneficiaries of the MPA, the following can be counted: Farmers and/or members of Producer Organizations provided with knowledge and skills to enhance climate resilience, and/or using/adopting climate-smart technologies or practices, and/or with access to climate-smart agri products/services, and/or Sustainable production labels or certificates, and/or that access to storage facilities rural, and/or, engaged in diversified/weather-independent livelihood activities (that using a diversity of crop varieties or animal breeds promoted by the project), and/or that improved the productions/earns as a result of access to electricity from off-grid renewable energy systems, and/or firms and families that access more resilient markets. In the Progress report, specify which lines of action are promoting increased climate resilience. Each phase of the MPA must specify which lines of action/activities will be accounted for according to the context of the Project. The Baseline Study should quantify and qualify the practices climatic resilience used by farmers to enable tracking change throughout implementation.
Responsibility for Data Collection	Project management unit (PMU) of each operation.
WBG Corporate Scorecard Recommendation:	The WBG Corporate Scorecard Annex on Common Principles to Limit Double Counting provides details related to double counting. All decisions take a conservative approach, erring on the side of under-counting when possible. Preferably, each operation should contribute only one indicator to the WBG Results indicator it is reporting on. In cases where multiple indicators are included from one operation, a conservative approach will be taken to avoid double counting the same beneficiaries by considering in the overall calculations only the highest progress value of the two reported.
Phase 1 – PDO Outcome 1: Improve productivity, access to markets and climate change resilience of family farmers	
Phase 1 – PDO indicator 1: Increase in gross value of sales of Rural Organizations supported by the project. (Percentage) (Disaggregated by PO type)	
Description	Refers to gross sales of productive organizations supported by the project. This indicator will be calculated for the productive organizations of Typology 1 – Dynamics and Typology 2 – Transition to the market (Typology breakdown).
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (Ingá and DataCar monitoring system), Baseline, MTR and Impact Assessment.
Methodology for Data Collection	The monitoring of the Organizations' sales will be monitored every six months by the Ingá Management System and its interface in the Data CAR system. The indicator will be measured in Type 1 and 2 Production Organizations. The value must be adjusted for inflation (with the Broad National Consumer Price Index – IPCA) and compared to the value prior to the investment, collected by the Baseline Study. Baseline data collection and monitoring will be carried out through the Inga System for beneficiaries. For the RMT and Impact Assessment, data collection will be

	by sampling. For final evaluation, the increase must be measured in 1 year or 1 production cycle after the end of the investment in. Calculation Formula – (Sales value of productive organizations in the year of sales / sales value in reference year) - 1)*100.
Responsibility for Data Collection	CAR
Phase 1 – PDO Indicator 2: Increase in family gross value of sales for farmers supported by the project. (Percentage) (Disaggregated by female-household, male-household, and indigenous and traditional communities)	
Description	Description – This indicator measures the sales of the families of farmers from the productive activities funded by the project (Women, Male, Indigenous and traditional communities breakdown).
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (DataCar), Baseline, MTR and Impact Assessment.
Methodology for Data Collection	Calculation Formula – (Family income of productive activity supported by the project during the period of measurement / family income of productive activity supported by the project during the reference period) - 1)*100. This data will be collected from family farmers of productive organizations of Typology 3 – productive inclusion. At final evaluation disaggregated for main productive chains.
Responsibility for Data Collection	CAR
Phase 1 – PDO Indicator 3: Reduce inequality in gross sales between women's and men's Production Organizations.	
Description	Organized female family farmers, supported with subprojects, reducing their income gap by 10 percent with respect to male organized family farmers.
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (Ingá and DataCar), Baseline, MTR and Impact Assessment
Methodology for Data Collection	At the beginning of the project an initial study will be conducted to point out which production chain it is interesting to measure the indicator. Indicator analysis should be done inside the value chain and with organizations with the same profile. Calculation Formula **–** (percentage change in revenue from sales among Pos led by women – percentage change in revenue from sales among Pos led by men).
Responsibility for Data Collection	CAR
Phase 1 – PDO Indicator 4: Farmers adopting improved agricultural technology. (Number) (Disaggregated by female and male)	
Description	This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank. NB: "Agriculture" or "Agricultural" includes crops, livestock, agroforestry, timber and non-timber forest products. Adoption refers to a change of practice or use of a technology introduced or promoted by the project. Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology. Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.
Frequency	Biannual from year 3 onwards
Data source	Project monitoring system (ATER Management System),Baseline, MTR and Impact Assessment
Methodology for Data Collection	The indicator will be calculated based on monitoring of the ATER service. A diagnosis will be carried out in relation to the knowledge and use of the practice by beneficiaries inserted in one of the production chains. Adoption monitoring will be carried out after practical training or investment. It will be computed when at least 1 practice or technology is adopted. The monitoring system will allow the monitoring of practices and technologies adopted, allowing the percentage of adoption per practice to be monitored. The

	Baseline Study should identify the practices and technologies that will be promoted by the projects and how many families have already adopted some practice. The increase must disregard practices already adopted before the project. Adoption will be confirmed when the practices are used for at least 1 production cycle. The target was estimated considering Bahia Produtiva's reach in relation to the adoption of new practices (30 percent of beneficiaries). The target, in terms of number of farmers, is equivalent to 10,800 families. The Baseline will be the preparation of Business Plans and monitoring throughout the execution by the ATER team. A POM will present a list of practices and technologies used in the main production chains.
Responsibility for Data Collection	CAR
Phase 1 – PDO Indicator 5: People benefiting from increased resilience of livelihoods, jobs or firms (Number) (Disaggregated by youth, and female) (ScoreCard)	
Description	The number of people directly benefitting from improved climate risk management and increased climate resilience due to eligible investments, including through financial intermediaries, and ac-tivities by WB, IFC, and MIGA during the intervention period, where data and methodologies exist. This considers how interventions enhance resilience of their beneficiaries by including structural investments, non-structural or capacity development elements, and improvements to the enabling environments and institutional frameworks for climate resilience. These interventions could include, for example: access to climate-resilient infrastructure, climate-smart agriculture, food, and water, early warning systems, enhanced climate disaster response, and support to livelihoods, education, financial mechanisms, and social safety nets. People captured as beneficiaries with increased climate resilience may be all or a sub-set of targeted project or component beneficiaries, and/or could be a broader population depending on the activity type. (WBG SCORECARD FY24-FY30 METHODOLOGY NOTE).
Frequency	Biannual from year 3 onwards
Data source	Project monitoring system (ATER Management System) Baseline, MTR and Impact Assessment
Methodology for Data Collection	Quantify the number of people who have improved their livelihoods, jobs, and businesses. For MPA phase 1, the following should be counted: : Farmers and/or members of Producer Organizations provided with knowledge and skills to enhance climate resilience, and/or using/adopting climate-smart technologies or practices, and/or with access to climate-smart agri products/services, and/or Sustainable production labels or health certifications, and/or that access to storage facilities rural, and/or, engaged in diversified/weather-independent livelihood activities (that using a diversity of crop varieties or animal breeds promoted by the project), and/or that improved the productions/earns as a result of access to electricity from off-grid renewable energy systems, and/or firms and families that access more resilient markets. In the Progress report, specify which lines of action are promoting increased climate resilience. The goal was established considering that all beneficiaries of Typology 1 – Dynamics and Typology 2 – Transition to the market. When it makes sense that the increase in resilience can be extrapolated to other family members, use the IBGE/2022 Census members/household factor = 2.77 in Bahia. When the increase in resilience in Rural Organizations promotes benefits for all members of the Rural Organization, count the number of members. Estimated beneficiaries of Typology 1 – Dynamics and Typology 2 – Transition to the market = 31,400 families, which corresponds to approximately 87,100 number of people. The Baseline Study should quantify and qualify the practices climatic resilience used by farmers to enable tracking change throughout implementation.
Responsibility for Data Collection	CAR
Phase 1 – PDO Outcome 2: Improve access to water in selected rural areas	
Phase 1 – PDO indicator 4: People provided with safely managed water. (Number) (Disaggregated by female, male, youth and indigenous and traditional communities)	

Description	The number of people who benefited from water, sanitation, and/or hygiene services enabled by IBRD, IDA, IFC, and MIGA interventions, as well as people benefiting from improvements in their water, sanitation and/or hygiene facilities and services through rehabilitation works (people that already had access to WASH services but at lower levels of the drinking, sanitation, and handwashing ladders), with the corresponding breakdown for safely managed. Improvements in service (water source, water quality, continuity, reduction in NRW, etc.) will capture beneficiaries that: (i) remain within their level of service provision but experience improvement in service dimensions such as hours of supply, quality of water, continuity or other quantifiable service metric, or (ii) move from lower level service to basic or above, or move from basic to safely managed. The indicator will also capture results from projects delivering services in contexts where only limited service is possible (e.g., public markets, refugee camps, etc.). Definitions of limited, at least basic and safely managed water, sanitation and hygiene are those established by the UNICEF-WHO Joint Monitoring Program (JMP).
Frequency	Biannual from year 2 onwards
Data source	Project monitoring system (CERC/DataCAR) MTR, Final Assessment
Methodology for Data Collection	Number of connections multiplied by average household size conversion factor (2,77 (Censo 2022/IBGE)) **For projects without distribution component (water production, desalinization plants, water reuse):** **The number of people receiving water should be calculated by following these steps:** **Step 1: Calculate expected total water produced (I) in m3 per year (m3/year)** $I=E\times F\times G$ Where: • *E* = Production capacity (m3) - The total capacity of the water production98 project in m3 per day. Source: Project preparation documents such as feasibility studies, technical assessments, IFC industry specialist reports, due diligence reports, etc. • *F* = Capacity at which the plant is expected to operate (%) - The expected operational capacity of the plant as a percentage of its total capacity. The expected operational capacity is a function of the technology, resources availability/cost, and weather patterns among other operational elements. This is a project-specific variable used to estimate production output. Source: Project preparation documents such as feasibility studies, technical assessments, IFC industry specialist reports, due diligence reports, etc. • *G* = Days expected to be operational/year - The number of days per year that the plant is expected to be operational based on project specific context. • *I* = Expected water produced (m3/year) - This step calculates the estimated total water produced per year by the project in m3 per year. **Step 2: Calculate expected residential consumption (J) in m3/year** $J=H\times(I-NRWPL)$ Where: • *H* = % going to residential users (%) - The percentage of the water that is expected to be used by residential users. Source: Project documents (as cited earlier), or if unknown, assume national average based on customer base when available and in national consumption data. • *I* = Expected water produced (m3/year) - Calculated in Step 1. • NRWPL = non-revenue water physical losses99. When information on the percentage equivalent to physical losses is not available, the percentage to be used for this variable will be that of total NRW. Source: Project preparation documents such as feasibility studies, technical assessments, industry reports, due diligence reports, etc. • *J* = Expected residential consumption (m3/year) - This step calculates the estimated water consumption by residential users in m3/year. *For projects focused on reducing non-revenue water*, the expected residential consumption (J) is calculated as follows: J=H×(K×(NRWb- NRWa)) Where, K corresponds to the water delivered by the system in the baseline year (m3/year) and is multiplied by the improvement in non-revenue water (NRW) that is attributable to the intervention.

	The improvement in NRW is calculated, where NRWa corresponds to the NRW for the current year and NRWb corresponds to the percentage of NRW for the base year. NRWa and NRWb are expressed as percentages. **Step 3: Calculate the expected number of beneficiaries.** $Expected\ number\ of\ people\ with\ improved\ service = J/D$ • *J*= Expected residential consumption - The estimated water consumption by residential users calculated in Step 2. • *D* = 365 days * WHO minimum standard of 50 Liters per capita/per day. Source: WHO
Responsibility for Data Collection	Cerb and CAR

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Component 1: Increasing agricultural productivity, access to markets, and resilience.	
Rural Organizations that improved their institutional performance index. (Percentage) (Disaggregated by PO type)	
Description	The performance of the productive organization will be given by calculating the productive organization performance index (IDOP). This calculation is done through the weighted average of the score obtained by applying a questionnaire containing a checklist, with items according to the typology of the productive organization, which takes into account 5 areas: production management (GP), quality management (GQ), financial and accounting management (GF), management of the commercial and market area (GC) of the production organization and Socio-Environmental Sustainability (SS), the latter will assess resilience to the impacts of climate changes. POs will have to score at least in all areas listed in the indexes. The methodology used was based on consolidated tools such as the experience of ATER + Gestão, ScopeInsight and adapted to the Project strategy disaggregated by typology: dynamic, market transition, and productive inclusion).
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (Data CAR), Baseline, RMT, Impact Assessment.
Methodology for Data Collection	Data collection will be performed with the productive organization, through a structured questionnaire in the project monitoring module, which covers the 5 areas: Production Management (GP), Quality Management (GQ), Financial and Accounting Management (GF), Commercial and Market Management (GC) of Productive Organization and Socio -Environmental Sustainability (SS), the latter will assess resilience on the impacts of climate change. OR will have to score minimally in all listed areas of the indexes. Data will be collected from the base line and monitoring will occur annually, allowing to track the evolution of the performance index of supportive productive organizations. Performance improvement is considered when the productive organization scores at least 1 of the items in all 5 areas from the base line. Calculation Formula - (Quantity of Productive Organizations that have improved their performance / total quantitative index of productive organizations) - 1) * 100.
Responsibility for Data Collection	CAR
Number of Business Plans (PN) and Ethnodevelopment (PE) promoted. (Number) (Disaggregated by approved, and concluded)	
Description	This indicator refers to business plans whose planned investments were implemented by productive organizations and plans aimed at indigenous communities (disaggregated by approved PN, approved PE, implemented PN, implemented PE).
Frequency	Biannual from year 1 onwards
Data source	Project monitoring system (Data CAR), Baseline, RMT, Final Assessment.

Methodology for Data Collection	This indicator will be accompanied by the Car Monitoring System, considering the amount of business plans whose investments provided for by the project were completed.
Responsibility for Data Collection	CAR
People and businesses using financial services. (Disaggregated to youth and female) (ScoreCard)	
Description	The number of people, microenterprises, SMEs, and large businesses reached with and actively using financial services by supported by IBRD, IDA, IFC, and MIGA. Financial services include transaction accounts, deposit accounts, mobile money accounts, savings, loans, insurance (including disaster risk insurance), pensions, factoring, leasing, and investment products. The indicator intends to measure active use, in addition to access/ownership, with a view to capturing the longer-term adoption of financial services. The indicator builds on and enhances existing methodologies. Source: WB Operations Portal; ISR/ICR database; IFC Results Measurement System; MIGA Results Measurement System.
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (ATER Management System and CAR Data), Baseline, RMT, Impact Assessment.
Methodology for Data Collection	Strengthening the institutions and capabilities of family farmers should encourage them to seek credit to improve their businesses. The credit accessed must be destined to promote agricultural activity. To calculate this indicator, a base line study will be conducted, which will capture the amount of farmers who accessed credit before project intervention. This indicator will be calculated in a sample and contemplated in the project impact assessment. Calculation Formula: Number of farmers who accessed at least one line of credit
Responsibility for Data Collection	CAR
People fed as result of increased agricultural/food production (Disaggregated to youth and female) (ScoreCard)	
Description	The number of people benefiting from interventions by IBRD, IDA, IFC, and MIGA across multiple sectors that strengthen food and nutrition security. These interventions may span the universally accepted dimensions of food and nutrition security, including the availability of food, access to food, utilization of food and the stability of food systems. Examples of such interventions could include operations from a diverse set of thematic areas, such as climate resilient agriculture and food systems; social protection/social safety nets; nutrition services; supply chain, financial and trade finance operations that support food inputs, imports, and distribution of food, etc.; income generation and jobs; water for agriculture; agricultural services, improved practices and technologies; integration of (smallholder) farmers to markets, among others. The methodology for the indicator is currently under development. Source: WB Operations Portal; ISR/ICR database; IFC Results Measurement System; MIGA Results Measurement System. People fed as result of increased agricultural/food production (including resulting from reduced food loss and waste, improved and/or new irrigation and drain-age services) (WBG SCORECARD FY24-FY30 METHODOLOGY NOTE).
Frequency	Biannual from year 3 onwards
Data source	Project monitoring system (ATER Management System and CAR Data), Baseline, RMT, Final Assessment.
Methodology for Data Collection	The indicator reports the number of people fed using the formula.: Calculation Formula – $\textit{Number of People Fed}$ **= ΣFoodi Caloriei/ 365∗R** Index i represents the food commodity type. Foodi represents the increased or maintained amount of food commodity i produced or traded in by the project (kg). Caloriei represents the unit calorie contained in food commodity i (Kcal/kg). R represents the Minimum Daily Requirement (Kcal). Minimum Daily Requirement: 2000 Kcal Data Source: Nutritive Factor Table, FAO https://www.fao.org/economic/the-statistics-division-ess/publications-studies/publications/nutritive-factors/en/ ;

	The calculation requires the registration of the production or volume sold in kilograms. It is recommended that the calculation be made for the products targeted by the project, considering that in many cases family farming produces a high diversity of species. In the Baseline Study, the project must define which products it will evaluate and record the quantity produced by a sample of beneficiaries. Throughout the implementation, the project must annually monitor the quantity produced in the defined sample. It is expected that the Project's investments related to the adoption of new practices, agricultural technologies and/or increased commercialization will promote the increase of available food and consequently the number of people potentially fed. The Project operates in FNS in Typology 3 - Productive Inclusion, with 4,800 families, corresponding 13,290 number of people.
Responsibility for Data Collection	CAR
Number of Rural Organizations adopting improved agro-industrial and commercial practices and technologies. (Number) (Disaggregated by PO typology)	
Description	Number of POs that have adopted improved agro-industrial and commercial practices and technologies. Adoption is understood as a change in practice or change in the use of a technology that was introduced or promoted by the project. Technology includes a change in practices compared to the practices or technologies currently used by Pos
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (DataCar) Baseline, , ATER Management System, RMT and Impact Assessment.
Methodology for Data Collection	This indicator will be calculated from ATER service monitoring. A diagnosis will be carried out in relation to the knowledge and use of the practice by beneficiaries included in one of the production chains. Adoption monitoring will be carried out after practice training or investment is made. It will be computed when at least 1 practice or technology is adopted. The monitoring system will allow monitoring of practices and technologies adopted, allowing the percentage of adoption per practice to be monitored. The Baseline Study must identify the practices and technologies that will be promoted by the projects and how many ROs have already adopted some practice. The increase must disregard practices already adopted before the project. Adoption will be confirmed when the practices are used for at least 1 production cycle. Data collection will be carried out with the Production Organizations.
Responsibility for Data Collection	CAR
Private capital mobilized to match the project grant (Number (US$))	
Description	Private capital mobilized as beneficiaries contribution to match the project grant
Frequency	Biannual
Data source	Project monitoring system (DataCar)
Methodology for Data Collection	Monitoring report
Responsibility for Data Collection	CAR
Component 2: Supplying safe drinking water services to rural communities	
Percentage of systems that have adopted aquifer resilience actions (Percentage)	
Description	Refers to systems that have adopted climate resilience actions in systems whose capture will take place in aquifers of crystalline masses, such as: Reservoir capacity sized based on pump operating time resulting in the adoption of larger reserve volumes than recommended in the literature technique; use of a maximum of 70 percent of the well flow; social activities to raise awareness of management and rational use of water; monitoring of the operating flow carried out by Gecen and additional well drilling by Cerb when necessary.

Frequency	Biannual from year 2 onwards.
Data source	Project monitoring system (Cerb and DataCar RMT, Final Assessment.
Methodology for Data Collection	All Projects will be designed taking into account the aforementioned resilience criteria. Actions to raise awareness and rational use of water will be developed during the execution of the work and must occur in 100 percent of the SAA implemented/recovered. Monitoring will be carried out by Cerb and reported to the monitoring system. Calculation Formula - (Number of systems that adopted climate resilience actions/ total number of systems implemented in the reference year) * 100.
Responsibility for Data Collection	Cerb
Number of households with a signed term of adhesion to the CCA(Number)	
Description	The number of households with a signed term of adhesion to the CCA
Frequency	Biannual
Data source	Project monitoring system (Cerb and DataCar), RMT, Final Assessment.
Methodology for Data Collection	In the mobilization phase of the community will be made home visits so that the family can sign the individual adhesion term. The action will be carried out by Car and reported to the monitoring system. Calculation Formula - Total number of households with adherence to the signed center.
Responsibility for Data Collection	Cerb
Number of water connections implemented by the Project (Number)	
Description	This indicator refers to the number of new implemented connections and recovered water connections. The accompaniment is performed by Cerb and reported to the monitoring system (disaggregated by new connections and recovered connections).
Frequency	Biannual from year 2 onwards.
Data source	Project monitoring system (Cerb and DataCar), RMT, Final Assessment.
Methodology for Data Collection	Upon completion of the work, Cerb delivers a transfer term to the municipal manager with the number of families benefited in the system, which should sign. This follow -up is carried out by Cerb and reported to the monitoring system.
Responsibility for Data Collection	CAR
Number of municipalities with service management agreements signed with the CCAs (Number)	
Description	This indicator refers to the number of municipalities of the state that have signed management agreements with the *Centrais*. To set up and organize a new Central, the municipal governments need to previously sign up the management agreement adhering to the central model. This procedure is performed from the first institutional approach when the public manager expresses interest and signs the management agreement.
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (Cerb and DataCar), RMT, Final Assessment.
Methodology for Data Collection	This indicator is computed from the adhesion term of signed municipalities. This follow -up will be carried out by the monitoring system. The base line refers to the number of municipalities that present the State Central Services Management Agreement in 2024, adhered to during the previous Bahia Produtiva Project.
Responsibility for Data Collection	Cerb
Reduction in time burden of household chores as a result of access to water supply (Percentage).	
Description	Reduction in time burden to collect water, carried out by women, resulting for securing access to water supply through project investments under component 2.
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (Cerb and DataCar), RMT, Final Assessment.
Methodology for Data Collection	Data will be collected through the survey conducted in the communities through Survey and reported to the monitoring system. The research will be conducted in a sample of communities

	In pre-entrepreneurship will be conducted field research in communities that pre-join the central model to obtain the base line. With 6 months after the implementation of the new system, the Cerb team will return to do time reduction research with household activities and the data will be reported to the monitoring system. The survey will be conducted in 30 percent of systems delivered and operating at least 6 months. Percentage difference between hours per week of household chores dedicated by women at baseline and hours per week of household chores dedicated by women by the end of project.
Responsibility for Data Collection	Cerb
Families with better knowledge about hygiene practices (Percentage).	
Description	This indicator percentage the amount of families benefited by the project that improved their knowledge regarding hygiene practices.
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (Cerb and DataCar), RMT, Impact Assessment.
Methodology for Data Collection	These data will be collected through research with the community that received the system after 3 months of use. The survey will be conducted in 50 percent of the delivered systems. Follow -up will be carried out by Cerb and reported to the monitoring system. Calculation Formula – (Number of families that have improved knowledge about hygiene/ total number of families Component 2))*100).
Responsibility for Data Collection	Cerb
Units of renewable energy generation implemented in water supply systems (Number).	
Description	This indicator refers units installed for renewable energy generation resulting from the implementation of the 3 new centrals and the 3 existing centrals.
Frequency	Biannual from year 3 onwards.
Data source	Project monitoring system (DataCar), RMT, Final Assessment.
Methodology for Data Collection	The data will be collected from the technical monitoring carried out by CAR during periodic on-site visits to the Center.
Responsibility for Data Collection	CAR - Cerb
Component 3: Designing and Scaling Innovative Solutions	
Number of replicators and opinion makers trained in good agricultural practices and technologies that increase climate resilience (Number).	
Description	This indicator measures the amount of replicating subjects and opinion makers (ATER, ACR, organizations representatives) who will provide services to project beneficiaries, trained in good agricultural practices and technologies that increase climate resilience.
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (DataCar, RMT, Final Assessment.
Methodology for Data Collection	These formations will be alignment with the business plan of productive organizations. These data will allow disintegration by type of training. It is noteworthy that, for this indicator, as replicators subjects: professionals of the Technical Assistance and Rural Extension (ATER - end- target 800), Rural Community Agent (ACR- end target - 200), representatives of organizations. Calculation Formula - Total number of replicators and opinion makers trained in practices to expand climate resilience.
Responsibility for Data Collection	CAR
Number of Family Farming Brands promoted by the implementation of Communication Plans (Number).	
Description	This indicator refers to the number of family farming product brands that were promoted and/or communicated (in different media: social networks, websites, E-Commerce digital platforms, podcasts,

	newspapers, TV, magazines or others) in the market as a result project intervention through communication strategies foreseen in the Business Plan, or in a possible strategic marketing plan.
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (DataCar), RMT, Final Assessment.
Methodology for Data Collection	This indicator will be measured considering the marketing and dissemination plan implemented. Monitoring will be carried out in the monitoring system. The Baseline Study must present the number of existing Brands and advertising channels already accessed. The evaluation criteria for this indicator will follow the protocol for monitoring the implementation of business plans.
Responsibility for Data Collection	CAR
Component 4: Contingent Emergency Response Component	
Component 5: Project Management	
Beneficiaries satisfied with productive investments and water access. (Percentage) (Disaggregated to female, youth, indigenous and traditional communities, component 1 and component 2)	
Description	Percentage of beneficiaries that are satisfied with productive investments and water & sanitation access (disaggregate by women, indigenous and traditional communities, Component 1 and Component 2)
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (DataCar), RMT, Final Assessment.
Methodology for Data Collection	Research conducted direction with the beneficiaries. The satisfaction survey will be conducted in the middle ground evaluation and final evaluation. The research must be stratified in the main lines of action of the project, among them: technical assistance, land regularization services, environmental regularization services. Calculation method: (Number of beneficiaries satisfied with the services provided by the project/ number of project beneficiaries)*100
Responsibility for Data Collection	Cerb, and CAR
Complaints and inquiries received through the Grievance Redress Mechanism that are registered and addressed (Percentage)	
Description	Percentage of claims and inquiries received and addressed through the GRM. The GRM will register all Project-related claims received and corresponding responses
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (DataCar)
Methodology for Data Collection	Information regarding interactions with the public will be provided through a response mechanism to the Project's calls and comments. The Project will develop a specific tool to meet these demands. This instrument will allow you to track the date the service was registered and the date it was responded to by the Project, as well as allowing you to categorize the service (complaints, claims, questions). Calculation formula: (Total number of calls resolved / total number of calls) *100
Responsibility for Data Collection	Cerb, and CAR
Number of families directly benefiting from the project (Number)	
Description	Number of families directly benefiting from the project under component 1 and 2, for completed investment (disaggregated by Component 1, and 2)
Frequency	Biannual from year 1 onwards.
Data source	Project monitoring system (DataCar, RMT, Final Assessment.
Methodology for Data Collection	The information counted beneficiaries by CPF to avoid overlapping. This information will be monitored by monitoring systems throughout implementation. The System will allow you to categorize the type of investment and the corresponding component.
Responsibility for Data Collection	Cerb, and CAR
People benefiting from greater gender equality (Number) (Scorecard)	

Description	The number of people directly benefitting from operations supported by the IBRD, IDA, IFC, and MIGA that intentionally seek to advance gender equality. This indicator measures beneficiaries of gender equality outcomes, including: (i) ending gender-based violence; (ii) building and protecting human capital; (iii) accessing more and better jobs; (iv) expanding ownership and use of assets; (v) expanding access and use of services that enable economic participation; and (vi) advancing women's leadership. Gender analysis and strong theories of change will be produced at design stage to inform what are the actions associated with gender equality outcomes. These actions will be linked to specific indicators in the results frameworks, which will be the basis for aggregation on the Scorecard indicator. Not all WBG actions to advance gender equality include measurable beneficiaries—for example support to strengthen institutions, build capacity, or reform policies. These are not included in the count but may be analyzed in Results Narratives. The methodology for the indicator is currently under development. Source: WB Operations Portal; ISR/ICR database; IFC Results Measurement System; MIGA Results Measurement System.
Frequency	Biannual
Data source	Project monitoring system (DataCar)
Methodology for Data Collection	It counts the number of women directly beneficiaries capable of expanding the ownership and use of assets and services that allow greater economic participation. Includes beneficiary of investments, trained in rural organization management, accessed equipment, services, line of credit and served by ATER.
Responsibility for Data Collection	CAR, and Cerb.

ANNEX 1: Implementation Arrangements and Support Plan

A. MPA PROGRAM

1. **Institutional Arrangements**. The World Bank, through its implementation support effort of the various phases, will work with the Ministry of Agrarian Development and Family Farming (MDAFF) and Ministry of Agriculture, Livestock and Food Supply (MAPA) in coordinating participation, overseeing monitoring and evaluation activities, and fostering a robust learning agenda for the entire MPA. Each Project Management Unit (PMU) will be staffed with monitoring and evaluation (M&E) and knowledge specialists who will be partially responsible for participating in the MPA learning agenda. Other specialized agencies from the Federal Government may participate in the overall MPA coordination and learning agenda (i.e., Embrapa, National Agency of Technical Assistance - ANATER, Development Banks, among others) as needed to help the MPA's implementation. The implementation of institutional arrangements for the MPA is, however, contingent upon on the federal level operation approval and/or trust funds made available for this specific purpose.

2. **To ensure effective implementation and track progress, the MPA Program for Brazil's AgriFood System Transformation will utilize a multi-tiered monitoring approach.** A results framework with specific indicators has been established for participating entities at national and subnational levels. Each entity will be responsible for monitoring its progress against this framework, submitting semi-annual reports through their respective PMUs. The federal government through the MDAFF and MAPA will oversee the entire MPA Program's monitoring and reporting. A streamlined monitoring system will be designed and implemented to aggregate results and provide individualized dashboards for various stakeholders, including national and subnational governments, and the World Bank. This comprehensive approach will ensure transparency, accountability, as well as facilitate informed decision-making throughout the program's lifecycle. The learning agenda could target key areas of knowledge gap critical for support family farmers. These areas may include:

    (a) **Designing and Delivering Effective Extension Services**: Research will explore methods to optimize the delivery of agricultural knowledge and resources to farmers.

    (b) **Reducing Barriers to Technology Adoption:** Projects will investigate ways to overcome obstacles hindering farmers' uptake of new technologies.

    (c) **Enhancing Market Linkages for Farmers**: Research will focus on improving strategies to connect farmers to profitable markets for their produce.

    (d) **Financial and Agronomic Innovations for Inclusive Growth and Resilience**: Projects will explore the development of financial instruments and agronomic practices that promote inclusive growth and agricultural resilience.

    (e) **Streamlining Operational Instruments for Investment Implementation**: Research will aim to identify and refine operational tools that facilitate efficient implementation of agricultural investments.

B. BAHIA SUSTAINABLE RURAL DEVELOPMENT PROJECT – PHASE 1

3. **The borrower is the State of Bahia with the Federative Republic of Brazil serving as the Guarantor. The Company of Regional Development and Action (CAR), which is affiliated with the State Secretariat of Rural Development (SDR), will act as the implementing entity.** CAR will house a Project Management Unit (PMU). The PMU will oversee the management, coordination, monitoring and evaluation of all project activities and will assume key fiduciary responsibilities. The PMU will have full-time professionals dedicated to technical, operational, and administrative

tasks**.** The SDR/CAR have considerable experience working with the proposed PMU, which was acquired through the implementation of previously projects financed by the World Bank[71]. Following the experience of the previous project, CAR will enter into a contract with Luis Eduardo Magalhães Foundation (FLEM) - a private non-profit institution that serves as a center for modernization and development of public administration, who will support the PMU in managing the project, including the recruitment of professionals needed for the Project's execution.

4. **The proposed management model has proven to be a best practice in previous World Bank-funded projects, offering agility in processes and high rates of professional retention throughout implementation**[72]. To support technically the implementation of key activities of the Program, CAR will establish cooperation agreements with federal (EMBRAPA, *Agência Nacional de Assistência Técnica e Extensão Rural* - Anater, *Comissão Executiva do Plano da Lavoura Cacaueira* - Ceplac), Superintendência Baiana de Assistência Técnica e Extensão Rural -BAHIATER, Consorcios Públicos Territoriais**,** Universidade Federal do Recôncavo Baiano - UFRB) and financing institutions (Banco do Brasil - BB, Banco do Nordeste - BNB, Conselho Gestor do Fundo Rotatório (Cogefur), and Credit Cooperatives (Credit Union System of Brazil – Siscoob; and Credit Union – Sicredi S.A.). A POM will be prepared by the State Government of Bahia and agreed with the World Bank before effectiveness. A POM will detail: (i) roles; (ii) responsibilities, (iii) processes and (iv) procedures required to implement the project.

5. **The Project will involve the Environmental Engineering and Water Resources Company of Bahia (Cerb), which is part of the State Secretariat of Water Infrastructure and Sanitation (SIHS)**. Cerb will be the implementing entity for Component 2.2, under overall coordination of CAR. It will be responsible for the construction of new and rehabilitation of existent rural water supply systems and the social and environmental activities associated with them. CAR will be responsible for setting up the new CCAs and continuing strengthening the existing ones under Component 2.1. To implement the component 2.2, Cerb will establish technical agreements with Embasa to: (i) provide technical, commercial, and operational support to the CCAs, and (ii) contribute to increase the number of water connections by transferring rural water supply systems from Embasa to *Centrais*. Also, Cerb through Gecen will: (i) support planning and implementation of institutional strengthening for CCAs (ii) provide technical support for the renewal of environmental regularization processes; (iii) provide technical support for the cadaster and/or update of existing rural water supply systems; (iv) implement the rural water system operational management software to strengthen *Centrais*: (v) provide training for operators of rural water systems; and (vi) monitor and evaluate water flow measurements for household connections. The institutional arrangement is presented in the **Figure 2.**

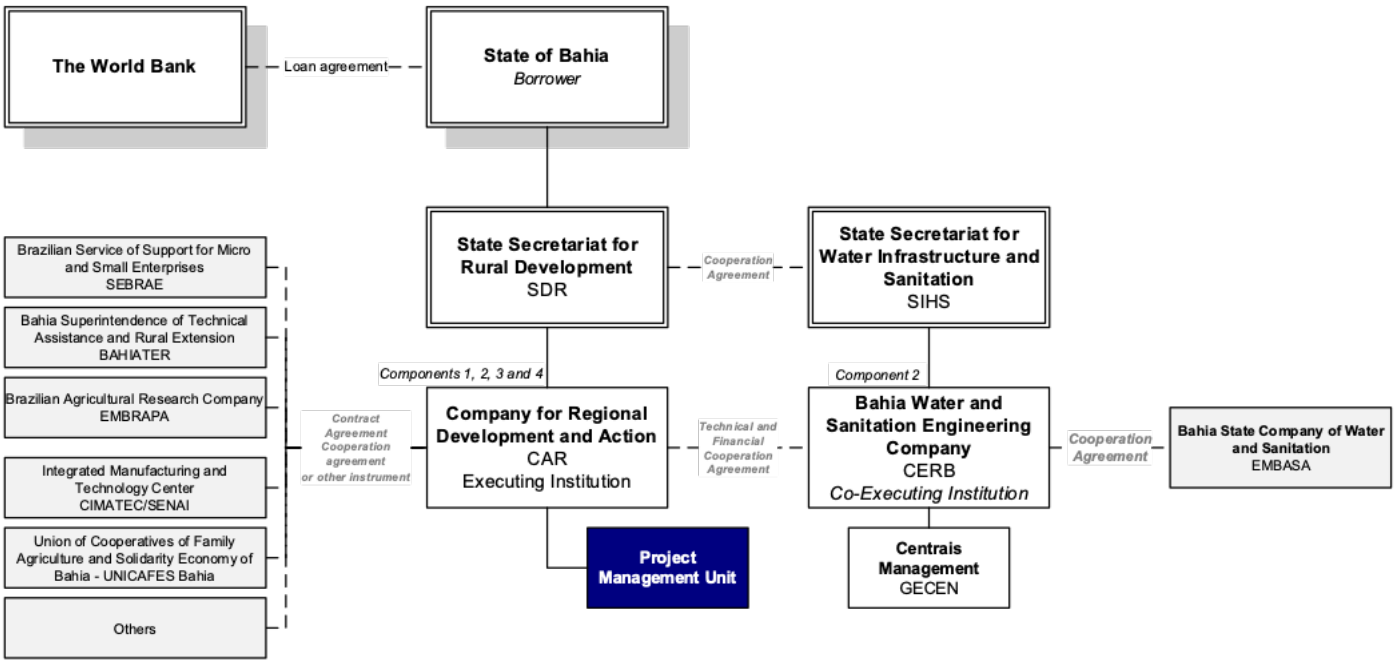
6. **Staffing.** The PMU/CAR team consists of a project coordinator, CAR technical staff, and qualified professionals with previous experience in implementing World Bank projects. It is envisaged that full-time professionals will be divided into 5 departments: technical coordination (Implementation and Business Plan Management, Market Intelligence and Management, Innovation and Technical Assistance, Water Systems Management, and Territorial Technical Assistance), 4 administrative coordination (Finance and Accounting, Monitoring and Evaluation, Agreement and Covenant Management, and Procurement), and 4 Advisories (Capacity Development, Environmental and Social, Administrative, and Technical).

7. New hires will be made by the *Luís Eduardo Magalhães* Foundation (FLEM), a non-profit institution that serves as an institute for modernization and development of public administration. CAR will contract FLEM to support project management, including recruiting necessary professionals for the PMU. This shared management model has proven to be a best practice in previous World Bank-funded projects, offering agility in processes and high rates of professional retention throughout implementation. Cerb will also have full-time company professionals assigned to various positions responsible for implementing Component 2 activities, including the following: (i) financial

[71] Produzir I (Loan 4623-BR), II (Loan 7327-BR), III (Loan 7732-BR), and Bahia Produtiva (P147157).
[72] FLEM and CAR have had a partnership since 2008, when Mata Branca project was implemented, with a World Bank grant.

management department; (ii) legal counseling department; (iii) procurement commission; (iv) electrification department; (v) social activities department; (vi) studies and projects department; (vii) hydrogeology department; and (viii) works and services department. Communications will be handled by the CAR Communications Advisory Team (ASCOM), with Cerb support for Component 2, in cooperation with the PMU/CAR Ombudsman, which will process demands and complaints from civil society and individuals.

Figure 2. General Project Implementation



8. **The Project's internal control system will be documented in a POM**. This manual will detail personnel functions and minimum requirements, procedures, project responsibility assignments, product execution flow, and guidelines for disbursements, payments, approvals, commitments, and reporting, monitoring, and evaluation processes. A draft POM was submitted to the Bank for review on April 19, 2024. A POM developed by the PMU/CAR, approved by the Bank, should be maintained/updated throughout the duration of the Project. The detailed institutional arrangements are presented in **Figures 3** and **4**.

Figure 3. Organizational chart of the PMU-CAR

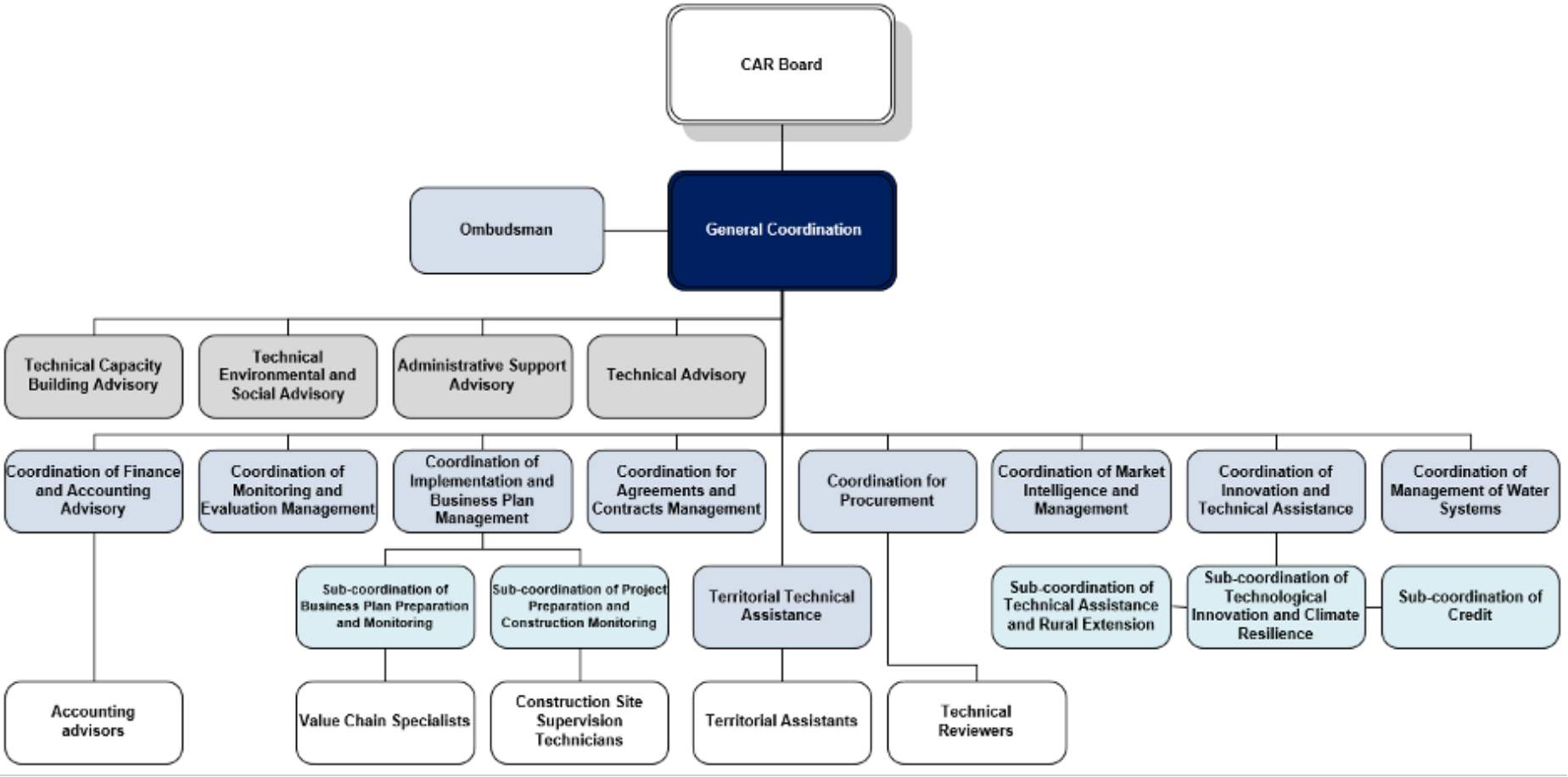
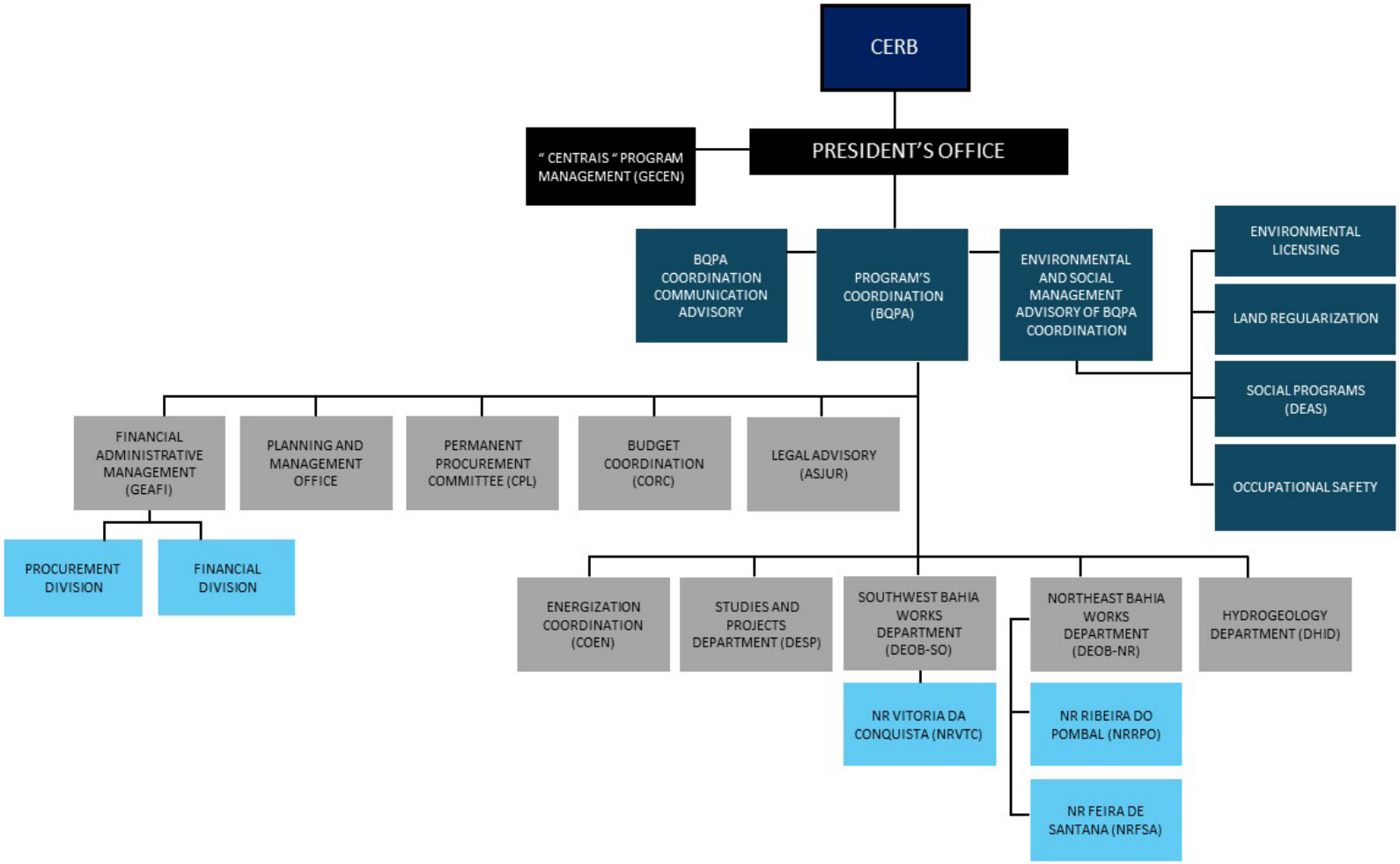


Figure 4. Organizational chart of the PMU-Cerb



C. Implementation Support

9. **Overall.** The objective of implementation support is to ensure that national and subnational governments implement the MPA Program and its phases properly. It is also to ensure that the resources and staff allocated by the World Bank are sufficient to supervise and support the MPA Program and its projects implementation. The implementation support will focus on the principal risks identified and the agreed risk mitigation measures to be undertaken as described in the in the risk section of this document. It will consist of: (i) semi-annual implementation support missions carried out jointly by the World Bank and the participating state and federal government institutions. Also, technical partners (Embrapa, Anater, Sebrae, Senar, Senai, FAO, etc.) when technical needs arise; and (ii) TA in areas of weaknesses and where new approaches/procedures have been introduced. The supervision strategy will use several instruments to review progress and respond to implementation issues, including the following:

   (a) **Implementation Support Missions**. The World Bank will conduct joint semi-annual review and implementation support missions with national and subnational governments to review overall MPA Program implementation performance and progress toward the achievement of the PrDO and PDO of specific projects (phases). The semi-annual implementation support missions will be followed by regional "wrap-up meetings" that will bring together national teams, subnational teams, and key stakeholders to discuss progress made and serve as a platform for sharing knowledge and building partnerships.

   (b) **MTR (mid-term review) for the MPA Program and Projects (Phases).** An MTR will be done midway in the MPA Program and Projects (phases), when loan disbursement levels reach approximately 50 percent of the total Loan proceeds or when half of the performance period has elapsed, whichever occurs first. It will include a comprehensive assessment of the progress in achieving the MPA Program objectives as laid out in the results framework. The MTR will also serve as a platform for revisiting design issues that may require adjustments to ensure satisfactory achievement of the MPA Program's objectives.

   (c) **Implementation completion**. At the close of the MPA Program and each phase (project) each national and/or subnational government and the World Bank will carry out separate a report of such scope and in such detail as the World Bank shall reasonably request, on the execution of the Project, the performance by the Loan Parties, the Project Implementing Entity and the Bank of their respective obligations under the Legal Agreements and the accomplishment of the purposes of the Loan; and (ii) a plan designed to ensure the sustainability of the achievements of the MPA Program and its phase (project) and draw lessons from its implementation.

MPA Program

10. The MPA will capitalize on existing responsibilities of the MDAFF and MAPA to coordinate relevant aspects of the MPA across the participating entities. Their early involvement envisions the following: (i) facilitating a central coordination mechanism to streamline program execution, (ii) contributing to develop a comprehensive learning agenda to guide knowledge exchange among participating institutions, and (iii) supporting the design of a monitoring and evaluation framework to assess the program's effectiveness. The World Bank will support this upfront engagement through its implementation support efforts, contributing to MDAFF/MAPA's efforts to provide strategic direction and vision for the entire MPA.

11. **The Task Team to manage the MPA Program**. To ensure efficient execution of the MPA Program, a streamlined Task Team will be established with a clear division of labor. The team will be led by a Task Team Leader (TTL) and a co-TTL, providing overall technical and operational direction. An M&E and impact evaluation specialists will be integrated to design critical methodologies, procedures, and data collection instruments compatible with individual projects implemented by other participating institutions, fostering program-wide evaluation coherence. An operational

analyst will further support the TTL and co-TTL by managing day-to-day operations. Additionally, to potentially strengthen supervisory capacity, the World Bank is exploring the possibility of a Trust Fund to supplement the program's budget.

The Bahia Sustainable Development Project (Phase 1).

12. **Technical support**. The Bahia Sustainable Development (phase 1) will require support and close follow-up from the World Bank task team during the first year of implementation to establish all new procedures and monitoring system in place. Particular attention will be paid to planning and implementing the key activities required to place the project in a good path for the execution of all components in the years 2 to 6. The Bahia project will benefit from the engagement with the MDAFF and Mapa through the MPA.

13. **Monitoring and Evaluation support**. A M&E specialist and relevant consultants will provide technical support and organize regional training for the monitoring and evaluation of the project (phase).

14. **Fiduciary support.** Fiduciary teams (procurement and FM specialists) will closely supervise the project. They will participate in the twice-yearly country implementation support missions and facilitate capacity building for the project's fiduciary staff.

15. **Environmental and Social Safeguards support**. The Bank specialists on social and environmental safeguards will have responsibility for supervising activities of the Project. They will conduct supervision of the Project's safeguard activities, participate in meetings to discuss findings, and draft action plans to improve project implementation.

16. The table below (**Table 1**) presents the skills needed, number of staff weeks, and number of trips to set up the MPA Program and implement its first project (phase 1).

Table 1. Proposed skills mix to manage the MPA Program and Phase 1 (average, per year)

Skills Needed	Number of Staff Weeks	Number of Trips
MPA Program		
TTL (ADM)	3	2
Co-TTL	2	2
ME Specialist	3	
Impact Evaluation Specialist	3	
Operations analyst	3	
Subtotal	**14**	
Project (Phase 1)		
TTL (ADM)	3	2
Co-TTL	3	2
Procurement specialist	2	2
FM specialist	2	2
Environment safeguard specialist	2	2
Social safeguard specialist	2	2
M&E specialist	4	3
Impact Evaluation Specialist	3	
Gender specialist	2	2
Consultant	4	6
Subtotal	**26**	
Total	**40**	

ANNEX 2. Financial Management (FM) Assessment (FMA) of the CAR

A. Background

1. **Staffing:** The Financial Management team comprises qualified professionals with experience in bank policies and procedures, education levels, professional expertise, and knowledge of processes to perform these functions adequately. The current structure at CAR includes: i) 1- Financial Management Specialist and ii) 15- Accountants, of which 1-Accountant supports the Financial Management Specialist (at the PMU), 2- Accountants will support the subprojects and the regions of "*Recôncavo Baiano*" and "*Território Metropolitano*," and 12-Accountants will act within the subprojects located in the countryside of the state of Salvador. The establishment of the PMU and the appointment of the FM team will be made upon the signature of the legal agreement.

2. **Planning and Budgeting**: The State's budget process is clearly defined, follows Law 4.320/64, and aligns with IPSAS standards. The budget cycle includes the planning and implementation of all government activities, which will be reflected in the PPA, LDO, and LOA[73]. The PPA (2024-2027) approved through Law No. 25.042/2023 included the Program Names: (i) "Universalização do Saneamento Básico" – code no. 421; (ii) "Sistemas Produtivos Rurais Sustentáveis" – code no. 417; and (iii) "Permanência no Campo – ATER, Inovação e Sustentabilidade" – code no. 415. Overall, the budget preparation is carried out by CAR and submitted to SEPLAN[74], which prepares the final state budget proposal to be approved by the Legislative Assembly.

3. **CAR's system has adequate internal control procedures in place.** It can be disbursed through conventional Summary Sheet (SS) / Statement of Expenditure (SOE) procedures and to produce good quality Financial Reports (IFRs). CAR uses two different, and not fully integrated, systems: (i) FIPLAN[75], the State of Bahia's budgetary and accounting tool, where all public expenditures must be recorded and through which all payments are made (after being adequately budgeted and committed for), with the Project as a cost center ("*Unidade Gestora*") within the system; (ii) CAR's financial management system, the basis for the preparation of SS/SOEs and Project financial statements; and subproject monitoring, physical progress and contract management. CAR's financial management system does not communicate electronically with FIPLAN. Therefore, financial data (i.e., payments) must be periodically and manually reconciled with FIPLAN. These systems have been evaluated and monitored under previous Bank Projects and are considered reliable and secure. State accounting management is under the responsibility of the Finance Secretariat-SEFAZ. Each secretariat or company (CAR, for instance) has a financing unit subordinated to SEFAZ and is responsible for making the respective payments and ensuring observance of the LOA.

4. **Accounting**: The state of Bahia follows: (i) the Brazilian Accounting Standards Applicable to the Public Sector ("*Normas Brasileiras de Contabilidade Aplicadas ao Setor Público*-NBCASP"); (ii) Law 4.320/64, that establishes certain high-level accounting principles ("*Normas Brasileiras de Contabilidade Técnica Aplicada ao Setor Público*-NBCT SP"); and (iii) the Accounting Manual Applicable to the Public Sector ("*Manual de Contabilidade Aplicada ao Setor Público*-MCASP") issued under Law 10.180 of February 6, 2001 and Decree 3.589 of September 6, 2000. Both the NBCASP and MCASP were revised via *Portaria* STN 467 of August 6, 2009, and updated in 2013 to incorporate the text of the International Public-Sector Accounting Standards (IPSAS), with adaptations for the Brazilian reality.

5. **Internal Controls**: The internal control environment of the Project is adequate. All transaction processing uses CAR's institutions, processes, and systems to segregate duties, supervision, quality control reviews, reconciliations, and

[73] "PPA - Plano-Pluri-Annual" or Multi-Annual Plan; "LDO – Lei de Diretrizes Orçamentárias" or Budget Guidelines Law; and "LOA – Lei Orçamentária Anual" or Annual Budget Law, which includes the Government's goals and programs that are approved by Congress every five years, eighteen months, and twelve months, respectively.
[74] "Secretaria do Planejamento" or Planning Secretariat
[75] Integrated System (Planning, Accounting, and Financial) of the state of Bahia, utilized by all state institutions that receive and transfer government funds.

independent external audits. Process flows are clear and well-understood by CAR's personnel. All Project budgeting and accounting transactions will run through the public state accounting system (FIPLAN). All payments will follow the official commitment ("*empenho"*), verification ("*liquidação"*), and payment ("*pagamento"*) routine. The Project's bank accounts should be reconciled biweekly by the PMU by a staff member without access to process or approve payments. All unusual items should be analyzed and taken to the responsible official for approval. All Project costs are recorded according to the Federal and State Chart of Accounts, which enables comparison and reconciliation with the Project's records, which are recorded in SACC, the customized financial management information system. This system is used by CAR to record Project transactions, perform financial reporting, and execute budgets. The system is an integrated online system used by CAR and the regional technical units.

6. **Funds Flow and Disbursement Arrangements**: All payments will be made using the FIPLAN system upon instructions from CAR once payment obligations have been incurred, verified, and adequately documented. Payments will go through the commitment and settlement process at SEFAZ and are finalized at CAR by issuing a bank order ("ordem bancária") to the subprojects or Producer Organizations – POs, which will pay service providers and contractors. The state system requires funds to be committed by the source to make payments, making it possible to track loan disbursements up to Project expenses. A subsidiary financing agreement ("*Convênio de Financiamento*") with each participating PO must be signed, allowing it to receive funds into a specific account opened for the Project. Furthermore, financial counterparts' funds must be deposited into the same account.

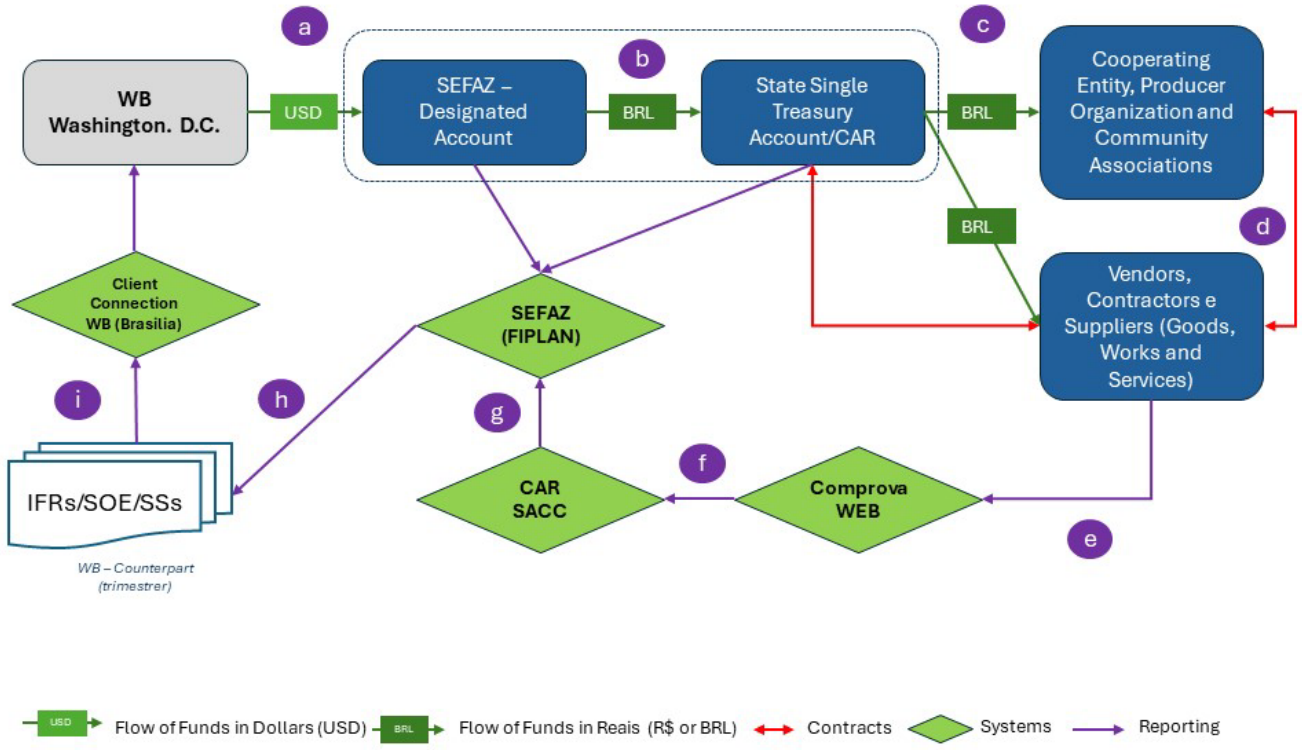
7. **The following disbursement methods may be used to withdraw funds**: (a) reimbursement, (b) advance, and (c) direct payment, with the advance method being the primary disbursement method. The Project will report on using bank advances through Withdrawal Applications supported by Statement of Expenditures (SOEs), Summary Sheets (SSs), and Records as defined in the Bank Disbursement Letter. To prepare the Withdrawal Applications, CAR will consolidate subproject execution reported by the RPOs and Community Associations. CAR will sign off on the Withdrawal Applications to request disbursements and document expenditures based only on actual spending. SOE threshold limits and other disbursement arrangements will be specified in the Disbursement Letter. Direct Payments will be documented by Records (copy of the invoices). The minimum application size (for direct payments and reimbursements) will be the equivalent of US$1,000,000.

8. **Disbursement of funds for subprojects will follow a performance-based installment approach**. For agricultural subprojects (matching grants subprojects), the maximum amount of the grant agreements is no greater than US$ 500,000. However, agricultural subprojects exceeding US$500,000 require the World Bank to have no objection to financing using resources on the loan. Upon signing the grant agreement, CAR will advance funds in installments to POs to be deposited in their bank accounts. For each disbursement, POs will submit documentation providing evidence of physical and financial progress against the activities, milestones, and products agreed upon in the business plan approved. In turn, CAR will verify the provided documentation and release the next installment if satisfactory progress is demonstrated. Payments will thus be made on a lump-sum basis based on results achieved. The World Bank accounts for the eligible expenditures (i.e., records that the eligible expenditures are documented) when the lump sum is paid to Productive Organizations. Before initiating subproject disbursements, CAR must establish a robust monitoring mechanism to ensure subprojects are implemented as intended. All subproject activities, milestones, and products must be completed before the closing date of the subproject. For the establishment of CAAs (*Centrais* Subprojects), the maximum amount of financial support from the project for each individual CAAs is capped at US$1,000,000. If investments in the establishment of CCAs exceed US$1,000,000. Then, the World Bank's No Objection will be required to finance using resources from the loan. All the Bank resources transferred to subprojects upon the approval of the grant agreements will be part of the annual external audit, which the TCE-BA will carry out.

9. The Secretariat of Finance ("*Secretaria da Fazenda*" - Sefaz-BA) will open a segregated DA in US$ in Banco do Brasil, located in Brasília in the name of the State of Bahia to receive loan funds and disbursements in US$.

10. The Designated Account (DA) ceiling will be fixed at US$5 million. The frequency for reporting eligible expenditures paid from the DA is quarterly.

11. Below is the flow of funds included in the POM:



12. CAR will execute the counterpart funds. The PMU included a process for monitoring them in the POM.

13. Retroactive financing will be allowed for this Project up to an aggregate amount not to exceed 20 percent of the loan amount for payments made for expenditures one year before the signing date of the Loan Agreement, in line with applicable IPF policies.

14. The Project has informed the Bank that the loan proceeds will finance the front-end fee.

15. The loan will also have a four-month grace period after the closing date, during which the World Bank will accept withdrawal applications relating to Project transactions incurred before the closing date.

16. **Financial Reporting:** The Project's transactions will be booked in the state administrative and financial system called FIPLAN. The IFRs will be produced from the SACC system. They will adequately control, account for, report on, and manage the proposed Project's transactions and generate the financial reports per the Bank's requirements (i.e., by category, component, and subcomponent). The customized system will also allow the preparation of the respective reports in local currency (BRL) and US Dollars (US$) for monitoring purposes on a cash basis (although the State also follows accrual accounting). These systems were utilized during the implementation of the previous Projects and have worked satisfactorily for the bank. CAR should submit the IFRs (the automated format and content) to the Bank's validation no later than sixty days after the loan's effectiveness. Once the Bank approves it, the PMU will ensure the

timely production of Interim Financial Reports (IFRs) within 45 days after the end of each trimester. Accordingly, the format and content of the IFRs will cover the following items: IFR 1 - Sources and Uses of Funds by Project category, cumulative (Project-to-date, year-to-date, and for the period) versus actual expenditures, including a variance analysis; IFR 2 - Uses of Funds by Project component and subcomponent, cumulative (Project-to-date, year-to-date, and for the period) versus actual expenditures, including variance analysis; IFR 3 - Designated Account bank reconciliation and Bank statements; IFR 4 - Control of Subprojects and Counterparts ("cash" or "in kind"); IFR 5 - Procurement Contracts.

17. **External Auditing:** The Court of Auditors of the State of Bahia (TCE-BA) is the public body that carries out the accounting, financial, budgetary, operational, and patrimonial inspection of the state, municipalities, and entities of the direct and indirect administration, regarding aspects of legality, legitimacy, and economy. Specifically, for this Project, the annual Project financial statements will be audited by TCE-BA, the State's Supreme Audit Institution. The external audit will be conducted according to the TOR acceptable to the World Bank (prepared by the PMU and approved by the Bank) by International Standards on Auditing (ISAs) issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC) or national auditing standards if, as determined by the Bank, these do not significantly depart from international standards. The audited financial statements will be prepared using accounting standards acceptable to the Bank (i.e., IPSAS or national accounting standards where, as determined by the Bank, they do not significantly depart from international standards). According to the World Bank's guidelines, the auditors must also prepare a Management Letter, where any internal control weaknesses will be identified, contributing to strengthening the control environment. The auditor's report will be submitted to the World Bank no later than six months after the closing of the fiscal year, and the annual audit may be financed out of the loan proceeds. Specific Audit Terms of Reference (TOR) will be prepared by CAR and submitted to the Bank's No Objection within thirty days of the loan's effectiveness.

18. Based on the external ("*Tribunal de Contas*-TCE") auditor's opinion from the 2021 and 2022 Audit Reports for CAR, specifically "… due to: (i) the weaknesses identified in the supervision and monitoring of grant agreements ("*convênios*"), which contributed to the irregularities found in the execution of subprojects promoted by such instruments, (ii) non-compliance with the chronological order of payments to the creditors, and (iii) the absence of documents that should form part of the formalization of the accountability process…", the Bank recommends the contract of one Internal Auditor (Consultant) to support the Project. This professional will be responsible for the internal audit compliance-related functions and specific aspects of internal control, including the processes related to the subprojects - grant agreements (*convênios*). This contract aims to mitigate the risks related to the "*convênios*," especially based on the auditor's opinions. Specific Terms of Reference (TOR) for the contract of this professional will be prepared by CAR and submitted to the Bank's No Objection within sixty days of the loan's effectiveness.

19. **Anticorruption Arrangements**: The Brazilian Anticorruption Law (Federal Law 12.846) establishes civil and administrative liability for legal entities for acts of corruption. The Law implements the OECD Anti-Bribery Convention, strengthens anticorruption enforcement, and is broadly in line with (and, in some respects, even stricter than) similar legislation found in other jurisdictions - such as the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act. Brazil's Law represents a significant step, exposing companies - not just individuals - to liability and fines for the first time.

20. CAR and its Project's partners shall also observe the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (dated as of October 2006; revised as of July 1, 2016) that set the general principles, requirements, and sanctions applicable to persons and entities which receive, are responsible for the deposit or transfer of, or take or influence decisions regarding the use of the loan proceeds.

21. The staff from CAR and its Project partners involved in Project implementation must observe the highest standard of ethics and take all appropriate measures to prevent and refrain from engaging in sanctionable practices. CAR, its

Project's partners, and state agency staff must report allegations of fraud and corruption in using the loan proceeds, maintain appropriate fiduciary and administrative arrangements, cooperate with Bank investigations, take timely and proper action to address the problem, and follow other applicable government-related rules and guidelines.

22. **The following Action Plan was agreed:**

	Action/Condition	Responsible Party	By When
1.	A Project Operational Manual (POM) will detail internal control procedures (Project FM's tasks and duties, funds flow and disbursement arrangements, the monitoring process for counterpart funds, and the operation/financial framework). The draft POM should be forwarded to the Bank for Non-Objection.	PMU	September 14, 2024
2.	To ensure the establishment of the PMU and the appointment of the FM Team	PMU	July 8, 2024
3.	To open a segregated designated account for the Project only – US$.	SEFAZ-BA	Within 30 days after Loan Effectiveness
4.	To open a sub-account for CAR - Single Treasury Account – R$	SEFAZ-BA	Within 30 days after Loan Effectiveness
5.	To prepare and submit for the Bank's No Objection of the Term of Reference Internal Auditor (TOR).	PMU	Within 30 days after Loan Effectiveness
6.	To prepare and submit for the Bank's No Objection of the Audit Terms of Reference (TOR) External Audit	PMU	Within 30 days after Loan Effectiveness
7.	To hire an Internal Auditor (Consultant)	PMU	Within 60 days after Loan Effectiveness
8.	Automated IFRs (format and content) should be forwarded to the Bank's validation and no-objection	PMU	No later than 60 days after loan effectiveness.
9.	The FM team will participate in all available Bank fiduciary and disbursement training.	PMU	Throughout Project life

ANNEX 3. Project Description: Agriculture and Rural Water Sector

A. Sectoral and Institutional Context

1. **The State of Bahia covers an area of 567,400 km², representing about 6.7 percent of Brazil's territory and more than one-third of the Northeast Region, see Figure 1**. With a total population of 14.9 million distributed over 417 municipalities Bahia is the 4th most populous state in Brazil, of whom 10.4 million are living in urban areas and 4.5 million in rural areas. After seeing a significant increase between 2007 and 2019, mainly due to an increase in the minimum wage, direct income transfers, and growth in the industrial and agricultural sectors, Bahia's GDP reached USD58.7 billion, ranking it 7th in Brazil. However, social indicators show that poverty and inequality remain significant issues. The state's Gini Coefficient, a measure of inequality, stands at 0.56, which is higher than the national average of 0.54, and approximately 40 percent of Bahia's population lives in poverty, with 10 percent living in extreme poverty. It is estimated that 38 percent of Bahian households were food insecure in 2020. The State also ranks poorly in the Municipal Human Development Index (MHDI).

2. **The agriculture sector in Bahia is composed mainly of small-scale family farmers.** Family farms of less than 50 hectares producing for both subsistence and commercial needs make up approximately 78 percent of the farms in Bahia. While State level data suggest that agricultural productivity growth is close to the national average at 3.74 percent annually[76], the agriculture sector faces contrasting realities. One reality is found in the *Cerrado* and São Francisco region and features higher land quality with highly productive, commercially successful production systems that are well-integrated into local, regional and international markets. The other reality, which is common throughout large areas of the semiarid region, features subsistence and transitory agriculture systems on fragile ecosystems that are poorly integrated into markets. Farmers in this semiarid region have demonstrated the lowest productivity gains in Brazil[77].

3. **Family farmers confront challenges that hinder productivity and income growth.** The multiple challenges faced by family farmers, in Bahia, include the following: (i) reduced bargaining power of farmers due to the low scale of production; (ii) inadequate access to financial markets to undertake medium-long term investments (credit and insurance); (iii) limited information and technical support for the adoption of modern agricultural technologies and good farming practices; (iv) limited access to business development services; and (v) limited access to productive assets. Often, these problems are a combination of market and government failures. Consequently, family farmers often lack competitiveness within the agricultural sector, hindering their ability to capitalize on the growing market potential driven by urbanization and evolving consumer preferences for food. Fostering the integration of family farmers into value chains through producers' organizations has the potential to create a more productive, sustainable, and resilient agriculture sector, family farmers, in Bahia.

4. **Limited access to technologies, inputs, technical assistance, and financing limit family farming productivity and access to markets, as well as their ability to adapt to climate change.** According to data from the 2017 Agricultural Census for Family Agriculture, the use of basic agricultural technologies, such as fertilization, were carried out in only 16 percent of family farms in Bahia. Underlying these low rates there is limited access to inputs, technical assistance, and credit. Only 17 percent of family farms in Bahia are estimated to practice mechanized agriculture, only 10 percent receive technical assistance services, and only 12 percent access rural credit (IBGE, 2017). Consequently, family farmers are unable to adopt more sustainable and climate resilient practices, making them particularly vulnerable to the increasing impacts of climate change. As a result, family farmers are largely uncompetitive vis-à-vis the markets.

[76] Gasques, J. G., et al. 2018. Growth and Productivity of Brazilian Agriculture from 1975 to 2016. Conjuncture Chart No 38 – 1o Quarter 2018. Institute of Applied Economic Research (IPEA).
[77] Carvalho, N. B., de Moura Pires, M., & da Silva Gomes, A. (2017). Capital Humano E Tecnologia: análise da produtividade agrícola da Bahia. Campo-*Território*: 11(24), 265-288.

Most family farmers are not linked to economic, productive, or commercial organizations such as cooperatives and associations. A small portion of family farmers are estimated to participate in domestic markets, with many instead allocating a large portion of production for self-consumption and irregularly trading their surplus, as many legislative requirements impede them to access formal markets.

5. **Bahia's agriculture sector is also both vulnerable to climate change and a significant contributor to greenhouse gas (GHG) emissions.** According to the Intergovernmental Panel on Climate Change (IPCC), the northeast of Brazil will be one of the most affected regions by climate change in Brazil. This will present a scenario of increase in process of semi-aridity, aridity, and desertification, affecting mainly the regional subsistence agriculture. These challenges are further intensified in the State of Bahia by fluctuating climate conditions such as droughts, variability of rainfalls, water scarcity, and increased temperatures[78] At the same time, the agricultural sector is also an important contributor to Bahia's overall greenhouse gas (GHG) emissions. Annual data shows that the emissions in the State of Bahia coming from Agriculture and Land Use Change and Forestry (LUCF) sectors represented about 46 percent and 12 percent, respectively[79]. The agriculture sector emissions in the state considerably surpass the national and regional averages which are both around 29 percent.

6. **Universal access to water and sanitation is the country's national goal.** On June 25, 2020, a new basic water supply and sanitation (WSS)[80] Legal Framework (Law 14026/2020) was approved, which calls for universal access to WSS by 2033. To achieve this goal, the Law mandates a bold reform of the WSS regulatory frameworks at the three levels of government -federal, state, and municipal-, promotes private sector's participation in service delivery, and introduces credit enhancement mechanisms. The National Plan for basic WSS (*Plano Nacional de Saneamento Básico* - PLANSAB)[81] indicates that in 2019, 94.6 percent of Brazilians had access to adequate water supply services and 75.9 to adequate sanitation. Only 71.3 percent of the rural population had access to water supply and 30.7 percent to sanitation, as opposed to 97.8 and 81.2 percent, respectively, in urban areas. Furthermore, access levels and the quality of drinking water vary across the country, the North and Northeast regions lagging the most. As part of the PLANSAB, the National Program for Rural WSS (Programa Nacional de Saneamento Rural - PNSR) was launched in 2019 aiming at granting universal access to around 30 million people living in rural areas. PSNR highlights the importance of investing in rural WSS to improve health, reduce poverty, and sustain rural development, with focus on nutrition and family-level agriculture.

7. **The situation of water resources in Bahia State is characterized by both challenges and opportunities.** Bahia's location in the northeastern region of Brazil, known for its semi-arid climate and periodic droughts, poses significant challenges for water availability and management. One of the main issues is the scarcity of water in the semi-arid rural areas which have a direct impact on agricultural productivity, limiting crop yields and forcing farmers to rely on subsistence farming. This, in turn, contributes to rural poverty and food insecurity. Access to safe drinking water is also a concern. Additionally, safe sanitation facilities are lacking for a significant portion of the rural population.

8. **The coastal zone of Bahia, where rainfall is higher and more reliable, has abundant water resources. However, most of the state lies within the Northeast Drought Polygon, which is prone to annual and cyclical droughts.** Inadequate management practices and a lack of sustainable recovery of operation and maintenance costs for water infrastructure have contributed to the deterioration of the services. While challenges persist, there are opportunities for sustainable

[78] Marengo, J. A., Galdos, M. V., Challinor, A., Cunha, A. P., Marin, F. R., Vianna, M. D. S., and Bender, F. 2022. Drought in Northeast Brazil: A review of agricultural and policy adaptation options for food security. Climate Resilience and Sustainability, 1(1), e17.

[79] Plataforma Sistema de estimativa de emissões de gases. 2022. Retrieved from: https://plataforma.seeg.eco.br/territorio/bahia.

[80] In Brazil, *Saneamento Básico* (Basic Sanitation) includes water supply, sanitation, sewerage, and wastewater treatment, in addition to solid waste and pluvial draining.

[81] https://www.gov.br/cidades/pt-br/acesso-a-informacao/acoes-e-programas/saneamento/plano-nacional-de-saneamento-basico-plansab/paineis-de-plansab-em-power-bi

water resource management. The state has abundant renewable energy resources, such as wind and solar energy, which can contribute to water and energy security.

9. **The gap in access to Water Supply and Sanitation (WSS) between rural and urban areas remains a major challenge.** In Bahia, 2.8 million people (19 percent of the total population) do not have access to a treated water supply while 8.5 million (48 percent of the total population) lack access to sewage services. In rural areas, 67.5 percent of the rural population) continue to lack access to safe drinking water services and 93 percent of the rural population do not have access to a sewage system[82]. The new water and sanitation law may provide incentives for the private sector to invest in WSS in urban areas, which will go a long way to helping Bahia to achieve universal access in urban areas[83]. However, the situation in rural areas is compounded by the lack of sustainability of water infrastructure and water services which are transferred for management to municipalities which do not have the capabilities to support the management of services[84]. Experiences from other states in Brazil, such as Ceará, and in other countries, demonstrate the need for the creation of a State Policy for Rural Water and Sanitation that creates the conditions for strengthening the provision of water services paying due attention to water services management and adaptation to climate change to ensure the resilience and sustainability of service provision.

10. **The challenges of achieving Universal Rural Water Services (RWS) in Bahia revolve around three main issues: climate change, water scarcity and weak service management**. Bahia faces chronic water scarcity due to several factors, including low precipitation, high evapotranspiration, long dry seasons, limited surface water availability, and restricted groundwater resources. Recurrent droughts exacerbate this challenge, further straining water security. While deep wells offer a reliable source during droughts, brackish groundwater quality in certain aquifers poses an additional hurdle. A recent study underscores the operational fragility of Bahia's rural water supply systems, revealing that 100 percent of a sizeable sample (n=69 systems in 116 communities) required rehabilitation[85] [86]. This dysfunction is attributed to inadequate technical support for community-managed associations and insufficient revenue from tariff collection. These findings align with a 2009 World Bank study, which projected early sustainability failures for self-supplied communities lacking integration into multi-village schemes and access to specialized expertise. Comparative evidence from Ceará and international contexts points to the urgent need for Bahia to establish a comprehensive state policy and institutional framework. This framework must prioritize the following to reinforce the delivery of water services: (a) robust management - policies should target effective water service management practices, addressing technical, operational, and financial sustainability; and (b) climate resilience - adaptive strategies tailored to mitigate the impacts of climate change on water resources must be integrated into the policy and investments.

[82] Sistema Nacional de Informações sobre Saneamento. Base year 2020, presented by the Secretaria de Infraestrutura Hídrica e Saneamento in its Technical Note to the Bank, of January 19, 2024

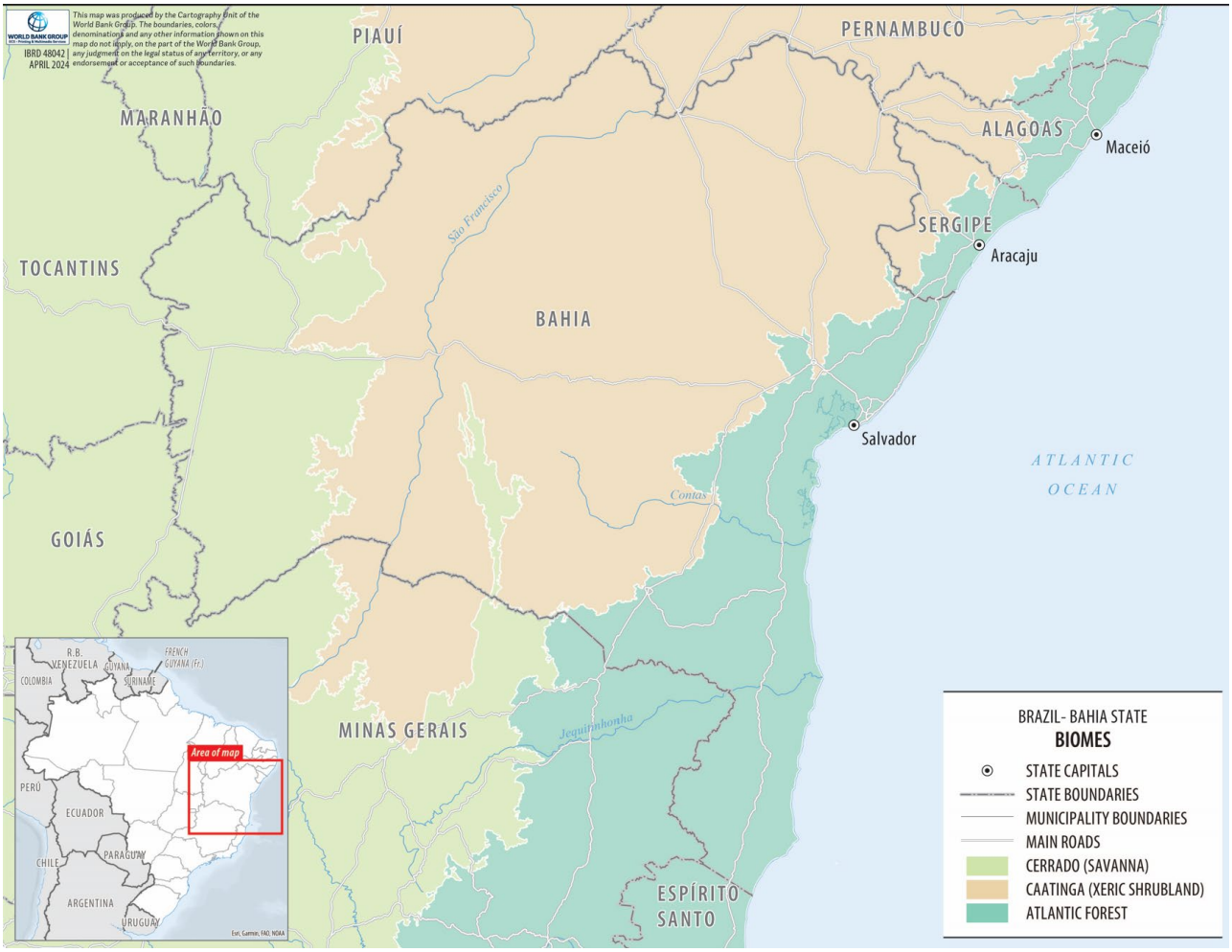
[83] In 2020, the New Legal Framework for Basic Sanitation (Law No. 14.026) was approved, and it requires that all states must provide safe drinking water services to 99 percent of the population. Also, it requires access to sewage collection services to cover 90% of the population.

[84] Companhia de Desenvolvimento e Ação Regional. 2022. Planejamento das novas Centrais de Associações Comunitárias a serem implantadas no estado da Bahia. Salvador, Bahia, Brasil.

[85] Companhia de Desenvolvimento e Ação Regional. 2022. Avaliação comparativa sobre impactos na população atendida por sistemas de abastecimento de água operados pelas Centrais e Prefeituras Municipais. Salvador, Bahia, Brasil.

[86] This study assessed the impact on the quality of life of the beneficiary population of new/rehabilitated water systems, to inform decisions on new investments, comparing the results of the community management model and systems directly managed by municipalities.

Figure 1. State of Bahia location and biomes



B. THE INSTITUTIONAL AND POLICY FRAMEWORK FOR AGRICULTURE[87] AND WATER AND SANITATION IN THE STATE OF BAHIA.

11. **In the State of Bahia, agriculture is supported by a range of institutions operating at different levels of government**. Two key agencies are responsible for agricultural and rural development: the Secretariat for Regional Development (SDR) and the Secretariat for Agriculture, Livestock, Irrigation, Fisheries, and Aquaculture (Seagri). The SDR has a broad mandate to promote economic and social development across the State and its target audience includes small-scale farmers, rural entrepreneurs, and other actors in the agricultural sector. SEAGRI's target audience, on the other hand, are commercial farmers.

12. **The Bahia State Agency for Food Safety and Agriculture Health (ADAB) is responsible for ensuring the safety and quality of agricultural and livestock products in Bahia**. Its main role is to inspect farms and food processing facilities to ensure compliance with health and safety standards. The Regional Development Agency (CAR) supports rural development by providing technical assistance, financing, and infrastructure support to small-scale farmers and rural entrepreneurs. The Bahia Agency for Technical Assistance and Rural Extension (BAHIATER) provides extension services

[87] https://www.perfiladministracaopublica.ba.gov.br/organograma.html.

to farmers and rural communities, offering advice and support on a range of issues related to agriculture and rural development.

13. **In addition to these agencies, the State of Bahia also has several research and development institutions that support agriculture and rural development.** These include regional Universities and the Bahia State Research Foundation (FAPESB), which funds research projects and supports innovation in agriculture and related sectors. The Superintendency for Agricultural Development of the State of Bahia (SUDEAGRO) also supports research and development activities, with a particular focus on promoting sustainable and socially inclusive development in the agriculture sector. Finally, the Bahia Fishery (BAHIAPESCA) is responsible for supporting and regulating the state's fisheries and aquaculture industries, with a mandate to promote sustainable development and protect the State's aquatic resources.

14. **Key policy instruments in Brazil's agricultural sector.** The main policy instruments employed in Brazil include: (i) rural credit; (ii) risk management programs; (iii) minimum and reference prices; (iv) agricultural land zoning with environmental compliance; and (v) agricultural innovation. Credit at preferential interest rates is the main agricultural policy instrument provided to large, medium, and small-scale family farms. For instance, for the 2021/22 harvest, total credit allocation was R$251.2 billion (US$46.6 billion). This instrument is developed and implemented through collaboration between the Central Bank, the Treasury, the Secretariat of Economic Policy (Ministry of the Economy), the Ministry of Agriculture (MAPA) and the Ministry of Agrarian Development and Family Farming (MDA). The National Rural Credit System (SNCR) primarily allocates rural credit, offering preferential interest rates and distinct conditions for small farmers (PRONAF), medium-sized farmers (PRONAMP), and commercial farms[88].

15. **The state has a comprehensive institutional arrangement for water resources management. The main agency responsible for water management is the Secretariat of Infrastructure and Water Resources (SIHS), which is responsible for planning, implementing, and regulating water policies.** Within SIHS, the Water Resources Directorate is responsible for the formulation, execution and follow-up of the State Water Safety Plan and the State Policy for Safety of Dams. The Water and Sanitation Directorate is responsible for planning, implementing, and regulating water and sanitation policies and projects. The Environment and Water Resources Institute – INEMA, under the Secretariat of Environment, is responsible for managing water resources, including water allocation, water quality monitoring, and dam safety regulation. The SHIS is currently updating the State Plan for Water Supply and Sanitation (*Plano Estadual de Agua de Saneamento Básico*, PESB), and the Water Security State Plan (*Plano Estadual de Segurança Hídrica*, PESH), which aim to detail the necessary interventions to ensure water supply under the prevailing conditions of climate change; and the Regional Water and Sanitation Plans (*Planos Regionais de Saneamento Básico*, PRSB), which will be the planning tools that present the investment needs in the short, mid and longer terms to attain the universal access to WSS.

16. **The Bahia Water and Sanitation Company (Embasa) and the Environmental Engineering and Water Resources Company of Bahia (Cerb) are both public water and sanitation companies owned by the State. Embasa is responsible for providing services in urban and selected rural areas, while Cerb is focused on rural areas.** Embasa manages and operates the WSS services and is responsible for planning and implementing new projects in urban areas. Cerb is responsible for the development of water sources and the construction of WSS infrastructure in rural areas. The management and operation of rural water supply and sanitation services (RWSS) is carried out by the municipalities themselves, by Embasa at a less extent, or by the Centers of Community of Associations (CCAs), which is a management model based on the close participation by the communities and technical support from Embasa and Cerb. The Regulatory Agency for Water and Sanitation Services of Bahia (AGERSA) is an autonomous agency responsible for regulating WSS services managed by Embasa; its main responsibilities include setting tariffs and

[88] The National Rural Credit System (NRCS) is based on compulsory quotas of bank deposits dedicated to rural credit.

regulating the water quality and sanitation services. Municipalities are responsible for regulating and managing rural water and sanitation services while Gecen/Cerb monitors their performance.

17. **In this project CAR will be responsible for setting up the new CCAs and continuing to strengthen the existing ones. Cerb will be responsible for the implementation and rehabilitation of water supply systems and the social and environmental interfaces that permeate the execution of the works.** Embasawill provide technical, commercial, and operational support to the CCAs, as well as contributing to increasing the number of connections by transferring to the CCAs water supply systems set up by the company in rural areas, which are independent (not integrated) -see **Box 1** - below. Embasa will perform these tasks with its own resources and will not receive any funding from the loan proceeds.

Box 1. Pilot transfer of a rural water supply system currently operated by Embasa to the CCA CAETITÉ
Financial viability assessment
Community: Canabrava
Municipality: Malhada
Number of households connections: 870

The analysis was focused on two key aspects: 1) assessing how much each user would pay in the new CCA scenario compared to what they used to pay to Embasa; 2) whether the revenues obtained by Caetité would cover its projected costs. All the values calculated, whether cost or revenue, were expressed in R$/connection/month. For CCA's costs, the following was adopted: i) the costs incurred in 2023, stratified per different categories of expenditure, were expressed according to the number of connections in terms of connection/month; ii) the projected costs for the new scenario took into account gains in scale obtained by the new connections incorporated into the costs of personnel and third-party services, and for the others - materials, logistics, commercial, the cost grew in the same proportion as the connections.

For the value of the monthly bill of the CCA and the corresponding direct operating revenue, the following was adopted: i) the latest adjusted tariff structure, value of 2024; ii) Embasa's consumption histogram for the Canabrava system, from which the average consumption and number of connections by category and consumption range were obtained. From this data, the monthly bill and the corresponding revenue for each category/range were calculated.

Conclusions

1. Revenue/Cost – CCA Caetité. From the point of view of revenues/expenses balance, the absorption of the Canabrava system would be favorable to Caetité despite the small residual result, where for an estimated cost of R$ 28.55/connection/month there will be an estimated revenue of R$ 30.13/connection/month, with a projected surplus of 5.5 percent.
2. Users of the social tariff, those who pay less. The biggest financial challenge with the transfer lies in adapting Caetite's tariff structure so that there is no impact on users who pay the social tariff with a water consumption of up to 10m3. For these groups, a possible less impactful measure could be a subsidy paid by the CCA on the cost of apportioning electricity of R$ 10.39.

C. Recent Public Sector Investments

18. **In recent years, Bahia has become a national reference due to the implementation of public policies aimed at promoting sustainable rural development and strengthening family farming, indigenous people, and traditional communities**. In addition to financial investments in improving infrastructure, roads, access to quality education, among others, there was the largest investment in the history of the state of Bahia in supporting family farming and

other traditional populations. In the period ranging from 2015 to 2022, R$ 3 billion were invested in technical assistance and rural extension (ATER), access to inputs, access to markets, strengthening cooperatives, associations, family farmers and other traditional rural populations. The Government of Bahia is expected to invest nearly 1,2 billion over the next five years (2024-2030) in agriculture development for family farmers, indigenous people, *quilombolas*, and other traditional communities (see **Table 1**).

Table 1. Financing the Agriculture Sector in the State of Bahia.

Sources of Funding	Amount of Investment over 2024-2030 (US$ million)	Areas of Investment
State Treasury	612	Technical assistance, rural rods, rural housing, job training, among others
Parliamentary Amendments	196	Rural water related projects, equipment for producer organizations and social assistance in rural areas
BNDES	61	Productive investments, technical assistance for business development, agricultural extension, producer organization support
IDB/IFAD	150	Technical assistance, agriculture extension, strengthening communities, social inclusion, environmental management, and rural infrastructure
World Bank IBRD)	150	Agricultural Innovation, food safety and agricultural health, productive investments, technical assistance for business development, agricultural extension and rural water services.
Total	**1,169**	

19. **A promising strategy for managing rural water supply services in Bahia is based around the CCAs, known as "*Centrais de Associações*"** [89, 90]**.** This multi-community management model was developed in the state of Bahia in 1983, the management of water services is shared between the local community associations, which carry out the operation of water systems and the CCAs, which provide back up support, carry out preventive and corrective maintenance of water systems, and are responsible for the quality control of the water distributed to the families. The model emphasizes community-driven and locally managed water systems, while at the same time provides a back-up support from a supra community entity. This approach gained increased attention when water systems transferred to municipalities consistently failed to achieve sustainability. The first CCAs, Seabra and Jacobina, started their operations in 1995 and 1998 respectively; they are non-profit private civil associations with an organizational structure that includes a Social Board constituted by the General Assembly, Management Council and Fiscal Council. An Operational Board is formed by a General Management and three Coordinators: Maintenance, Administration and Social (community development). A legal advisory and an accounting advisory support both Boards.

20. **The '*Centrais de Águas da Bahia*' Program (PCAB).** PCAB is currently under development by the State Government of Bahia. During the Project preparation, CAR and CERB announced that Bahia will expand PCAB to four more CCAs in addition to those proposed in this Project. The new CCAs include Vitória da Conquista, Ribeira do Pombal and Feira de Santana. This expansion will be supported by a joint project financed by the Interamerican Development Bank (IDB) and International Fund for Agricultural Development (IFAD). In addition, Centrais of Jequié and Itabuna hub will be further strengthened, and another two new CCAs in Barreiras and Teixeira de Freitas hubs will be established with a project financed by the French Development Agency (AfD). As presented in **Figure 2**, 10 CCAs will be designed and

[89] CAR (2022). 'Planejamento das novas Centrais de Associações Comunitárias a serem implantadas no estado da Bahia'. December 2022.
[90] Brazil Water Series 13. Rural Water Supply Management Models in Brazil, 2016.
https://documents1.worldbank.org/curated/en/378901479099282672/pdf/Parte-I.pdf

implemented by the PCAB, which will contribute to meeting the targets set for universal access by 2040. The PCAB's strategic objectives include:

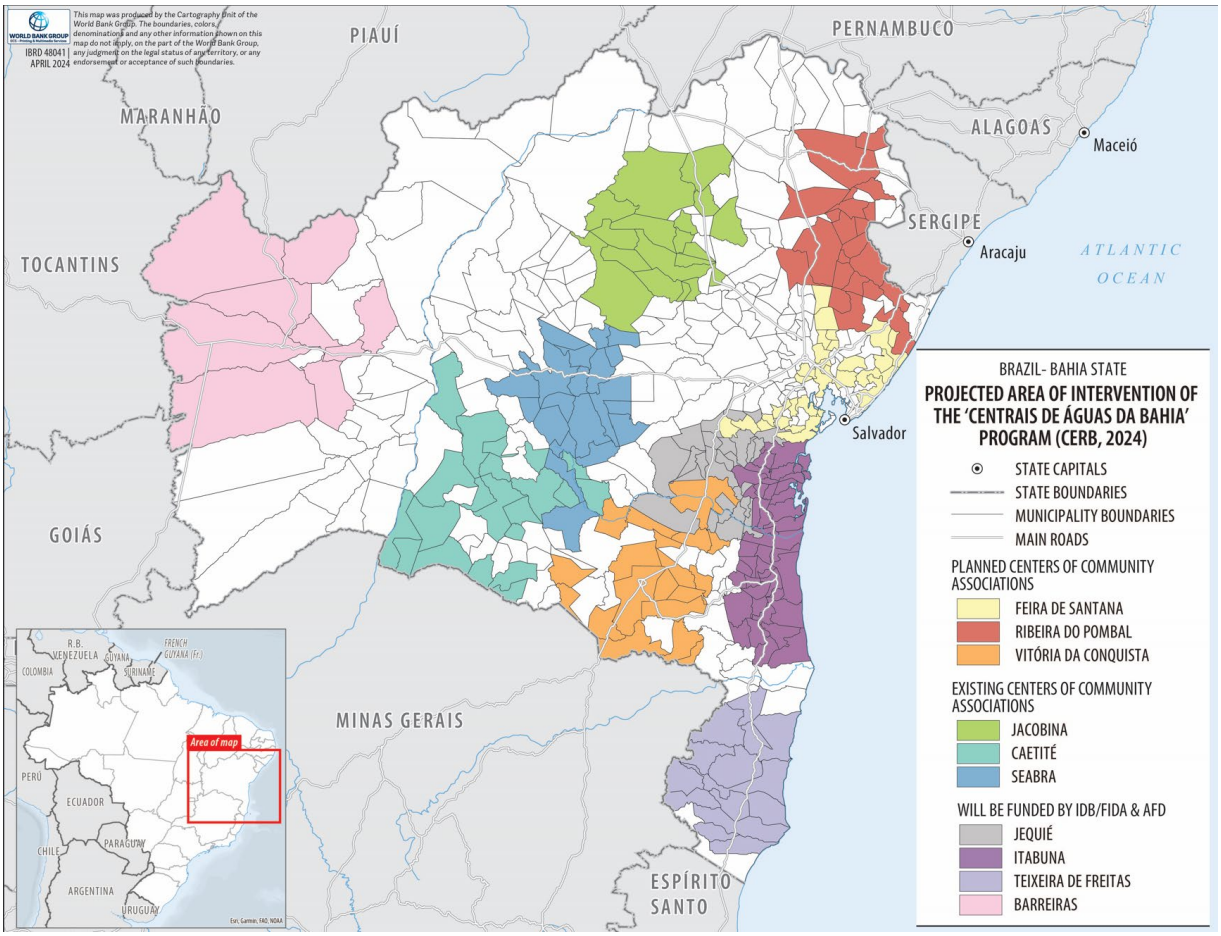
- Create a unified policy and institutional framework for investments in rural water across SIHS, Embasa, Cerb, and CAR.
- Consolidate, give sustainability and visibility to the *Centrais de Associações* model.
- Clarify the duties of the various government institutions involved in setting up and consolidating the model.

21. The PCAB will be managed by an Institutional Committee, made up of the Civil House, the SDR, the SIHS, and operationalized by an Operational Committee made up of the CAR, Cerb and Embasa. The State Secretaries will be responsible for developing the PCAB with the future State Rural Sanitation Policy as its guiding element. The SDR will continue to provide resources through CAR, and SHIS through Cerb. The PCAB includes the following regulatory instruments:

    - Joint Ordinance. Which sets up the Institutional Committee and the Operational Committee to support the implementation and strengthening of the multi-community water system management model and the implementation of the CCAs Program. The document was signed by the Secretaries of the SDR, SHIS, and the Presidents of CAR, Embasa and Cerb on January 29, 2024.
    - Renewal of the existing Technical Cooperation Agreement (SIHS/Cerb/Embasa/CCAs) to provide institutional, technical, and operational support to the *Centrais*. The agreement is expected to be signed in June 2024.
    - Shared Management Agreements. This is a formal agreement that will be signed between the CCA and each Community Association as a prerequisite for implementation of every water supply system.
    - Service Standard Regulations. These instruments will define the conditions for the provision of water supply services by the CCA. These regulations will be described in detail in a POM.

22. **Performance monitoring of the CCAs**. Gecen (*Gerencia de Gestão de Programa Centrais*) was created by CERB in 2020 to support the CCAs and monitor their performance. Gecen's purpose is to be the link between the State Government and the CCAs and has the following responsibilities: monitoring the planning and development of the CCAs, provide managerial and operational assistance, train the technical staff and monitor the activities of the CCAs. By monitoring the CCAs' performance indicators Gecen aims to improve their operational, administrative, and financial results, strengthen the associative and shared management model, and improve their normative procedures. Under the new Technical Cooperation Agreement and within the scope of this Project, Gecen will be responsible for accompanying the planning and implementation of the institutional development activities of the CCAs, providing technical assistance and training, performance monitoring, renewal of environmental regularization processes, and technical cadaster/update of existing systems. Gecen's responsibilities may also include contracting out operational management software, carry out management training sessions, and provision of hydrometers with funding provided by the Project.

Figure 2. Projected area of intervention of the "*Centrais* de Águas da Bahia" Program (Cerb, 2024)



23. **Performance indicators of CCAs to monitor service quality and assess sustainability.** The set of indicators already established in the Bahia 1 project will be maintained for the new Project, with improved means of monitoring to inform the decision-making process of the CCAs' managers. The proposed set of indicators are the following:

Financial performance indicators.
- Revenue evasion - Ratio of collection to turnover (percentage). - Cash sufficiency - Ratio of revenue to operating expenses (percentage). - Inactive connections index - Ratio between inactive and total connections.
Operational performance indicators.
- Water loss index - Ratio between volume produced and volume micro-metered. - Recovered and maintained systems index - Investments in systems recovered or rehabilitated. - Residual chlorine control sheet delivery rate - Ratio between the number of systems that carry out daily measurements of residual chlorine levels and the total number of systems in operation, following a minimum compliance with the Ministry of Health regulations. - Turbidity and color control form delivery rate for systems with filtration - Ratio between the number of systems that carry out monthly measurements of turbidity and color and the total number of systems in operation, following a minimum compliance with the Ministry of Health regulations.
Institutional indicators.

- Regularization of affiliated community associations - Ratio of the number of regularized community associations to the total number of associations to be regularized.
- Population served with the actions carried out by CCAs - Proportion between the number of residents participating in the activities carried out by CCAs, and the number of active connections X * average number of residents per household.

D. PROJECT COMPONENT 1

24. **Component 1.** This component will finance technical studies, technical assistance (TA), and matching grants to co-finance business and ethnodevelopment plans of producer organizations (POs) and to support investments in climate-smart agriculture.

25. **Beneficiaries' contribution.** Productive Organizations benefited from the matching grant are expected to contribute at least between 10 to 20 percent of the total investment of their subproject in cash. The percentage will vary based on the type of PO: dynamic (20 percent), transitioning to markets (15 percent), and productive inclusion (10 percent).

Table 2: Structure of the Project's matching grant mechanism and private capital mobilization (PCM)

Planned investments	Estimate of Supported Subprojects (by typology)				Total Value of the Notice (US$)	Estimation of the average value of the Subproject (US$)	Investment estimation			
							Dynamic (20%)	Transitioning to market (15%)	Productive Inclusion (10%)	All typologies
	Dynamics	Market Transition	Productive Inclusion	Total			Amount of the Beneficiary's Counterpart (US$)	Amount of the Beneficiary's Counterpart (US$)	Amount of the Beneficiary's Counterpart (US$)	Amount of the Beneficiary's Counterpart (US$)
Hiring of a specialized technical team – Management Support	80			**80**	9,104,400	113,805	1,820,880			1,820,880
		320		**320**	15,608,008	48,775		2,341,201		2,341,201
Acquisition of utensils, machinery and equipment			78	**78**	4,040,404	51,800			404,040	404,040
Acquisition of civil works, machinery, equipment, services, solutions, consultancies to support: value chains, Ips, and youth	33			**33**	8,080,808	244,873	1,616,162			1,616,162
	20	24		**44**	6,060,606	137,741	550,964	495,868		1,046,832
		11	21	**32**	2,424,242	75,758		125,000	159,091	284,091
		10	23	**33**	2,424,242	73,462		110,193	168,962	279,155
	7	13	10	**30**	3,232,323	107,744	150,842	210,101	107,744	468,687
	5	10	15	**30**	3,030,303	101,010	101,010	151,515	151,515	404,040
	7	23		**30**	3,030,303	101,010	141,414	348,485		489,899
	9	21		**30**	3,030,303	101,010	181,818	318,182		500,000

		10	20	**30**	2,020,202	67,340		101,010	134,680	235,690
		20	10	**30**	2,020,202	67,340		202,020	67,340	269,360
-	**161**	**462**	**177**	**800**	**64,106,348**		4,563,090	4,403,575	1,193,373	10,160,038

26. **Mainstreaming gender and youth into the project design**. Agriculture extension and business development services providers will be trained on gender sensitive approaches to allow them to assess and resolve gender related gaps. It will also be trained to address youth issues separately. It is expected that technical assistance providers will be able to identify and address the barriers that may exclude women or youth from profitable opportunities that matching grants may offer to them. To properly finance the subprojects, the call for proposal will be value chain specific (i.e., cocoa, coffee, fruits, honey, livestock, etc). Also, the project will finance two specialized grant windows with different conditions tailored to the needs of producer organization with different levels of development, business experience, and readiness for commercial activities (commercial and social inclusion).

27. **Aligning funding with market Access, productivity, sustainability, and climate change resilience.** Under the component 1, POs seeking financial support must design business or ethnodevelopment plan incorporating tangible strategies aimed at bolstering market accessibility, increasing productivity, fostering sustainability, and building resilience against climate change shocks, such as climate-induced droughts. These strategies should be quantifiable and measurable, thereby enabling effective monitoring by the PMU throughout the implementation of subprojects. Each business or ethnodevelopment plan approved will need to establish baseline, interim targets, and the specification of anticipated outcomes, therefore, ensuring a comprehensive approach towards achieving project objectives.

28. **The project will forge technical cooperation agreements with designated financial institutions such as Banco do Brasil (BB), Banco do Nordeste (BNB), Cooperativas de Crédito Rural com Interação Solidária (Cresol), Sistema de Cooperativas de Crédito do Brasil (Sicoob).** This collaborative effort aims to expand the pool of available credit accessible to producer organizations and their members, while also streamlining access procedures to simplify applications and potentially accelerate credit approval for both producer organizations and their members. The subcomponent will offer technical assistance focused on land rights formalization to support the completion of essential documentation for land ownership verification, crucial for securing specific credit lines. It will also guide producer organizations and individual farmers through the process of obtaining food safety licenses and certificates necessary for market access. Finally, the subcomponent will provide technical assistance to ensure compliance with environmental regulations for producer organizations and their members, which is becoming increasingly important for accessing to credit lines and markets.

E. OPERATIONAL STRATEGY

29. **Public calls for identification and prioritization of the demand.** Component 1 will rely on public calls as an instrument for democratizing access to grants. This methodology enables the broad participation of interested producer organizations (POs) through Expression of Interest (EoI). The implementation process of Call for Proposals will follow several stages until the final selection of the EoI that will be supported, as illustrated in **Figure 3** below. The process will include the combined analysis and evaluation of the selection criteria by the PMU and the Territorial Development Collegiates (CODETER), representing the 27 Territories of Identity.

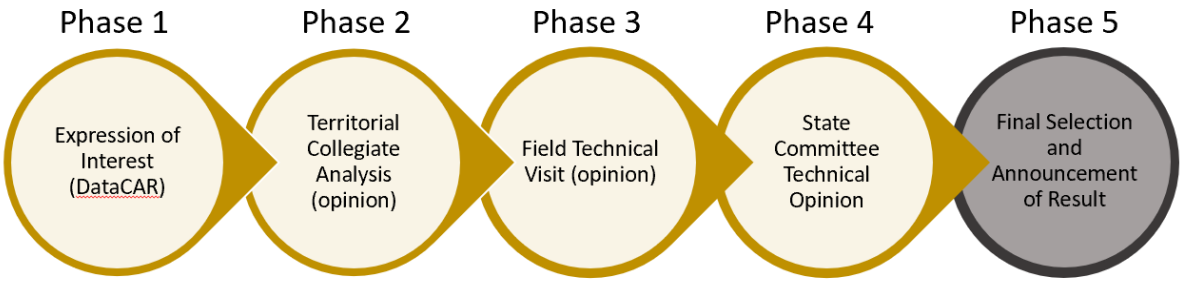
30. **Targeting of Investments.** During project design, the Project Management Unit (PMU) recognized the vast area of Bahia State and the potential risk for resource dispersion. To ensure focused implementation and maximize impact, the PMU established three key criteria for selecting priority agricultural value chains within the project component:

(i) **Strong Presence of Family Farmers.** Value chains with a high concentration of family farmers were prioritized. This ensures project interventions directly benefit the target population and contribute to their economic well-being.

(ii) **Income-Generating Potential.** The PMU identified value chains with the greatest potential to improve family farmer incomes. This could involve crops with higher market value, value-added products, or improved production efficiencies.

(iii) **Proximity to Agroindustry**: Value chains located close to agro processing facilities were favored. This strategic selection facilitates better access to markets, reduces post-harvest losses, and potentially allows for integration with larger production networks.

Figure 3. The selection process of the producer organizations



31. **The established targeting criteria have streamlined the project's focus within Bahia's agricultural value chains**. From an initial pool of 85 potential value chains, the PMU has identified seven that demonstrate the most promise for achieving project goals: oleaginous crops, fruit farming, beekeeping, dairy cattle, sheep and goat, cassava, and poultry. This targeted approach allows the PMU to concentrate resources on interventions with the highest potential impact on family farmers within specific geographic areas where these value chains are dominant. This will ensure a more targeted and efficient project implementation strategy.

32. **Across all value chains, the eligibility criterion for grant award will be to incorporate climate-smart agriculture practices and technologies.** These practices will contribute to achieving at least two of the three CSA pillars of improving productivity, adapting, and improving resilience to climate change, and mitigating climate change.

33. **Following the initial selection of Expressions of Interest (EoI), the process transitions into the participatory elaboration of Business and Ethnodevelopment Plans**. This phase adopts a two-pronged approach:

34. Market Analysis and Feasibility Assessment:

(i) ***Market Studies***: The initial step involves conducting market studies focused on prioritized value chains identified during the EOI selection process. These studies utilize market research methodologies to analyze local, regional, and national market opportunities. Local producer potential is benchmarked against competitors within the state and other regions. This analysis provides critical insights to guide the subsequent development of business and ethnodevelopment plans.

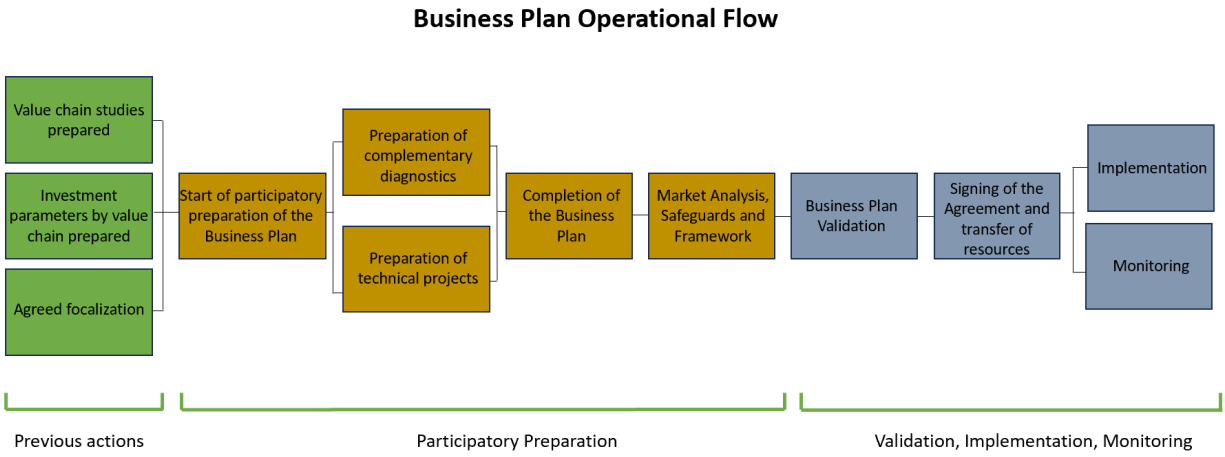
(ii) ***Technical Studies***: Upon confirmation of market feasibility through the market studies, further technical studies are conducted. These studies delve into various investment parameters specific to Producer Organizations (POs) or individual family farmers within the POs. This ensures project activities and investments are aligned with the operational realities of program participants.

35. Partnership and Capacity Building:

(i) ***Strengthening Institutional Collaboration.*** Recognizing the limitations of resources solely within Bahia, the project actively fosters partnerships with key institutions such as Embrapa, Sebrae, Senar, and Senai. Collaboration with these institutions is crucial for providing technical expertise and support throughout the design, preparation, validation, and monitoring of business and ethnodevelopment plans.

(ii) ***RuralInvest and Data-CAR.*** The project leverages the FAO's RuralInvest platform, integrating its system for the development of business plans with electronic CAR system. RuralInvest FAO is designed to support field technicians and entrepreneurs in developing sustainable agricultural and rural investment projects and business plans. It promotes a participatory and bottom-up approach, bringing together local communities, rural entrepreneurs, government field technicians, project staff, and financing institutions.

Figure 4. From market and technical studies to grant agreements and implementation.



36. **To tailor project interventions and optimize resource allocation, the project will implement a standardized PO characterization process**. This process utilizes three distinct typologies to categorize POs based on their operational maturity and development needs. These typologies are:

(i) **Dynamic POs:** These POs demonstrate established market presence and effective operational structures. They may require minimal project intervention but could benefit from targeted support for further growth or diversification.

(ii) **POs in Transition to the Market.** These POs are actively building their capacity to effectively engage in market activities. Project interventions will focus on strengthening governance, production practices, and market access strategies.

(iii) **POs focused on productive Inclusion and food security.** These POs prioritize social goals alongside the development of local economic opportunities. Project support will target capacity building to enhance sustainable production practices, provision of assets, financial literacy, and improve food and nutrition security for its members.

37. **Strengthening Producer Organizations (POs) and Fostering Collaboration**. The long-term viability of family farmer POs hinges on multiple factors, including access to infrastructure, equipment, management expertise, and market linkages. Often, even well-structured POs require further strategic expansion to achieve economies of scale, production specialization, and cost reduction. This expansion can occur horizontally (across similar production

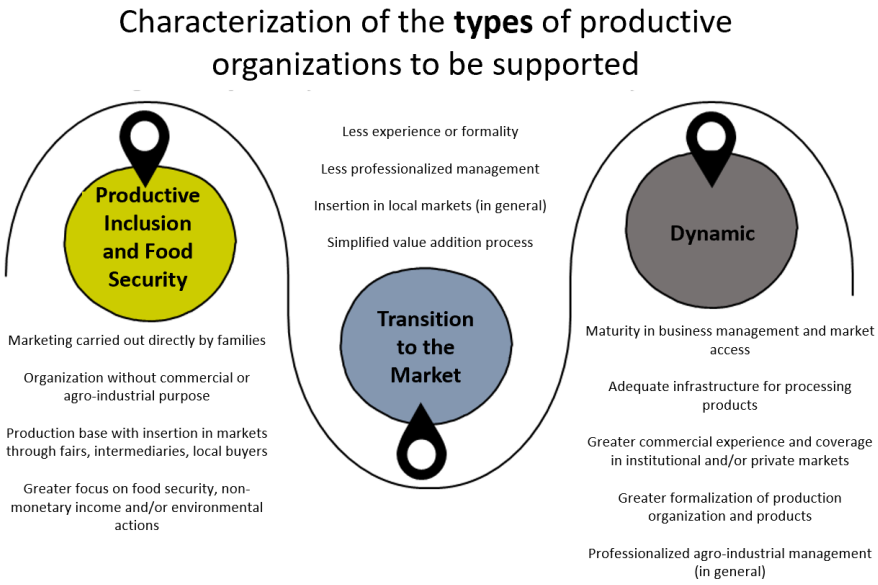
systems) or vertically (across different stages of the value chain). The project actively promotes the formation and consolidation of:

(i) ***Network development***. We will prioritize building strategic PO networks within value chains to: (a) consolidate production and optimize logistics, therefore, pooling resources allows for economies of scale, joint transportation, and shared storage.

(ii) ***Strengthen market access.*** Networks leverage combined volume and offer diversified products, attracting larger buyers.

(iii) ***Enhance market intelligence.*** Knowledge sharing improves understanding of trends, preferences, and new opportunities.

Figure 5. Tailoring investments to POs need and capacity.



38. **By establishing these networks**, the project aims to equip POs with the resources and capabilities to compete more effectively within the value chain, ultimately improving their market access and profitability.

39. **Provision of specialized technical assistance services**. The project will provide continuous and systematic technical assistance to support the delivery of business development and agricultural extension services for Producer Organizations (POs). This assistance will be customized based on:

    (i) ***POs* Type.** Different strategies will be applied to address the specific needs of POs in various stages of development (dynamic, transition to markets and social inclusion).

    (ii) **Value Chain:** The technical assistance will be tailored to the specific challenges and opportunities within each supported agricultural value chain.

40. The focus of technical assistance will vary depending on the PO's stage of development, see **Table 3** below.

41. **Support for expanding access to different markets.** The project will offer qualified technical support related to the improvement of management and access to markets, expanding or developing the commercialization of products and services in strategic markets. The structuring actions for market access will be defined according to the market strategy

to be accessed in short circuits, local, regional, state, national or external, private, or institutional markets. The development of product/product portfolio will also be implemented, alongside brand design, packaging, and labeling, brand positioning, survey of costs and formation of the sales price, pricing strategies, marketing strategy, logistics/distribution and promotional actions, certifications and other actions detected at the time of diagnosis in the supported organizations.

Table 3. Technical Assistance for Business Development and Agriculture Extension Services

Technical Assistance Services Strategy	Incidence of the Technical Assistance Service in Productive Organizations, according to the typology		
	Dynamic	Transition to Market	Productive Inclusion
Financial support to productive organizations for hiring two professionals: ▪ 1 Technical Assistance in Market and Management (ATEG) professional, with the ability to work in various areas of management and access to markets, supporting problem solving, implementing tools and solutions for the search for results ▪ 1 Technical Assistance professional dedicated to the Productive Base (ATER) to act in technical assistance with the cooperative members, qualifying the production model, productivity and good management practices, in order to ensure the quality, regularity and standard of the products destined to the agroindustry	Ø		
Financial support to productive organizations to, through support institutions, contract: ▪ 1 professional called Business Agent to act in support of management and access to markets, implementing tools and solutions for the search for results ▪ Service under the management of an ATEG, in the 1/20 ratio, which will monitor and support these professionals		Ø	
Provision of continuous and systematic technical assistance services through partnerships already signed between CAR and the Bahia Superintendence of Technical Assistance and Rural Extension (BAHIATER) and the Territorial Public Consortiums		Ø	Ø
Offer of highly specialized technical assistance services to carry out specific training actions, field days and specific service, through professionals already hired directly by CAR and BAHIATER	Ø	Ø	
Contracting of technical assistance services through ATER provider institutions, with a multidisciplinary team and continuous and systematic service with interaction with Rural Community Agents (ACR) to be hired by the supported productive organizations		Ø	Ø
Construction and maintenance of an ATER Digital Platform called Ruralities Intelligence Center, through the partnership between CAR and BAHIATER, with the support of EMBRAPA and other institutions with the objective of allowing access to information, content, training, and technical assistance services, using artificial intelligence mechanisms, *chatbot*, digital content and online call center.	Ø	Ø	Ø

42. **Sustainability and Climate Resilience.** The Project will support and fund the adoption of sustainable CSA technologies and practices that increase climate resilience, for which it will undertake the following activities: (i) carry out studies to understand climate related challenges faced by each production system in each edaphoclimatic region; (ii) carry out studies to quantify the identified risks; (iii) carry out assessment to identify actions (adaptation and mitigation)

that can best used build resilience to shocks. The Project will directly implement actions on climate sensitive technological innovations that promote greater climate resilience, finance the implementation of technological reference units and multiplication of genetic material, certifications, services and solutions and continuing education. The results of these studies will be mainstreamed into the business and ethnodevelopment plans.

ANNEX 4. Economic and Financial Analysis (EFA)

A. INTRODUCTION

1. The investments to be financed by the Project include:

   a. **Component 1** – design of business plans for subprojects, provision of matching grants to producer associations for business plans implementation, services in support of business plans implementation, and services to develop the capacities of managers and of technical assistance providers to the supported businesses (US$79.8 or R$ 399 million – 53 percent of total project investment)[91];

   b. **Component 2** – construction or rehabilitation of water supply systems for 20,000 households, three new community water supply systems management centers (*centrais*), underpinning studies, and capacity development interventions for water users, system operators, and managers of "centrais" (US$41.5 million or R$ 207.6 million – 27 percent of total project investment);

   c. **Component 3** – (i) identification and deployment of suitable agricultural technologies, strengthening of advisory services, product certification, and provision of other support services for stakeholders of Component 1, (ii) adoption of green technologies by "*centrais*" (US$7 million, R$ 34.8 million – 5 percent of total project investment);

   d. **Component 4** – Project management and institutional strengthening (US$23.3 million, R$ 116.5 million – 16 percent of total project investment).

2. This annex presents the Economic and Financial Analysis (EFA) of these Project interventions. The analysis of Component 1 is based on eighteen models that illustrate possible financial results from business plans financing. For each illustrative example, the analysis accounts for project costs and benefits in a realistic and conservative manner and builds cash flows for scenarios "with" and "without" project, as well and for the difference between these scenarios (project result). Key-indicators of the analysis for each case are net margins, return on labor, Financial Net Present Value (FNPV), Financial Internal Rate of Return (FIRR). The economic analysis presents a scenario in which these models are translated into economic prices and combined and upscaled to match the total investment made by Component 1. Net Present Value (NPV), Internal Rate of Return (IRR) and switching values for both benefits and costs are calculated for the component.

3. Component 2's efficiency is measured based on the financial performance of each "central". Expected total amount of collected tariffs are assessed against annual operation and maintenance costs. The analysis at the level of each central determines whether overall revenues can cover the operational and maintenance costs of the community water supply systems as well as the management and operational costs at central level. The economic analysis compares the estimated benefits from accessing adequate water supply and sanitation services with the total investment, maintenance operational costs of the new systems.

4. Additional benefits for the society will be generated from improved or maintenance of ecosystem services in the areas in which the project will intervene, such as maintenance of natural vegetation for beehives, improved livestock feeding practices, and improved soil management which will translate into increased or maintained carbon storage and biodiversity.

[91] The total amount does not include contributions by the beneficiaries.

B. FINANCIAL ANALYSIS OF COMPONENT 1

5. The primary objective of the financial analysis is to determine the incentives for the target group's participation in project activities. Hence, it examines the project´s estimated effects on family labor, net margins and cash flow. The project will focus on the most promising value chains for family agriculture in the state, but interested producer groups, responding to market opportunities will ultimately determine the product mix of their business plans. Pre-identified strategic products and their respective productive chains include a) poultry; b) beekeeping products; c) cassava and its products; d) fruit tree crops including cocoa and coffee and transformed products; e) ovine and caprine meat production and processing; and f) milk and dairy products.

6. The analysis estimated the net incremental benefits for rural entrepreneurs at organization and farm level because of project intervention. Benefits accruing to farmers include a) larger production volumes available for sale; b) increased value added of family farming products; and c) more stable income from family farming through increased production systems' resilience. These benefits are generated by the: (i) adoption of practices and technologies that enhance agricultural and livestock productivity; (ii) adoption of practices that contribute to improved resilience to climate change and extreme weather events; iii) enhanced processing efficiency, and iv) improved quality of products and access to markets that remunerate quality. These in turn result from investments in targeted technical assistance, infrastructure, and equipment, as well as changes in inputs and production factors use as designed in each PO business plan.

7. The project is expected to support three types of producer organizations (PO): (i) "dynamic", (ii) "in transition to markets", (iii) "productive inclusion[92]. Illustrative models of primary production and processing were developed for different pre-selected value chains and typology. The models were built with data from a mix of primary information collected during the evaluation of the preceding project (*Bahia Produtiva*) and secondary sources (e.g., documented experiences in the state of interventions in cassava primary production). The sizes of the POs and of the investment were established based on a sample of subprojects financed by *Bahia Produtiva* in the different value chains and typologies.

8. **Exchange rate**. The exchange rate used in the analysis will be fixed at 1 US$ = 0.20 BRL as adopted in the PAD.

9. **Prices**. Price level is expressed in local currency unit for sub-projects inputs and products at farm gate according to average market prices as collected during interviews to *Bahia Produtiva* beneficiaries during 2023. The analysis was undertaken using constant prices.

10. **Opportunity cost of capital**. A discount rate of 10 percent for a 10 years' period was applied in this analysis to assess the viability and robustness of the investments.

11. The following paragraphs provide a short description of each of the 18 models that were used. **Table 1** summarizes the main indicators that characterize them.

    (i) Poultry (*productive inclusion*) – A model was constructed for the improvement of free-range chickens rearing based on a system developed by Embrapa, in which breeders are selected in the community, the well-being of the birds is improved, and a semi-intensive system is adopted in which the birds are separated by age and sanitary conditions. To this end, the project would invest in chicken coops, electric brooders, and technical assistance provided with well-defined technical specifications and a

[92] *Dynamic businesses* add value to primary production and market it to formal public and private sector buyers. Businesses *transitioning into markets* still sell through informal channels but have already started marketing their products in formal markets (mostly through public sector acquisitions programs). *Productive inclusion* projects aim at selling small quantities of produce in informal markets or at making initial steps towards selling to public sector acquisition programs.

demonstrative chicken coop. The association would sell eggs to an egg sorting and packing unit in the region. Costs of production may be high for some families (R$ 3,600 per year on feed and transportation) and payments may not be done on delivery, meaning that participating families need to be assisted in managing their working capital effectively.

(ii) Vegetable gardens (4 models of *productive inclusion*) - The four analyzed cases comprised: (2) one community vegetable garden implemented; (3) - one investment in 6 vegetable gardens for 30 families; (4) - one investment in three sustainable integrated agro-ecological production systems (Sistema de *Produção Agroecológica, Integrada e Sustentável* – PAIS) and two vegetable gardens for 18 families; and (5) one investment in re-use of water to the irrigate existing vegetable gardens of 21 families. Efficiency depends on the size of the investment vis-à-vis productive capacity but returns on labor per family are expected to be consistent across the board. In general, vegetable gardens provide a small average increase in income per family (R$ 200-2700/family/year, depending also on how many families share the income of each garden). However, as they do not demand more than two hours of dedication per day in average, they yield a good return on each day worked (R$ 80-240/day).

(iii) Beekeeping (4 models: 2 *dynamic*, 2 *in transition to markets*): (6) The investment would be made in a cooperative selling nearly 100 percent of its production to exporters paying a price to producers above that usually offered by local traders. The project would invest in new hives and training for 100 members and improved processing facilities. Honey production and sales would increase by 50 tons; (7) The project would invest in a cooperative that receives honey from a network of honey extraction units and directly from about 340 producers. The investment would focus on increasing the cooperative's capacity to store and package (scale and value addition). Average annual production would increase by 92 tons and annual sales by R$ 1.6 million; (8) The project would invest in the rehabilitation of an association's honey extraction unit, in hives and technical assistance to producers. The production of additional 15 ton of honey and prices secured by an alliance with a local cooperative would significantly increase the beneficiaries' return on labor; and (9) The investment would increase the number of hives and improve hive productivity. The association would sell to a cooperative that guarantees prices in line with market trends. Experience from other projects suggest that securing markets with fair prices may be key to the sustainability of the business and it provides and incentive to keep swarms alive even in dry years when production is lower.

(iv) Cassava (*in transition to markets*) – The project would support an association of 40 cassava producers who plant an average of one hectare with varieties with low productive potential in degraded soils with high occurrence of pests and diseases. Producers have available land and human resources to increase their planted areas to an average of 2 hectares per family but have difficulty transporting and marketing larger volumes. All the production is sold to middlemen. With the project the association would invest in mechanization (tractor, implements for soil mobilization, harvest, and transport), recover an existing common warehouse to store roots, and form an alliance with a starch factory to which they would sell all their production. With this market perspective, they would increase planted areas and introduce improved varieties and soil management practices. Average yields would increase from 7.9 to 15 tons per hectare (the state's average). Cassava roots would have a higher starch content and be easier to peel (thus marketable to the factory).

(v) Fruit crops (2 models of Cocoa, one of *productive inclusion* and one in *transition to markets*): (12) The project would invest in post-harvest facilities and farm equipment for cocoa producers. Technical assistance would be provided for the improvement of production practices and for tree planting. Yields per hectare would increase due to the new plants, but in the longer term. Commercialization of cocoa

would still be made through intermediaries without secured prices or price premia for quality. Incentive for improved production will be clear to farmers as long as cocoa prices remain high due to the current decline in global supply. Incentives may will reduce in a period of abundant supply if yields per tree are not increased. (14) The project would invest in irrigation kits and post-harvest facilities for cocoa farmers who supply directly to a factory. In average, the yields would increase from 400 to 600 grams of dry cocoa per tree under conservative assumptions. A secure market should incentivize investment in obtaining higher yields.

(vi) Sheep and goat meat (2 models, one *dynamic* and one of *productive inclusion*): (17) The project would invest in a fattening unit associated to a goat and sheep abattoir. The investment would help secure the supply of animals in sufficient quality and quantity to the abattoir and would include improved genetics, husbandry practices and capacity to produce fodder. Feeding costs would decrease by more than 50 percent due to the supply of feed by the abattoir and the sales of animals would increase by 40 percent. Although this model has been tested with success by *Bahia Produtiva*, it requires follow up from technicians and efficient transport of feed and animals. (18) The project would invest in shelters, forage reserves and genetic improvement at the family level. A collaboration with an abattoir would improve sanitation and husbandry practices. Adequate feeding would be guaranteed by and irrigated forage reserve. Mortality rates would reduce, and fertility rates increase.

(vii) Milk and dairy products (3 models, one *dynamic*, one in *transition to markets* and one of *productive inclusion*). (20) The first case would consist of a dairy plant with nearly 200 suppliers which would invest in the enlargement of its facilities, solar panels, and improved primary production (palm plantation, artificial insemination, and milk quality control). Productivity and herd sizes would improve significantly. Simultaneously the cooperative would expand its portfolio of products. (22) The second case would only invest in technical assistance focused on improved management and sales. A recently built plant operating well below capacity would increase its annual net revenues from about R$1.6 million to over R$ 3 million. (19) The third case analyzes an investment in a milk refrigeration center and silage and hay production equipment. The milk refrigeration center would enable a change in market outlet from individual door to door sales to group sales to a dairy plant. The enlarged market and new equipment would incentivize and enable significant increases in productivity and heard size.

12. Key performance indicators for all models are shown in **Table 1** and in **Figure 1**.

Table 1 - Summary of incremental results of financial models (with and without project)

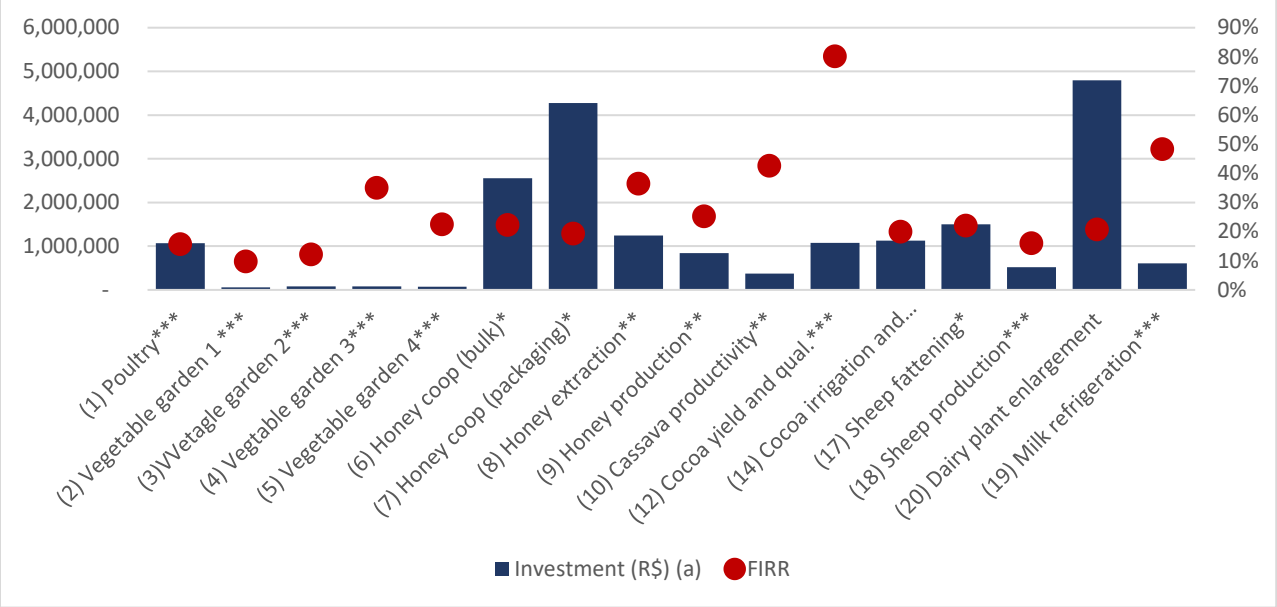
	Investment (R$) [a]	# beneficiaries	Investment/ beneficiary	FIRR	FNPV	Net Margin per family /year [b]	Return on labor/family /year
(1) Poultry***	1,070,000	20	53,500	16%	210,000	10,800	16,400
(2) Community vegetable garden***	60,000	20	3,000	10%	-	300	1,400
(3) Six vegetable gardens***	80,000	42	1,905	12%	10,000	1,900	2,700
(4) Three agro-ecological systems and 2 vegtable gardens***	80,000	18	4,444	35%	90,000	700	200
(5) Vegetables gardens irrigated with grey water***	70,000	60	1,167	22%	20,000	800	N/A
(6) Honey cooperative (bulk for export)*	2,560,000	171	14,971	22%	1,400,000	5,400	3,500
(7) Honey cooperative (bulk and packaged sales)*	4,270,000	120	35,583	19%	1,300,000	3,900	8,600
(8) Honey extraction unit**	1,240,000	66	18,788	36%	1,090,000	1,600	1,800
(9) Honey production**	840,000	30	28,000	25%	490,000	9,900	11,200
(10) Cassava**	370,000	40	9,250	43%	1,030,000	5,600	10,100
(12) Cocoa productivity and post harvest***	1,070,000	37	28,919	80%	4,230,000	31,700	31,700
(14) Cocoa irrigation and post harvest**	1,130,000	38	29,737	20%	520,000	9,600	9,600
(17) Sheep fattening*	1,500,000	90	16,667	22%	980,000	5,900	7,600
(18) Sheep and goats production***	520,000	20	26,000	16%	160,000	6,200	8,700
(20) Dairy plant enlargement and milk production	4,800,000	198	24,242	21%	2,920,000	9,000	N/A
(21) Dairy plant improved management**	N/A	52	N/A	N/A	N/A	4,900	N/A
(19) Milk refrigeration and improved husbandry***	610,000	16	38,125	48%	1,550,000	21,800	29,700

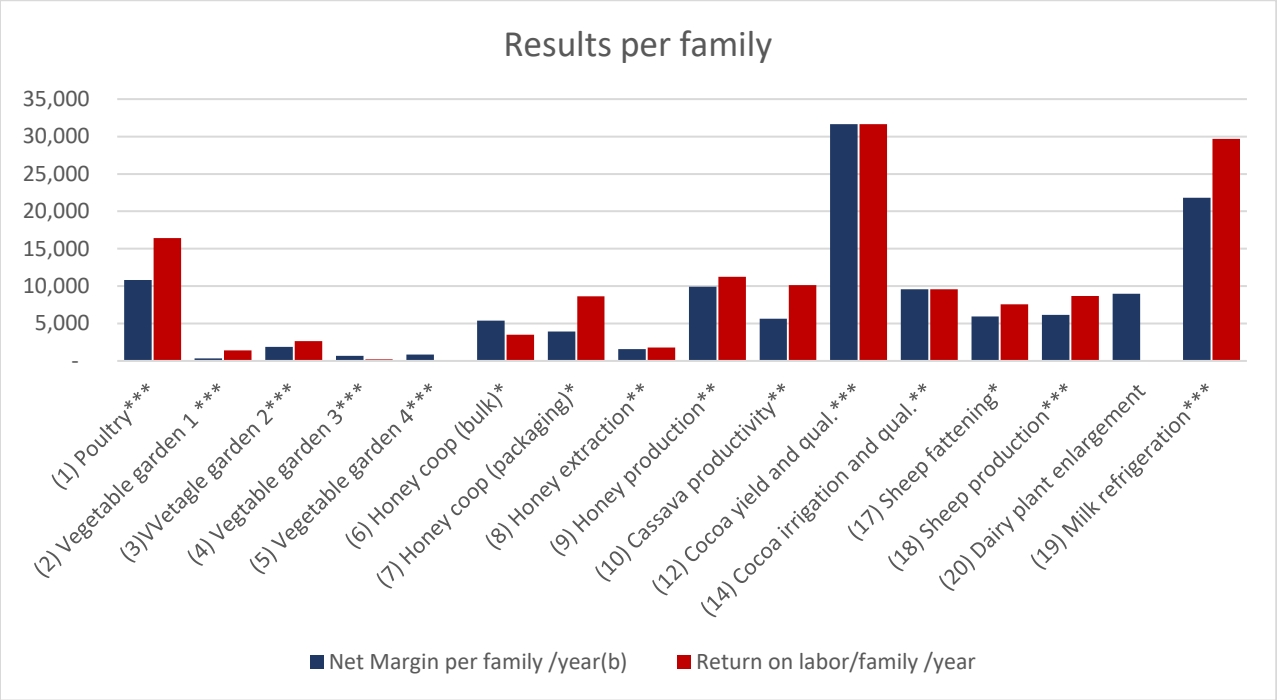
Notes: (a) Does NOT include investment in technical assistance

(b) Values once the project achieves maturity (4th year).

* *Dynamic* organization. **Organization *in transition to markets*. ***Productive inclusion* organization.

Figure 1 - Investment and Internal rate of return for each model (above) and financial results per family.





13. The selected models demonstrate that there are opportunities to finance feasible investments in each of the selected value chains.

C. FINANCIAL ANALYSIS OF COMPONENT 2

14. The project will finance the construction and rehabilitation of community water supply systems managed by three "*centrais*". In total, the project is expected to provide 8,000 new connections and to rehabilitate 12,000 existing ones. **Figure 2** depicts the connections that are expected to become effective at each year of the project per "central".

15. **Figure 3** shows forecasted cashflows for the three new *centrais* as the connections are built or rehabilitated and become effective. For the calculations of these cashflows, operational and maintenance costs were obtained from CERB and are based on the current average costs per connection of the systems financed by Bahia Produtiva. Likewise, the analysis assumed that total tariffs collected per household average R$25, the same as for Caetité "central" financed by *Bahia Produtiva*. The analysis assumes that 88 percent of connections are effective by 2029 (the current share of effective connections in water supply systems financed by *Bahia Produtiva*). Under this scenario the "*centrais*" are expected to make small surpluses of around R$ 0.5 million per year (see Figure 2) from 2030 onwards, the year that project support for operational costs is phased out. Hence, from 2030, the forecasted operational and maintenance costs for each central can easily be covered with a tariff for which there is demonstrated willingness to pay by rural populations of the state. The sustainability of the "*centrais*" will thus depend on the accuracy and timeliness of the cost and revenues monitoring and forecasting system of each "central".

Figure 2 – Programmed delivery of water supply systems throughout the project implementation

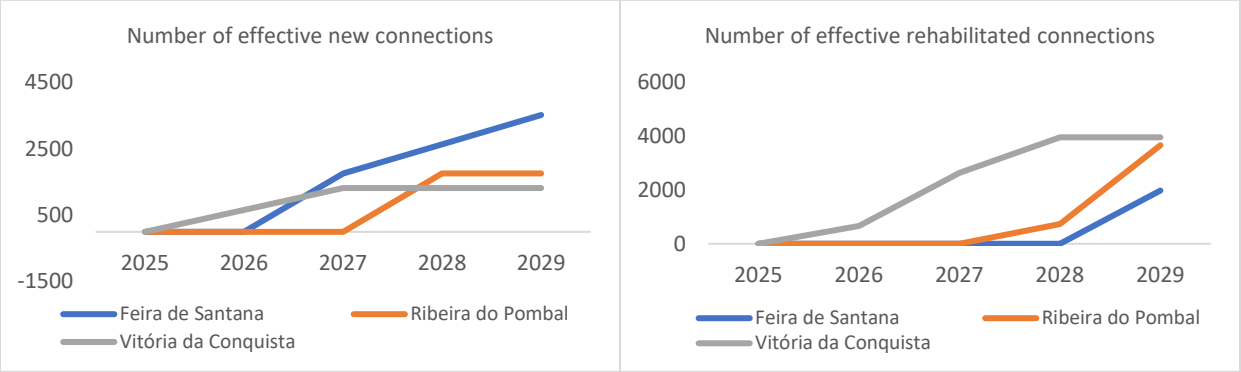
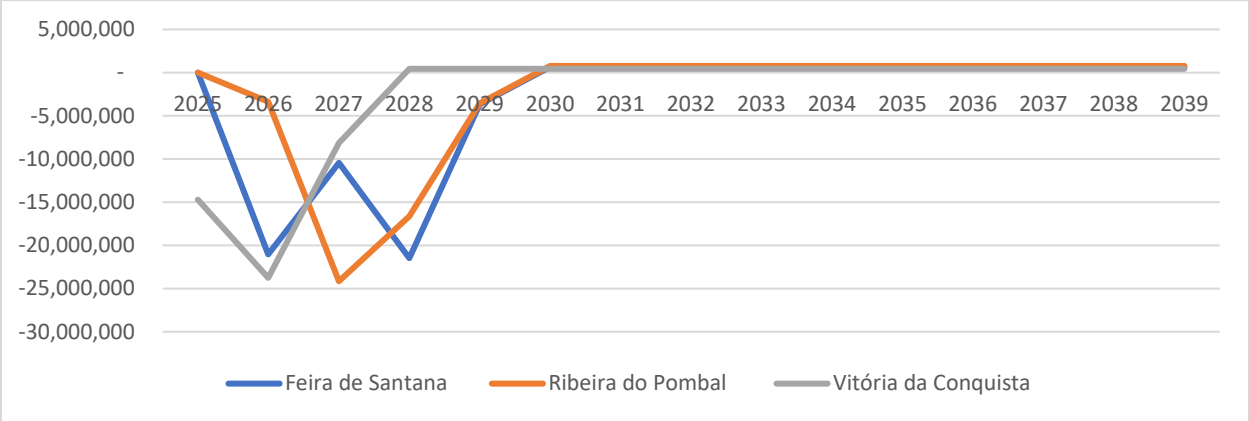


Figure 3 – Forecasted cashflows for the three *centrais* considering investment costs (2019-2023), revenues and operation and maintenance costs (at central level) – Figures in constant R$.



D. ECONOMIC ANALYSIS

Economic Analysis of component 1

16. The economic analysis of component 1 is based on a cash flow that considers the phasing in of the total estimated investment in producer organizations – direct (subprojects) and indirect (structuring of technical assistance services, management costs, etc.). Key indicators of the analysis are Project Net Present Value (NPV), and Project Economic Internal Rate of Return (EIRR).

Investment phasing-in

17. The Project Implementation Unit (PIU) has programmed issuing 13 calls for proposals throughout the project implementation's period. Each call for proposals will be directed to a specific public and or subsector and will contain targets on number of financed subprojects and total investment. The programmed calls for proposals and annual targets are summarized in table 2.

18. For this analysis, each call for proposal investment (and respective results) will be represented by selected illustrative models from those described in the financial analysis. The matching between illustrative models and calls for proposals was made based on the intended target population and the experience from the previous project, *Bahia Produtiva*. This matching is summarized in table 2.

19. Subsequently, the sum of the cash flows of the illustrative models elected to represent each call do proposals was multiplied by a coefficient to match the investment of the illustrative models with that made by the project in the respective call for proposals each year.

20. A total cash flow for component 1 was produced considering the annual investments made by the project in each call for proposal each year. Investments programmed for Component 3 but that will impact on the results of component 1 (see Table 3) were added to this cashflow.

21. Financial prices were not adjusted to economic prices as the conversion factors in the literature for Brazil are not necessarily applicable to the specific items of productive subprojects in Bahia and are outdated[93], with exception of those for labor. The conversion factor adopted for labor was 0.6064[94].

22. Under this set of assumptions, component 1 and component 3 yield an IRR of 16 percent and an NPV of R$ 107 million at 2023 constant prices considering a discount rate of 10 percent (before Component 4).

Economic Analysis of component 2

23. Economic efficiency of the solution proposed by the project is measured against the status quo, i.e., inexistant or intermittent household supply of untreated water. This preliminary economic analysis uses the results of an empirical analysis undertaken by the Trata Brasil Institute on the average increase of Bahia's rural households' revenues as a proxy for the benefit from accessing adequate water supply and sanitation services. The analysis is conservative as it does not make a complete account of the current costs of supplying untreated water to the households, thus considering that all maintenance and operation costs of the rehabilitated systems are additional.

24. As for the financial analysis, all investment, operational and maintenance costs considered in the analysis were obtained from Cerb and are based on the current average costs per connection of the systems financed by *Bahia Produtiva*.

25. Under these assumptions the investment in water supply systems (before Component 4 costs) yields an economic IRR of 44 percent and an NPV of R$ 342 million in 2023 prices considering a discount rate of 10 percent and period of analysis of 15 years.

[93] The latest available study, Metodologia de Avaliação Econômica e Financeira de Projetos: a Experiência de PMSSII, by from Moita et al., is from 1998.

[94] https://www.gov.br/economia/pt-br/acesso-a-informacao/participacao-social/consultas-publicas/arquivos/copy_of_2_PSMO.pdf

Table 2 - Programmed calls for proposals and illustrative models, number of subprojects and disbursement timelines for each of them (investment in R$ million – project and beneficiary contribution)

Calls for proposals	Illustrative models	# of projects approved					Value of subprojects approved					Expected disbursement					
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2029
01 - Technical assistance to Dynamic POs	7, 14, 20	80	0	0	0	0	45	-	-	-	-	5.6	8.5	11.3	11.3	5.6	2.8
02 - Management support for POs in transition	21	320	0	0	0	0	82	-	-	-	-	10.2	15.3	20.4	20.4	10.2	5.1
03 - Food security	2,3,4,5	0	78	0	0	0	-	20	-	-	-	2.5	3.8	5.0	5.0	2.5	1.3
04 - Dynamic productive Alliances	6,7,17,20	0	0	33	0	0	-	-	40	-	-	5.0	7.5	10.0	10.0	5.0	2.5
05 - Fruit crop	12,14	0	0	44	0	0	-	-	30	-	-	3.8	5.6	7.5	7.5	3.8	1.9
06 - Indigenous peoples	1,2,3,4,5,18	0	0	32	0	0	-	-	12	-	-	1.5	2.3	3.0	3.0	1.5	0.8
07 - Afro-decendant communities	1,2,3,4,5,18	0	0	33	0	0	-	-	12	-	-	1.5	2.3	3.0	3.0	1.5	0.8
08 - Cassava	10	0	0	0	30	0	-	-	-	16	-	2.0	3.0	4.0	4.0	2.0	1.0
09 - Sheep and goat - dynamic/transition	17	0	0	0	15	0	-	-	-	11	-	1.4	2.1	2.8	2.8	1.4	0.7
09 - heep and goat - inclusion	18	0	0	0	15	0	-	-	-	4	-	0.5	0.7	0.9	0.9	0.5	0.2
10 - Beekeeping and honey products - dynamic	6,7	0	0	0	7	0	-	-	-	5	-	0.7	1.0	1.3	1.3	0.7	0.3
10 -Beekeeping and honey products - transition	8,9	0	0	0	23	0	-	-	-	10	-	1.2	1.8	2.4	2.4	1.2	0.6
11 - Milk and dairy products - dynamic	20	0	0	0	9	0	-	-	-	7	-	0.8	1.3	1.7	1.7	0.8	0.4
11 - Milk and dairy products - transition	19	0	0	0	21	0	-	-	-	8	-	1.0	1.5	2.1	2.1	1.0	0.5
12 - POs managed by women	1,2,3,4,5,18	0	0	0	0	30	-	-	-	-	10	1.3	1.9	2.5	2.5	1.3	0.6
13 - PO managed by youth - transition	1,2,3,4,5,18	0	0	0	0	20	-	-	-	-	4	0.5	0.8	1.0	1.0	0.5	0.3
13 - OP managed by youth - inclusion	9	0	0	0	0	10	-	-	-	-	6	0.8	1.1	1.5	1.5	0.8	0.4

Overall Project Economic Analysis

26. As for the components analysis, the following parameters were considered:

(i) Project life has been set at 15 years, in light of investments lifecycles (including six years of project investment);

(ii) An economic discount rate of 10 percent;

(iii) A Shadow Exchange Rate (SER) of 5 R$/US$;

(iv) Adoption rates of 75 percent for component 1 and of 88 percent for component 2; and

(v) An opportunity cost of unskilled labor corresponding to 0.6064 of labor market prices.

27. **Benefits Estimation**. The incremental benefits stream comprises the economic net values of all the models developed in the financial analysis (with project scenario minus without project scenario). These economic net benefits are aggregated as explained above for components 1, 2 and 3. Operational and management costs borne by Component 4 were included in the overall cashflow. Environmental externalities in the form of increased carbon storage or avoided emissions have been computed applying the Ex-act tool to the changes described in the illustrative models and amount to an average of 127 thousand tCO_2-eq/year.

28. Following the most recent World Bank guidelines[95], the project's economic analysis indicators were estimated using a higher carbon price (HCP) assumption (US$114/$tCO_2$-eq in 2025 with yearly increases) and a lower carbon price (LCP) assumption (US$58/$tCO_2$-eq in 2025 with yearly increases) to estimate economic benefits from reducing GHG.

29. **Sensitivity Analysis**. The robustness of these economic indicators was tested and confirmed with a sensitivity analysis that produced switching values for cost increases and benefit reduction for the HCP, LCP and baseline scenarios.

30. **Results**. In the baseline scenario described above the project yields a 21 percent economic internal rate of return and a net present value of R$ 364 million before accounting for environmental benefits from reducing GHG. Table 3 summarizes the results.

Table 3 – Summary of results of the economic analysis

Before Environmental benefits	
Internal rate of return	**21%**
Net present value (R$ million)	**364**
Switching value for benefits (price decrease)	-19%
Switching value for costs (increase in the price of inputs and labor	22%
Switching value for benefits (decrease in benefits with project)	-9%
Switching value for costs (increase in costs with project)	15%

[95] Guidance note on shadow price of carbon in economic analysis. World Bank, September, 2017

Shadow price with low carbon price	
Internal rate of return	**27%**
Net present value (R$ million)	**620**
Shadow price with high carbon price	
Internal rate of return (R$ million)	**33%**
Net present value	**876**

ANNEX 5. Gender Gaps Analysis and Indicators

A. **Main gender gaps identified in the MPA Program's areas of interventions:**

1. Brazilian rural women face challenges with limited access to land, assets, and credit, as well as traditional cultural norms and household division of labor restricting their mobility and time. Insufficient access to information and technical assistance, low representation in leadership roles, and lower wages also impact their ability to access nutritious food, leading to higher food insecurity.

2. Inequalities in the access to water, sanitation, and hygiene services (WASH) disproportionately impact women. Economic constraints can also prevent access to better water sources or technologies to reduce water collection burden.

3. **Country and Bahia State Context –** Considering the significant disparities between men and women in rural areas, the project will intervene in sectors where gender inequalities are widely known and particularly interlinked: agriculture, regular and safe access to water, and food security.

B. The main gender gaps relating to these sectors are detailed below:

4. **Unpaid domestic and care work:** Women are often responsible for unpaid domestic and care work, leading to significant gender gap in labor earnings (23 percent). In Bahia, women dedicate an average of 23.1 hours a week to domestic and/or care work. Where collecting water is needed, their additional burden is at least 4 hours/week for this task[96]. Making water available at home saves 16 percent of the daily time spent carrying water[97].

Project strategies for addressing this Gender Gaps:

5. **Component 2 –** Hold community workshops on Gender, Inclusion, and Water to discuss social roles, gender inequality, women's specific needs (like menstrual hygiene), and the broader effects of lacking treated water (such as health risks and impact on income and productivity).

6. **Components 1 and 3 –** (i) Train technical and ATER teams on gender issues to increase women's participation. (ii) Promote recognition of women's work (paid and unpaid), raise awareness about violence against women, and encourage their involvement in decision-making. As a novel approach, (iii) introduce agroecological notebooks[98] to empower women by helping them track their time spent on activities.

7. **Decision-Making and Leadership:** Women are underrepresented in leadership roles in the agricultural sector in Brazil, with only 26.9 percent of family farming establishments in Bahia being female-led. In some areas, only 4 percent of establishments are run by women. However, there has been an increase in women's participation in management, with 37.6 percent of family farmers associated with cooperatives or associations. In the previous project, 26 percent of supported organizations were led by women, and they made up 47.4 percent of the project's beneficiaries. Additionally, women comprised 53.3 percent of the decision-making and management team in community organizations and 45.5 percent of the technical staff in water supply systems.

Project strategies for addressing this gender gap:

[96] Recent national data (IBGE 2022).
[97] Data from the previous Project *Bahia Produtiva*.
[98] Agroecological notebooks are designed to foster awareness about time management and facilitate negotiations regarding the distribution of household chores.

8. **Component 1 –** Prioritize women, offering differentiated scores for the selection of sub-projects to be supported.

9. Component 2 – (i) Promote women's involvement in policy planning, water and sanitation action and executive committees, aiming gender-balanced representation; (ii) Train on gender and participation to increase women's engagement in organizations, raising awareness on social roles and gender inequality; and (iii) Negotiate a minimum quota ensuring women involvement into management and technical teams of the new *Centrais das Águas.*

10. **Low Labor Force Participation:** In Bahia in 2017, over 2 million people were employed in rural businesses, with 72.3 percent in family farming. Women represented 51 percent of the members in the previous project and 49.7 percent in community organizations with water supply systems, in which only 4 percent were identified as local operators.

Project strategies for addressing this gender gap:

11. **Component 1** – Launch specific calls and subprojects support for women.

12. **Component 2** – Prioritize local operators of water supply systems expanding women's engagement.

13. **All Components** – Require project's contractors (construction and ATER included) to have a minimum quota of women hired.

14. **Access to Land and Resources:** The unequal access to land and productive resources hinders women's full engagement in agricultural activities. Women in family farming represent 22.6 percent of owners of small areas (up to 20 hectares), but only 13 percent in larger areas (20 to 500 ha). This gap in land ownership directly affects access to credit, with only 17 percent of rural credit resources earmarked for contracts held by women in 2023.

Project strategies for addressing this gender gap:

15. **Component 1** – (i) Identify barriers to women's credit access; (ii) Expand women's access to rural credit for specific lines[99]; and (iii) Provide gender training and information about rights to increase women's knowledge on land regularization and credit procedures.

16. **All Components –** Continue the previous Project's initiative of supporting the compliance for land regularization, **including** coordination with other State level public policies, prioritizing those with titling in the name of women.

17. **Training and technical assistance:** In rural areas, women have limited access to education and training, affecting their ability to adopt modern agricultural practices. In 2017, only 12.2 percent of women in family farming received technical guidance and 15.1 percent received government-provided TA.

Project strategies for address this gender gap:

18. **Component 1 –** (i) Train ATER teams on gender issues, increasing participation and inclusion of women. (ii) With ATER support, identify gender barriers to reduce the gap in investments led by women compared to men.

19. **Component 2 –** Prioritize women and youth in the management of community organizations and in trainings on operation of water supply systems.

20. **Component 3 –** Prioritize women and youth on trainings, especially those on new climate resilient technologies.

[99] PRONAF Mulher, in addition to CredAmigo.

21. **Income Disparities**: Women in rural areas earn 20 percent less than men, and within the agricultural sector, their salaries are 16.2 percent lower than men's. Female-headed POs had an average income of 24 percent of male-headed POs. Women-led POs had an annual income of 25 million reais, while those led by men had an annual income of 80 million reais[100].

Project strategies for addressing this gender gap:

22. **Components 1 and 3 –** Launch specific calls for proposals for women, ensuring a participatory process and respecting the unique characteristics of different women's groups at various organizational levels.

23. **Food security:** In Brazil in 2022, 40 percent of households have full access to food. Hunger occurs in 19.3 percent of women-led households and 11.9 percent of men-led households, 12 percent of the general population lacks regular access to water. In the Northeast, 41.2 percent of households with restricted water access experience food insecurity. Female-headed households are overrepresented among the most vulnerable and underserved. Access to reliable water and sanitation services can help address gender inequalities.

Project strategies for addressing this gender gap:

24. **Components 1 and 3 –** (i) Prioritize productive inclusion and food security for vulnerable organizations, with guidance on accessing local markets; (ii) Launch specific call for proposals for vulnerable groups such as IPs, traditional communities, and *quilombolas*; and (iii) Implement agroecological notebooks to strengthen the management and autonomy of the most vulnerable women.

25. **Component 2 –** Promote community-level training on hygiene and water conservation to improve food handling, reduce health problems from water-borne diseases, and contribute to reducing food insecurity.

26. **Water insecurity:** In Brazil, 1 in 4 women lack regular access to treated water, affecting 15.8 million women. This lack of access has also affected 24.7 million women, leading to withdrawals from routine activities, hospitalization, and deaths due to waterborne gastrointestinal diseases.[1]

Project strategies for addressing this gender gap:

27. Components 2 – Conduct community-level training on Gender, Inclusion, and Water, to address social roles, gender inequality, women's achievements, and the value of women in community organizations and daily life.

[100] Data from previous Project Bahia Produtiva

Summary of key strategies for addressing the Project's context gender gaps:
Component 1: Economic Dynamization, Improving Production, Management and Organization for Markets[101]

Activity	Project Gender Actions	General Output	*General Intermediate Results*	PDO Indicator	Gender Gap Indicator
Capacity-Building activities to POs on market access, financial education, and climate resilience practices;	Increase the number of women trained on market access, financial education, and climate resilience practices.	Farmers and managers trained; POs Business Plans designed; POs investments implemented; POs and farmers with improved access to credit and other public policies.	*Organizations with improved management practices;* *Business plans implemented;* *POs and farmers with improved access to credit;* *Families with improved food security.*	Increase sales of agricultural and food products from the POs supported by the project; Increase in income of family farmers supported by the project (social inclusion).	Reducing (level and %) the gender gap in revenue from sales between female-led and male-led POs.
Technical Assistance (TA) for business plan development;	Increase the number of ATER teams trained in gender issues, prioritizing the participation and inclusion of women in their activities.				
TA for Investment Plan development/implementation;	Ensure ATER support identifies barriers for women to reduce investment gap between women and men.				
Subproject (SP) selection, analysis, approval, and execution;	Prioritize women, offering different scores for the selection of sub-projects to be supported. Implement strategic communication initiatives to ensure that women have greater access to the project.				
TA and coordination, and monitoring to improve access to credit;	Support women in accessing credit lines, especially those aimed at women such as PRONAF Mulher, increasing the number of women with access to credit.				
Strengthening the delivery of food safety inspection services to meet market requirements;	Ensure that information about these services serves women-led businesses.				

[101] All these indicators will be disaggregated by gender, and wherever possible, by race and group when related to Indigenous People and other traditional communities.

Awareness activities, technical assistance, and subprojects aiming to boost food security.	Implement strategic communication tools to ensure broader women's access to the project.				

Component 2: Water supply for rural communities[2]

Activity	Project Gender Actions	General Output	*General Intermediate Results*	PDO Indicator	Gender Gap Indicator
Strengthening and consolidating the multi-community management model for water supply services (*Centrais de Associações*) in Bahia State, including the preparation of business plans.	Holding training at community level on gender and water, with the goal of stimulating debate on social roles and gender inequality, women's achievements, importance of women in community organizations and daily domestic life (time control x hours dedicated to household chores); Implement strategic communication initiatives to ensure broader women's access to the project; Prioritize women and youth in training and information activities; Prioritize women and youth in contracting carried out by the Component, including requirements for construction workers.	*Centrais de Associações* created and strengthened; Water connections - new and recovered; Business plans for *Centrais* developed and implemented.	*Climate-resilient water services implemented or rehabilitated.* *Municipalities with water systems managed through the* Central *model.* *Families aware about efficient water use and better hygiene practices.*	Increase the water availability and security in rural areas.	Decrease in number of hours spent by women on caregiving tasks per day/week - 10% reduction.
Investments in climate-resilient water infrastructure: design, construction of works and supervision of new and rehabilitated water systems in targeted communities.					
Training women and youth for leaderships positions.					

Component 3: Promotion and implementation of innovative solutions

Activity	Project Gender Actions	General Output	*General Intermediate Results*	PDO Indicator	Gender Indicator
Dissemination of innovative agricultural technologies; Demonstration of agriculture practices and technologies; Dissemination of climate resilient farming practices; Implementation of agroforestry systems; Marketing promotion activities; Support certification process; Implementation of clean energy water supply systems; Implementation of climate resilient activities for aquifers perforation; Awareness activities about sustainable practices to water users.	Implement strategic communication initiatives to ensure broader women's access to the project; Prioritize women and youth in training activities.	Innovative agricultural technologies disseminated; Digital technical assistance platform; BiblioteCAR updated; POs adopting climate resilient technologies, farming practices; Certified POs for access to strategic markets; Products and brands from family agriculture promoted; Implemented tech solutions.	*Water supply systems powered by renewable energy;* *People trained on climate resilience practices;* *POs with access to new markets*	Increase the adoption of improved varieties, breed or tress and management practices that are climate-environmentally friendly by POs and farmers supported by the project.	People trained on climate resilience practices - *Desegregated by gender.* POs with access to new markets - *Desegregated by gender.*