

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BRAZIL

**DEVELOPMENT PROGRAM FOR THE SOUTHWEST REGION OF
THE STATE OF TOCANTINS**

(BR-L1152)

LOAN PROPOSAL

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ELECTRONIC LINKS	
Required	
1.	Environmental and Social Management Report (ESMR) http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2240829
2.	Complete Procurement Plan http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2201729
3.	Annual Work Plan http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=35017861
4.	Evaluation and Monitoring http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=35066008
Optional	
1.	Economic and financial feasibility http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2089208
2.	Institutional and financial capacity analysis http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=1859199 http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=35038504
3.	Operating Regulations (draft) http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2240821
4.	Studies http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2241720

ABBREVIATIONS

BEP	Basic Environmental Plan
DERTINS	Departamento de Estradas de Rodagem do Estado do Tocantins [State of Tocantins Highway Administration]
EIA	Environmental impact assessment
ERR	Economic rate of return
ESMR	Environmental and Social Management Report
GDP	Gross domestic product
IBGE	Instituto Brasileiro de Geografia e Estatística [Brazilian Institute of Geography and Statistics]
ICAS	Institutional Capacity Assessment System
ITERTINS	Instituto de Terras do Estado do Tocantins [State of Tocantins Land Institute]
IRR	Internal rate of return
LIBOR	London Interbank Offered Rate
NATURANTINS	Instituto Natureza do Tocantins [Tocantins Nature Institute]
PMU	Program Management Unit
PRODOESTE	Development Program for the Southwest Region of Tocantins
RURALTINS	Instituto de Desenvolvimento Rural do Estado do Tocantins [State of Tocantins Rural Development Institute]
SANEATINS	Companhia de Saneamento do Tocantins [Tocantins Sanitation Company]
SEAGRO	Department of Agriculture, Livestock and Supply
SEFAZ	Department of Finance
SEINF	Department of Infrastructure
SEPLAN	Department of Planning
SIAFEM	Sistema Integrado de Administração Financeira de Estados e Municípios [Integrated State and Municipal Financial Administration System]
SIC	Department of Industry and Commerce
SRHMA	Department of Water Resources and Environment
UNITINS	University of Tocantins

PROJECT SUMMARY

BRAZIL

DEVELOPMENT PROGRAM FOR THE SOUTHWEST REGION OF THE STATE OF TOCANTINS (BR-L1152)

Financial Terms and Conditions				
Borrower: State of Tocantins			Amortization period:	25 years
Guarantor: Federative Republic of Brazil			Grace period:	5 years
Executing agency: State of Tocantins, through the Department of Water Resources and Environment (SRHMA)			Disbursement period:	5 years
Source	Amount (US\$)	%	Interest rate:	LIBOR
IDB (Ordinary Capital):	99,000,000	60	Inspection and supervision fee:	*
Counterpart:	66,000,000	40	Credit fee:	*
Total:	165,000,000	100	Currency:	U.S. dollars from the Single Currency Facility
Project at a glance				
Project objective/description: The objective of the program is to intensify economic activity and expand productive opportunities through the regulation of multiple-use water supply in the southwest region of the state of Tocantins in order to contribute to the state's sustainable development and enhance the quality of life of its people. Special contractual clauses: Conditions precedent to the first disbursement: (a) creation of the Program Coordination Committee (paragraph 4.5); (b) entry into force of the decree linking the state government departments to the program, in terms agreed upon by the Bank (paragraph 4.1); (c) entry into force of the program Operating Regulations (paragraph 4.4); (d) selection and appointment of the basic Program Management Unit team under terms set out in the Operating Regulations (paragraph 4.2); and (e) selection of the program management firm (paragraph 4.3). Special execution conditions: Signature and entry into force of the agreements/contracts with NATURATINS, RURALTINS, ITERTINS, SANEATINS, and the municípios participating in the program, in terms agreed with the Bank, will be a condition precedent to disbursement of funds for the specific program activities in which they participate. The agreement with the Tocantins Sanitation Department (SANEATINS) must reflect, among other things, basic accords on program water and sanitation service rates (paragraph 4.6); (b) the signature of contracts for works related to the program's production-oriented water infrastructure will be subject to the hiring of the management firm (paragraph 4.3); (c) the signature and entry into force of the agreement between the executing agency and the State of Tocantins Highway Administration (DERTINS), in terms agreed upon with the Bank, will be a condition precedent to the start of program procurement related to roads and local roads (paragraph 4.6); (d) signature and entry into force of the contract between the executing agency and each of the firms supervising program works will be a condition precedent to initiation of the respective works (paragraph 4.6); (e) prior to the disbursement of resources for the production-related water infrastructure, the SRHMA will present to the Bank an adhesion or commitment agreement with the owners of the properties directly benefited by the irrigation district, who represent at least 40% of the project area and 50% of the beneficiaries, in which they declare their interest in participating in the program in terms agreed upon by the executing agency and the Bank (paragraph 4.9); and (f) the borrower will have to comply with the social and environmental requirements established in detail in the Environmental and Social Management Report (ESMR) (paragraph 3.9). Rates. The rates for water supply and sanitation services and water for irrigation under the program will cover the operation and maintenance costs and a reasonable portion of capital costs, in a manner consistent with the Bank's policies. Should the financial sustainability of the services not be achieved for some time, the executing agency will present an action plan to the Bank to ensure that this objective is met and will put the plan into effect (paragraph 4.7). Exceptions to Bank policies: None.				

Project consistent with country strategy:	Yes [X]	No []			
Project qualifies as:	SEQ []	PTI []	Sector []	Geographic []	Headcount []

* The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provisions of the Bank's policy on lending rate methodology for Ordinary Capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. BACKGROUND AND RATIONALE

A. Background

- 1.1 The state of Tocantins (hereinafter “the state”), created in 1987, is situated at the geodetic center of Brazil and has a population of 1.3 million and an area of 278,420 km². The climate is tropical and the vegetation is predominantly that of the *cerrado* [tropical savanna], which covers 87% of the land area. The state is crossed from north to south by the Tocantins and Araguaia rivers. Along the banks of those rivers are some 3.4 million hectares of floodplains known as *varjões*, of which 2 million are natural reserves and the rest are considered usable for agriculture. The *varjões* are areas that are irrigated by flooding during the rainy season.
- 1.2 The climate exhibits a well-defined rainy season (October to April). The land is flat and fertile, with abundant water resources. However, most of the land is currently being used only part of the year, during the rainy season, for the flood-irrigated rice growing, and it remains fallow during the dry season (May to September). This situation produces sharp fluctuations in the demand for labor and services associated with agriculture.
- 1.3 Agriculture is an important activity in the state, and grew at an average annual rate of 5% between 2002 and 2007. In 2007 it accounted for 17.8% of state GDP. State exports (US\$154.9 million in 2007) are predominantly agricultural, with soybeans representing more than 80% of the total.
- 1.4 With a view to encouraging more intensive use of water and soil resources, the state, through the Department of Water Resources and the Environment (SRHMA), has drawn up an action plan for hydro-agricultural development in the state. The plan was based on detailed studies of water and soil resources, projected water demand for various uses, and ecological constraints. Those studies revealed that action in the short term was warranted in the southwest region of the state. As a result, the Development Program for the Southwest Region of Tocantins (PRODOESTE) was drawn up, together with an action plan for implementation by the state government.
- 1.5 The target region has some 300,000 ha of *varjões*, which can be irrigated during dry periods using subirrigation or seepage technology. This technique operates by storing water in canals and drainage systems, raising the water table and allowing the water to rise through capillary action to the area where the plant’s root system is located. The costs of implementing this system on farms are lower than those of other technologies, and the system also facilitates the use of farm machinery, because the canal network is less dense. Irrigation during the dry season will make it possible to eliminate seasonal fluctuations in production and employment and to speed the development of agro-industry in the region. Subirrigation has been in use since 1980 in the Rio Formoso project in the south of the state, where 27,700 ha are planted in rice, soybeans, and melons. That project demonstrated the efficiency of

the subirrigation technology in local soils, the advantage of development using smaller-scale hydraulic works, and the feasibility of using the soil more intensively, reaping 2.5 or more harvests per year of crops with greater commercial appeal.

- 1.6 The PRODOESTE project will be executed in phases. In the first phase, 42,700 ha will be brought under irrigation in the sub-basins of the Pium and Riozinho rivers, which today are used for extensive ranching and to some extent for growing rice during the rainy season (10,000 ha). Subsequent phases will involve an additional 200,000 ha in four additional sub-basins, which will make it possible to incorporate crops that involve higher returns and greater economic impact in the zone.
- 1.7 The Bank has extensive experience in promoting irrigation in Latin America, including Brazil, and the proposed program's design incorporates the lessons learned from that experience. The Nilo Coelho project, in the immediate vicinity of the Sobradinho reservoir, represented the first, pioneering step in the successful development of the Petrolina-Juazeiro cluster on the borders of the states of Pernambuco and Bahia. More recently, the Bank prepared the project for the sustainable development in the semiarid region of Sergipe (BR-L1012). Brazil itself has extensive experience in this field, and now has an estimated 3.5 million hectares under irrigation. The systems used for the most part draw water directly from rivers and lagoons, given the relative scarcity of groundwater. The irrigation methods for most of the larger projects are considered modern, using a variety of technologies depending on the demands of the crops.

B. Strategy and rationale

- 1.8 The program will support development of an initial area of 25,600 ha under the first phase of PRODOESTE, in the sub-basins of the Pium and Riozinho rivers. This will boost the intensity of land-use and lead to a more profitable mix of crops, thereby helping to stabilize demand for labor and services and promoting the development of the region. The area has a favorable geographic location and transportation infrastructure that allows quick access for local products to consumer points and ports. The second phase, which is not yet funded, would include an additional regulator reservoir and a series of reservoirs in the Riozinho riverbed to raise the water level, for irrigation of an additional 17,000 ha.
- 1.9 The Bank's strategy with Brazil (document GN-2327) covers the period 2004-2007. The proposed project is consistent with the thrust of the strategy now in preparation, and will contribute to three of its five target areas: competitiveness, infrastructure, and modernization of the State. Moreover, the program is consistent with the Water Initiative (document GN-2446) in that it will improve the coverage of sanitation services for the principal municípios in the target area, and will also strengthen the sustainable management of water resources.

II. THE PROGRAM

A. Objective and components

- 2.1 The objective of the program is to intensify economic activity and expand productive opportunities through the regulation of multiple-use water supply in the southwest region of the state of Tocantins in ways that will contribute to the state's sustainable development and enhance the quality of life of its people. To this end, a series of activities will be carried out, designed to implement a model for the sustainable use of water resources in the Pium and Riozinho river watersheds, with a focus on irrigation and drainage infrastructure development to supply 25,600 ha, together with complementary infrastructure and services to ensure the sustainability of the proposed activities. The program has the following three components ([see support studies](#)).

1. Productive and complementary infrastructure (US\$127.6 million)

- 2.2 This includes the construction of water storage, piping, and distribution works to meet dry-season irrigation needs on approximately 26,000 ha in the Pium and Riozinho river watersheds.
- a. A dam (P8), 30 m high with a useful volume of approximately 180 million m³, located in the upper basin of the Pium River, to regulate the river's mean annual flow.
 - b. Three dams to raise water levels in the Pium river bed, staged along the course of the river downstream from dam P8, and one on the Riozinho River, downstream from its confluence with the Pium. These are small dams that allow the passage of fish and sediments and will not flood shoreline vegetation. Their function is to raise the level of the river and reduce the pumping head needed to lift water to riparian fields.
 - c. Complementary works to improve approximately 65 km of the local road network in the producing areas to facilitate the transportation of farm products and inputs, and improved water and sanitation services in the municípios participating in the program.
- 2.3 The works on the beneficiary properties will be built at the expense of the farmers and will consist of: (i) pumping systems to lift water from the regulated sections of the river to the field canals; and (ii) distribution and drainage channels.
- 2.4 This component will finance activities to control and mitigate social and environmental impacts directly related to the water infrastructure works, in particular control and prevention actions during the works, programs in preparation for the filling of the P8 Dam, and compensation and safeguard programs for people

in the vicinity of the dam. This subcomponent also includes the Integrated Environmental Management Program, designed to ensure coordination and timely execution of environmental and social programs in line with the established timetables.

2. Regional development promotion and support (US\$2.7 million)

- 2.5 Activities will be financed to ensure that the region's inhabitants and beneficiary producers have the knowledge, information, and technologies needed to take advantage of the new productive and commercial opportunities. The intent is to diversify the economy by attracting investors and negotiating intersectoral arrangements among the various economic actors, strengthening local private businesses, and developing new markets. The following activities are included:
- a. Promotion and investment and investor attraction missions and seminars. Strategic information will be organized and distributed to beneficiaries on the activities promoted by the program, and the state government's web portal will be improved with information for investors.
 - b. Structuring of business plans and investments to organize and reinforce supply chains: This includes the preparation of at least five business plans for the region's main production chains.
 - c. Training for roughly 70% of beneficiary specialists and producers in technical matters relevant to the program, and in activities relating to participatory mobilization and the creation of associations.
 - d. Applied research and study grants: This includes setting up an applied research program on specific local issues, including the genetic improvement of rice and soybeans, the behavior and management of the water table, and certification of seeds for the principal crops, as well as study grants for local specialists.¹

3. Environmental management and institutional strengthening (US\$6.05 million)

- 2.6 Environmental management of water resources. The following studies and activities will be financed: (i) development and implementation of the Water Resource Master Plan, including preparation of the plan and support for institutional arrangements for water management (e.g. watershed committee), as well as procedures for approval and implementation of the plan; (ii) implementation of the water monitoring program, which calls for setting up a network of automated flood

¹ The final version of the Operating Regulations will include selection criteria to be used for all activities under this component.

gauging, fluviographic, and climatological stations, and a data collection network for analyzing the physical and chemical quality of the water, including its first three years of operation, after which the state will take over responsibility for running it; (iii) monitoring of environmental resources in program watersheds at greatest risk of being impacted. This includes a program for monitoring the water table, *ipucas* [fragments of natural forest], fish life, and limnological data. It also includes funds for social communication and environmental education targeted at communities within the program's area of influence.

- 2.7 Institutional strengthening. This covers: (i) training in project management, administration, and evaluation, water resource management, environmental planning and management, drought management, geo-processing and information systems, IDB standards and policies, for officials of state entities participating in the program; in the case of the municípios in the project area, training will cover urban planning, taxation and land registry management, accounting and finance, and project preparation, among other topics; (ii) strengthening of the operational capacities of participating entities; and (iii) support for the organization, establishment and startup of the Irrigation District, which will be set up by the farmers who benefit from the works and to which the executing agency will delegate responsibility for administration, operation, and maintenance of the common water infrastructure constructed by the program. The institutions to be strengthened are: the SRHMA, the Tocantins Nature Institute (NATURATINS), the Rural Development Institute (RURALTINS), the Land Institute (ITERTINS), and the municípios of Pium, Lagoa da Confusão, and Cristalândia.

B. Cost and financing

- 2.8 The program is designed as a specific investment loan with a disbursement period of five years. The cost of the program is US\$165 million, of which US\$99 million will be financed from the Bank's Ordinary Capital and the remaining US\$66 million from the counterpart contribution provided by the borrower. Financing costs and contingencies will be assumed by the State of Tocantins. Table II.1 provides a breakdown of the cost by component and category of expenditure. The item for studies and detailed designs covers the costs of final project designs for the works.
- 2.9 The estimated disbursement schedule is indicated in Table II.2. A revolving fund will be established for up to 5% of the loan amount to provide advance funding for activities financed from the loan.

Table II.1 – Cost by component and category of expenditure (US\$000)

		IDB	Local	Total	(%)
1	Program administration	10,437	5,067	15,504	9.4
	1.1 PRODOESTE management unit	0	2,860	2,860	1.7
	1.2 Program management	6,405	337	6,742	4.1
	1.3 Supervision and inspection	2,282	120	2,402	1.5
	1.4 Studies and final designs	1,750	1,750	3,500	2.1
2	Direct cost	85,426	50,890	136,316	82.6
	2.1 Productive and complementary infrastructure	78,495	49,069	127,564	77.3
	2.2 Regional development promotion	2,565	135	2,700	1.6
	2.3 Environmental management and institutional strengthening	4,366	1,686	6,052	3.7
3	Monitoring, evaluation, and audit	837	0	837	0.5
	3.1 Monitoring and evaluation	450	0	450	0.3
	3.2 Audit	387	0	387	0.2
4	Contingencies	2,300	5,300	7,600	4.6
5	Financing costs	0	4,743	4,743	2.9
Total		99,000	66,000	165,000	100

Table II.2 – Disbursement schedule (US\$000)

Source	Year 1	Year 2	Year 3	Year 4	Year 5
IBD/OC	9,900	24,750	29,700	24,750	9,900
Local	6,600	16,500	19,800	16,500	6,600
Total	16,500	41,250	49,500	41,250	16,500

C. Key indicators in the Results Framework

- 2.10 The key indicators in the Results Framework are specified in Annex II. Program impacts will be measured as follows: (i) using information collected regularly by the Brazilian Institute of Geography and Statistics (IBGE) for the base year and the first two years of operation of the irrigation district, to compare the effect on economic activity indicators in the beneficiary area and the municípios directly impacted, versus other municípios in the state; and (ii) on the basis of a survey of farmers in the beneficiary watersheds, at the beginning of the program and after two years of operation of the irrigation district, to compare net farm income for beneficiary and non-beneficiary producers, and other indicators of interest. The cost of this work is included in the program budget.

III. FEASIBILITY AND RISKS

A. Economic feasibility

- 3.1 The program's economic feasibility was examined from three viewpoints: (i) farmers; (ii) the irrigation district operator; and (iii) the economy as a whole. The

economic analysis was also used to determine that the P8 dam is the best option for regulation/elevation among those examined, and to verify the economic feasibility of the two diversion canals that would irrigate lands not contiguous to the Pium River (see [Report](#)).

- 3.2 Farming models: To estimate return from the viewpoint of farmers, three farming models were analyzed, 100 ha in size, based on soil uses observed in the Formoso district. In the first model, farmers would grow rice by flooding during the rainy season, and soybeans using subirrigation in the dry season. The other models involved planting in the period between the two harvests to achieve 2.5 and 3 harvests per year, respectively. It was estimated that models 1 and 3 would each take up 25% of the area, and model 2, 50%.
- 3.3 It was assumed that the farmer would be responsible for the following costs: (i) farm production, based on observed local cost and price structures; (ii) investment in field infrastructure, estimated at US\$1,250 per hectare, excluding operation and maintenance; (iii) common infrastructure constructed by the project, through repayment of the investment, estimated at US\$280 per hectare per year (rate K1) and (iv) administration, operation, and maintenance, estimated at US\$4.70 per 1,000 m³ (rate K2). The results show acceptable private returns for all three models, with net present value (discounted at 12%) between US\$673 and US\$1,197 per hectare. Those results are robust to changes in costs and yields.
- 3.4 Operating entity: Studies found that the irrigation district's revenues would be sufficient to cover operating and maintenance costs. This calculation took into account the costs of administration, operation, maintenance, replacement of 90% of the cost of minor structures and pumping equipment, environmental management for which the district is responsible, and financing costs due to cash-flow shortfalls in the early years of the project. Revenue estimates were based on rate K2.
- 3.5 The economy as a whole: This analysis was done both at market prices and at economic efficiency prices. It considered the cost of studies, investment, operation and maintenance of the water infrastructure and complementary infrastructure with associated environmental mitigation costs, and net incremental farm income, recognizing that areas will be incorporated into the project over a period of 12 years and that the farms will reach their expected yields only in the fourth year after they are incorporated. With these conservative assumptions, the internal rate of return (IRR) at market prices is 18.6%, and at efficiency prices it rises to 21.8%. A sensitivity analysis to higher costs and lower incomes was performed, which indicates that the IRR for the project exceeds 12% for reductions of up to 20% in the value of agricultural output and for increases of up to 20% in total costs.

B. Financial feasibility

- 3.6 The flow of state revenues and expenditures was reviewed beginning in 2003 (see [Institutional and Financial Consultant's Report](#)). In 2008, the state earned current revenues of R\$4 billion, up by 19.9% over 2007 and by 11.4% annually on average since 2003. This outcome was due in large part to the favorable trend in transfers from the federal government, which grew on average by 13.4% annually and represented 69% of state revenues. The ICMS accounted for 84% of tax revenues. Tax receipts represented 31% of current revenues and rose by an average of 6.7% a year. Current expenditures represented 73% of current revenues and grew at an average annual rate of 12.7%.
- 3.7 The analysis of indicators of sound fiscal management for the period 2003-2009 (first quarter) covering payroll costs, consolidated debt, guarantees issued, and external and internal credit operations shows that the State has met legal requirements in all years. Moreover, the State complied with the rules related to minimum spending on education and health established in various national regulations.
- 3.8 To assess the state's capacity to meet its financial commitments under the program, revenues and expenditures were projected for 20 years, on the basis of historical data, the 2009 budget, debt service projections for existing and project-related debt, and conservative assumptions about economic growth. Two sensitivity analyses were also conducted to examine the impact of lower-than-expected revenues and higher-than-expected current expenditures. Base case projections show that the State could make its counterpart contribution to the project and service the debt to the Bank, and that it would also meet the sound fiscal management indicators of the Fiscal Responsibility Law. The sensitivity analysis shows that the state government will have to take measures, which are considered feasible, to control its expenditures, especially on personnel, outsourced services, and other current expenses, and will also have to adjust investments to its financial capacity in order to meet the sound fiscal management indicators set by law.

C. Environmental and social risks and mitigation measures

- 3.9 The program was classified as a category "A" operation under the Bank's Environment and Safeguards Compliance Policy (OP-703). During program preparation the following studies and activities were conducted: (i) Strategic Environmental Assessment, which analyzed the impacts of establishing PRODOESTE over a medium/long-term horizon, based on existing knowledge of regional circumstances; (ii) Environmental Impact Assessment (EIA) of phase 1 of PRODOESTE, submitted to the state environment authority, NATURATINS, in December 2008;² (iii) a specific characterization and dynamics study of the

² As part of the EIA review, three public hearings were held in June 2009 in the municípios of Cristalândia, Pium, and Lagoa da Confusão. The preliminary permit was issued on 2 October 2009.

floodplain areas (*varjões*) in the program's area of influence to determine its classification under national protection legislation; (iv) Basic Environmental Plan (BEP), integrating all environmental, social, health, and occupational safety prevention, mitigation and monitoring programs and measures, their costs, timetable, and responsible units, including the integrated environmental and social management system; and (v) a series of public consultations and meetings with stakeholders, in July 2008 and June 2009, in the city of Palmas and in two towns within the program's area of influence. The [Environmental and Social Management Report](#) (ESMR) summarizes the results and recommendations.

- 3.10 On the basis of the studies and assessments performed, the program's most important impacts are expected to be positive. Investments in the modernization and restoration of degraded areas and the introduction and dissemination of productive technologies better suited to local soil and climate conditions will help reverse and prevent the degradation of natural resources. The program will make it feasible to use a significant area for farming that is now underused or used unsustainably, and this will translate into employment opportunities and a higher quality of life in the region.
- 3.11 Although the impacts will be essentially positive, the program will have some potentially adverse impacts at various stages, particularly during construction of the works and filling of the reservoirs for regulating and raising river water levels. Alternatives for the best placement of the reservoirs were analyzed, taking into account environmental, social, technical, and economic factors. The original irrigated surface area of the project was adjusted to avoid direct interference with the Araguaia-Cantão environmental protection area and the Araguaia National Park buffer areas.
- 3.12 To mitigate the direct environmental and socioeconomic impacts, the BEP combines a set of 16 programs divided into three groups: (i) three programs related to works construction, the costs of which have been incorporated into the budgets for the works and will be contractual obligations of their contractors; (ii) eight programs for mitigation and management of impacts under state responsibility, the cost of which is included in Component 1, under the responsibility of the executing agency, in coordination with the pertinent institutions; and (iii) five programs for monitoring and management of environmental and water resources to ensure long-term sustainability, the cost of which is included in Component 3, and will be the responsibility of the executing agency and the pertinent entities. The BEP includes the program's Integrated Environmental Management System, which specifies the resources and tools needed to ensure coordination and backing for impact prevention, control, mitigation, and monitoring and compliance with applicable legislation. The management system includes supervision and inspection activities and mechanisms related to environmental obligations and specifications for the works. The BEP, including supplementary measures required in the preliminary permit, will be a basic document for processing the works startup permit.

- 3.13 The program calls for institutional strengthening of NATURATINS to enhance its capacity to carry out the program's environmental management and control aspects. The executing agency will hire an environmental coordinator responsible for the subcomponent for environmental management of water resources, mitigation programs, monitoring of the permit process, and coordination with NATURATINS, which will be part of the program coordination committee to ensure more strategic monitoring of execution.

D. Fiduciary risks

- 3.14 The Institutional Capacity Assessment System was used to analyze the state agencies that will be involved in the program, and they were found to have a satisfactory level of development with a low risk level. Some capacity building activities were identified (see [Report](#)), and their cost is included as part of the environmental management and institutional strengthening component. Program accounting and financial administration will be handled by the financial coordination office of the SRHMA, with the backing of two professional accountants and the necessary computer equipment. The accounting system used by the State of Tocantins is SIAFEM, which allows accounting transactions to be processed online. All payments under the program will be made by the State Department of Finance, which will administer two special bank accounts, opened in a private or state bank, at the request of the executing agency, one for the loan funds and the other for the local counterpart.

E. Other risks and special considerations

- 3.15 During the analysis mission a program risk analysis was performed (Expert Choice), and the risk was found to be moderate. The results confirmed those areas that need strengthening, as previously identified by the project team and the executing agency. The risks identified can be mitigated through the signature of commitment agreements between the State Department of Water Resources and Environment and the other departments/agencies/municipalities involved in the program, the preparation of the program Operating Regulations, specifying the powers and functions of the Program Management Unit (PMU) and other participating institutions, and the contracting of technical and operational support from a management firm.

IV. IMPLEMENTATION AND MANAGEMENT PLAN

A. Execution plan

- 4.1 Borrower, executing agency and guarantor: The borrower will be the State of Tocantins, and the Federative Republic of Brazil will guarantee the financial obligations of the loan. The executing agency will be the State of Tocantins through

- its Department of Water Resources and Environment (SRHMA). Other state entities will collaborate with the SRHMA: Department of Agriculture, Livestock, and Supply (SEAGRO), Department of Infrastructure (SEINF), Department of Planning (SEPLAN), Department of Industry and Commerce (SIC), NATURATINS, RURALTINS, ITERTINS, and SANEATINS. **A condition precedent to the first disbursement of loan proceeds will be entry into force of the decree linking the state government departments to the program, in terms agreed upon with the Bank.**
- 4.2 Execution and administration: Program coordination, general administration, supervision, and evaluation will be the responsibility of the Program Management Unit (PMU), set up by decree of the State Governor within the SRHMA for this purpose. The basic PMU team consists of a superintendent reporting to the SRHMA Secretary, who will be responsible for the program and serve as interlocutor with the Bank, and two directors who will report to the superintendent. Each director will oversee two coordinators who will be responsible respectively for the production-oriented water infrastructure and supplementary infrastructure subcomponents of the regional development component and for the Institutional strengthening-environmental management of water resources component. The PMU will have a legal advisor and two additional support staff to cover technical and administrative aspects. **Selection and appointment of the basic PMU team under terms set out in the program's Operating Regulations will be a special condition precedent to the first disbursement.**
- 4.3 The PMU will hire a management firm that will provide support in the areas of supervision, program monitoring, fiduciary aspects, and preparation of technical specifications and terms of reference for commissioning engineering designs and projects. **Selection of the management firm will be a special condition precedent to the first disbursement of the loan.** In turn, the signature of this contract will be a condition precedent to the signature of the contracts for the production-oriented water infrastructure.
- 4.4 Program execution and administration will be governed by the program's Operating Regulations, a preliminary version of which is included in the document links; it details procedures for executing the program and the technical and eligibility requirements for the activities to be performed, as well as the basic functions of the SRHMA and other state entities. **Entry into force of the program's Operating Regulations will be a special condition precedent to the first disbursement.**
- 4.5 Coordination Committee: To monitor the program's strategic aspects and resolve institutional conflicts that cannot be settled at the operating level, a Coordination Committee will be established by order of the Governor. This committee will be chaired by the Secretary of Water Resources and Environment, and the Superintendent of the PMU will serve as its executive secretary. The committee will also comprise the State Attorney General, the State Comptroller General, and

the State Secretaries of Finance, Planning, Infrastructure, Industry and Commerce, Communications, and Agriculture, Livestock, and Supply. The heads of NATURATINS, RURALTINS, ITERNTINS and the Highway Department (DERTINS) will also be involved, and other stakeholders may be invited depending on the issues to be considered. **Creation of the Program Coordination Committee will be a special condition precedent to the first disbursement.**

- 4.6 State agencies and municípios: The PMU will be supported by decentralized agencies and other entities of the state government in executing activities under their jurisdiction or area of responsibility. Those entities will sign agreements with the PMU to provide technical support in contracting and supervising the following activities: (i) the Tocantins Sanitation Company (SANEATINS) for water and sanitation works in participating municípios;³ (ii) RURALTINS and SEAGRO in the preparation of business plans, technical assistance, and the farmers' organization covered in component 2; (iii) the SIC for promotional activities to attract domestic and international investors and the development of business plans and training for local entrepreneurs covered in component 2; (iv) ITERNTINS in the acquisition of land for constructing the works; and (v) DERTINS for the analysis and review of road improvement projects. Agreements with the participating municípios will establish general guidelines for state participation in the activities called for in each of those municípios and a commitment by the municípios to carry out the activities assigned to them under the program. Lastly, NATURATINS, as the state environmental authority, will oversee all environmental aspects. The signature and entry into force of the agreements/contracts with NATURATINS, RURALTINS, ITERNTINS, and the municípios participating in the program, in terms agreed upon with the Bank, will be a condition precedent to disbursement of resources for the specific program activities in which they participate. The signature and entry into force of the agreement with DERTINS, in terms agreed upon with the Bank, will be a condition precedent to the start of bidding processes for roads and local roads considered in the program. The agreement with SANEATINS will reflect, among other things, basic principles regarding the rates mentioned below. Lastly, the signature and entry into force of the contract between the executing agency and each of the firms supervising program works will be a condition precedent to initiation of the respective works.
- 4.7 Rates. To ensure the financial sustainability of the water and sanitation services and irrigation district considered under the program, rates for these services will cover the operation and maintenance costs and a reasonable portion of capital costs, in a manner consistent with the Bank's policies. Should the financial sustainability of the services not be achieved for some time, the executing agency will present an

³ In March 2010, the State of Tocantins created a decentralized agency for sanitation services. The role that this agency could play in the project will be analyzed after the state and the municípios provide information to the Bank about the plans in this regard.

action plan to the Bank to ensure that this objective is met and will put the plan into effect.

- 4.8 Operation and maintenance of the production-oriented infrastructure works. The financial and operational sustainability of the district was verified by analyzing the expected flow of revenues and expenditures (see paragraph 3.4). The proposed activities for organizing producers and establishing the district will be carried out in parallel with construction of the works and will be financed from resources under Component 3. Farmers will have to become members of the district in order to receive water from it. During the first two years of the district's operation, the SRHMA will be responsible for it and will gradually transfer it to the district as it acquires the capacity. The district will be structured as follows: (i) an assembly of irrigators, as the senior authority, responsible for approving the crop plan and the district budget; (ii) a board of directors, a standing deliberative body comprised of a group of irrigators elected by all beneficiaries, with supervisory and policy-setting functions; (iii) an executive manager, selected by the board of directors and hired by the irrigation district, who will have overall responsibility for managing the technical and administrative divisions running the works; and (iv) a financial control board that will oversee the accounts and budgetary execution. The SRHMA will retain a seat on the board of directors even after the operation is transferred to the district and will have veto power.
- 4.9 The main risk during the operation of the project is that not enough farmers will sign up as members of the irrigation district, meaning that the works would be underutilized or that rates would not cover operating and maintenance costs. To mitigate this risk, prior to disbursement of the resources for the production-oriented water infrastructure, the SRHMA will present to the Bank an adhesion or commitment agreement with the owners of the properties directly benefited by the district, who represent at least 40% of the project area and 50% of beneficiaries, in which they declare their interest in participating in the program, in terms agreed upon by the executing agency and the Bank.
- 4.10 External audit of the program. The borrower, through the PMU, will present annual financial statements for the program to the Bank, within 120 days after the close of each fiscal year, audited by a firm of independent auditors and pursuant to terms of reference previously agreed with the Bank and the Secretariat of the Public Service.

B. Procurement

- 4.11 Works, goods, and related services to be financed by the program will be procured by the PMU in accordance with the Policies for the Procurement of Works and Goods Financed by the Bank (document GN-2349-7), and consulting services will be selected and contracted in accordance with the Policies for the Selection and Contracting of Consultants Financed by the Bank (document GN-2350-7). Payments will be made by SEFAZ, upon instruction from the PMU. UNITINS will

be contracted directly to carry out the research called for under the regional development promotion component, given its specific knowledge of the region, the fact that it has highly qualified staff to handle these tasks, and its experience in similar activities.

- 4.12 Tendering for works, goods, and services under the program will be done by the Permanent Tender Committees of SEINF, SEFAZ, and DERTINS, which will receive institutional strengthening and training in Bank policies and rules on bidding processes. Table IV.1 summarizes the procurement methods to be used in the program.

Table IV.1 - Program Procurement Thresholds (US\$)

	ICB	NCB	Shopping
Works	> 3,000,000.00	< 3,000,000.00	< US 100,000.00
Goods	> 250,000.00	< 250,000.00	< 50,000.00
Consulting services	> 200,000	< 200,000	N/A

- 4.13 During program preparation the capacity of the executing agency to administer procurement was analyzed, and it was determined that, during the first year of program execution, all procurement processes would be reviewed by the Bank ex ante, regardless of contract value, except for purchases using the “electronic procurement” (*pregão eletrônico*) method. The executing agency’s performance will be evaluated subsequently to decide whether to move to ex post review of procurement. A procurement plan was prepared for the first 18 months of the program, and it is attached as an integral part of this document. The state decided not to ask for retroactive recognition of expenditures incurred during program preparation.

C. Monitoring and evaluation arrangements

- 4.14 The monitoring and evaluation plan includes activities relating to environmental considerations (paragraph 3.12), which are described in the ESMR, and activities to monitor progress with the project and measure its impact. On the latter point, a baseline will be constructed for the Pium and Riozinho watersheds, based on a survey covering at least 200 farmers, including beneficiaries and non-beneficiaries of the irrigation project, and a follow-up survey at the end of the project. To estimate the project’s impact econometric techniques will have to be used to identify biases in the rates of adoption and yields that would arise in a simple comparison using the survey results. The budget for this work is included in the project. As part of program evaluation, the executing agency will prepare and submit the following to the Bank: (i) a midterm evaluation, 60 days after 50% of the Bank’s financing has been disbursed; and (ii) a final evaluation 90 days after 95% of the financing has been disbursed. The terms of reference for these evaluations will require a statement of no objection by the Bank.

- 4.15 During program execution, the executing agency will send to the Bank, within 30 days after the close of each calendar six-month period, a consolidated monitoring report on the progress of activities and the degree of achievement of the goals included in the Results Framework (Annex II). That report will identify any problems encountered and propose corrective measures. The report for the second half of each year will also include the Annual Work Plan for the coming calendar year, with a disbursement forecast and an updated procurement plan; once these are approved by the Bank, they will be posted publicly on the executing agency's website.

Development Effectiveness Matrix
Summary

Indicator	Score	Maximum Score
I. Strategic Relevance	Low	
1. IDB Strategic Development Objectives	4.3	10
Country Diversification	0.7	2
Corporate Initiatives	2.5	2.5
Harmonization and Alignment	1.1	3.5
Beneficiary Target Population	0.0	2
2. Country Strategy Development Objectives	0.0	10
Country Strategy Sector Diagnosis	0.0	6
Country Strategy Sector Objective & Indicator	0.0	4
II. Development Outcomes - Evaluability	Highly Satisfactory	
3. Evidence-based Assessment & Solution	9.0	10
4. Evaluation & Monitoring Plan	5.3	10
5. Cost-Benefit or Cost-Effectiveness	7.0	10
6. Risks & Mitigation Monitoring Matrix	7.5	10
III. IDB's Role - Additionality		
7. Additionality	7.0	10
Technical Assistance provided prior to the project	0.0	3
Improvements in management of financial, procurement, monitoring or statistics internal controls	4.0	4
Improvements in environmental, health and labor performance	3.0	3

I. Strategic Relevance: This operation is being executed in Brazil, considered a Group A country, through the "specific investment" instrument. Its objective relates to current Bank initiatives (water and sanitation, infrastructure). Country systems will be used for environmental management and procurement. The country strategy that would cover the project implementation period has not yet been approved.

II. Evaluability: The project is clear in terms of its objectives, but the results indicators for components II and III need to be improved (results matrix). In the results matrix, a component of the operation is divided in two (III = III and IV). Empirical evidence is provided regarding the scope of the problem and partial empirical evidence on the factors that contribute to it. There are no specific indicators for the variable to be measured. There are baselines and targets for each of the indicators. The project has identified monitoring mechanisms. There is a specific plan for carrying out an environmental impact assessment but no specific plan for an impact evaluation. The intervention has a clear estimate of ERR for its main components. The project is classified as an A operation. The main environmental and social risks have been identified as have the mitigation measures, but no indicators, baselines, or targets have been established that would make it possible to follow up on implementation of those mitigation measures.

III. Additionality: The program includes training in (i) procurement and financial management for entities involved in the project; and (ii) planning and other areas important for development of the sector and the environmental management of the investments.

PROGRAM RESULTS FRAMEWORK

Objective: To contribute to the sustainable development of the state of Tocantins and raise the living standards of its population by intensifying economic activity and expanding productive opportunities in the southwest region.

KEY OUTCOMES	BASELINE	TARGET	COMMENTS
By the end of the program, net average annual farm incomes per irrigated hectare benefiting from the project are higher	R\$103	R\$1,970 (second year of operation)	Baseline survey and survey in year 2 of the district's operation
By the end of the program, new direct jobs have been generated on lands irrigated by the project	Zero (0)	11,540 jobs (when fully developed, year 12)	Survey in year 2 of the district's operation and projection for full development
By the end of the program, new indirect jobs have been generated on lands irrigated by the project	Zero (0)	23,000 jobs (when fully developed)	Estimate based on calculation of direct jobs and average multiplier for irrigated zones in Brazil.

Program results	Indicators	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
Introduce a sustainable hydro-agricultural model in the Pium and Riozinho valleys of southwest Tocantins.	Number of hectares with irrigation infrastructure in operation in the project zone.	3,433			4,500	6,200	7,100	25,600 has (complete development expected by year 12)	Means of verification: annual Irrigation District report.
	Percentage of the district's operating costs covered by user fees.	N/A	Agreement signed with users establishing the fees.				100%	100%	Percentage of district operating costs covered by user fees.

Program results	Indicators	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
	Percentage of farms with environmental permits in the project zone (Pium River valley and irrigated area of the Riozinho basin).	2%-3% (estimated average for the state of Tocantins)				50%	100%	100%	Percentage of farms with environmental permits in the project zone (Pium River valley and irrigated area of the Riozinho basin), according to reports from NATURATINS and the PMU.
Increase in the number of farms in the project zone (Pium River valley and irrigated area of the Riozinho basin) with environmental permits.	% farms in the program area with permits in accordance with legal standards (forestry code)	2%-3% (1)	Specific % in the project zone to be measured in year 1 using the registry of irrigators (2)			50%	100% of properties with permits		(1) estimated average for the state of Tocantins) (2) Irrigation District under development Frequency of measurement initial, third year, and at end of program Means of verification Monitoring reports based on NATURATINS reports Responsible agency: PMU

Component I: Productive and Complementary Infrastructure:								
Output	Indicators	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5 Target	Observations
Production-oriented water infrastructure: public water supply infrastructure implemented and operating.	Reservoir constructed with capacity of 179 million m ³	Zero	Detailed final design completed and environmental permit issued	30% of funds disbursed	100% of funds applied and reservoir built.	Infrastructure turned over to users for administration through an Irrigation District.	P8 reservoir of 179 million m ³ built and operating, supplying water to 26,500 ha with 95% reliability	36 months into the program, the state government hands over to producers the infrastructure constituted by the reservoir and the three reservoirs to raise water levels. Frequency of measurement weekly Means of verification management reports for the IDGP program Responsible agency PMU
	Dams to raise water levels constructed	Zero	Detailed project design completed		3 dams to raise water levels built on the Pium River and 1 on the Riozinho River			Frequency of measurement year 3 and end of program Means of verification PMU reports. Responsible agency: PMU
	Km of main distribution channels built	Zero	Detailed project design completed		16.7 km of canals built		12 km of canals built to extend the irrigated zone to 26,500 ha (including areas not adjacent to the Pium River).	

Output	Indicators	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5 Target	Observations
Installation of sanitary sewage systems in the municípios of Pium and Lagoa da Confusão.	% coverage by sanitary sewage systems	Pium: 1.1% Lagoa da Confusão: 1%		Sanitation works contracted	Pium: 30% LC: 30%	Pium: 60% Lagoa da Confusão: 60%	Pium: 90% Lagoa da Confusão: 90%	PMU progress report on the works, based on the SANEATINS report. Midterm and final evaluation reports
Coverage of water supply systems in the municípios of Pium and Lagoa da Confusão	% of water supply systems	Pium: 38% Lagoa da Confusão: 30%		Works fully contracted			Pium: 90% Lagoa da Confusão: 90%	PMU progress report on the works, based on the SANEATINS report
Extension of the improved road network in the project zone.	Km of roads improved			Works fully contracted			63 km of local roads improved	PMU progress report on the works, based on the DERTINS report
Basic Environmental Plan: 4 programs for control of works and 8 programs for environmental impact mitigation and management	Progress with control programs and mitigation works	Zero	Integrated environmental management program (PGAI) implemented Installation license issued Environmental supervision initiated	Environmental supervision performed, corrective measures taken	Environmental supervision performed, corrective measures taken	PAC and 3 works mitigation programs completed (1) 3 environmental reclamation programs completed (3) 2 social safeguard mitigation programs completed	Degraded areas restored (2) Environmental compensation concluded (1) Operating license issued	Environmental supervision reports on works; PMU monitoring reports; NATURATINS reports; monthly reports from the integrated environmental management program (PGAI) for the undertaking (1) pursuant to the installation license (2) as required by the environmental audit and NATURATINS (3) prior to creation of the reservoir

Outcome	Indicator	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5 target	Observations
Public water infrastructure installed and operating with a minimum environmental and social impact, allowing expansion and intensification of soybean, rice, and fruit crops.	Average number of harvests per hectare/year in the project zone (area planted/physical area benefited by the project)	0.12	0.12	0.12	0.12	0.4	0.67	The availability of irrigation water allows crops to be intensified gradually on the 25,600 potential hectares, to achieve an average of 2.5 harvests per year in different combinations of crops.
Expansion of basic public services (water and sewage) in the municipal capitals and internal roads in productive area to improve living standards in the project area	People in the three municípios of the project area have access to basic public services.	Current population is 14,185, of which around 97% have access to water services and only 1% to sanitation services.					Basic services with capacity to serve 20,000 inhabitants (100% in 2023)	The expansion of basic water and sanitation services reaches the entire projected population in the three project municípios: 20,000 inhabitants in 2023.

Component II: Regional Development Promotion and Support

Output	Indicator	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
Research program instituted, with specific results for the region: genetic improvement of rice and soybeans and sunflowers, behavior of the water table and certification of seeds	Work plans agreed upon and in execution with UNITINS, RURALTINS, the Technology Innovation Network for Agricultural Defense (ADAPEC), and the Brazilian Agricultural Research Enterprise (EMBRAPA)	Zero	Contracts with research entities concluded, including work plans and budget.	At least 5 research programs implemented and under way		Research results disseminated	Final evaluation of the contracts	At least 5 field research programs announced and results disseminated.	The research to be conducted is specific to the Varzeas area. Frequency of measurement annual Responsible agency PMU

Output	Indicator	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
Business plans for productive chains updated and in execution, jointly with national and state entities.	Business plans and productive undertakings defined in priority chains.	Zero	Definition of at least 5 priority productive chains and signature of contracts with the Federation of Industries of the state of Tocantins (FIEITO), the Agriculture Federation of the state of Tocantins (FAEC), the National Industrial Training Service (SENAI), the National Rural Training Service (SENAR), and EMBRAPA, to promote them.	Business plans for 5 productive chains formulated and in execution	Formulation and implementation of at least 3 additional productive undertakings.		Final evaluation	At least 5 business plans for productive chains and 3 productive undertakings formulated and in execution.	PMU organizes efforts to structure business plans for development of five productive chains Frequency of measurement annual Responsible agency PMU
Portal with basic information for future investors.	Consultations by investors about opportunities in the state	Existing portal in FIEITO	Initial evaluation of existing IT infrastructure and frequency of consultations.	Portal improved		Increase of at least 50% in initial consultations.	Final evaluation		Frequency of measurement: semiannual Responsible agency PMU

Output	Indicator	Baseline (2009)	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
A series of dissemination measures taken in the region.	Promotion missions and publications	Zero	Domestic and international promotion plan for the region defined.	At least two international promotion missions and three national missions conducted	100% of dissemination activities completed.		Final evaluation of the subcomponent.	100% of dissemination activities in the region completed as of year 2, with at least 3 national missions and 2 international missions before year 3	The state government promotes dissemination missions for the programs in the region to attract new investments. Frequency of measurement: semiannual. Means of verification: PMU reports Responsible agency: PMU
Training for specialists and producers in using irrigation and improving production techniques.	% of specialists and farmers trained.(1) 26 scholarships for specialists and 5 doctoral fellowships				70% of local producers and specialists trained 26 scholarships for specialists, 5 doctoral fellowships granted.		Final evaluation of the subcomponent.		Means of verification PMU reports (1) based on RURALTINS reporting (2) based on UNITINS reporting. Frequency of measurement: semiannual Responsible agency: PMU
Basic services of research, training, information, and promotion supplied for the productive diversification of the project area	Business plans implemented in productive chains and new productive undertakings	Zero		5 business plans formulated and in execution in such chains as cereals (rice and soybeans), meat and dairy, fruit growing.	At least three new productive undertakings in priority chains formulated and in implementation.				

Component III: Environmental Management and Institutional Strengthening								
Output	Current situation (2009)	Indicators	Year 1	Year 2	Year 3	Year 4	Year 5- target	Observations
Water Resource Master Plan for the Pium and Riozinho basins completed, approved, and implemented	Zero	Progress: - Watershed plan - Watershed committee	Provisional committee installed	- Plan proposed for discussion with users and entities - Committee installed in accordance with existing regulations		- Water resource master plan approved by CERH according to existing legislation	-Plan in effect as per PERH; Watershed Committee or equivalent for the Pium/Riozinho basins created and installed	(1) State decree 3006/2007 (2) State water policy: law 1307/2002. Frequency of measurement: semiannual. Means of verification: RDGP Responsible agency: PMU
Environmental communication and education program.	Zero	Progress of activities: Info Center. Environmental communication and education workshops Media events (radio, newsletters)	2 action plans completed and approved Ombudsperson and information center installed. Public workshops in project area and media events (1)	Public workshops in project area and media events held (1)	Public workshops in project area and media events held (1)		Communication and education programs implemented as per action plans.	(1) during works and 3 months afterwards, as per the Basic Environmental Plan (BEP)

Development and implementation of 4 water monitoring networks: pluviometric; fluviographic/water quality; climatological; groundwater	Zero	Network installed. Monitoring campaigns	4 networks established	Monitoring campaigns conducted for 4 networks (1)	Monitoring campaigns conducted for 4 networks	Monitoring campaigns conducted for 4 networks	Monitoring campaigns conducted for 4 networks	(1) parameters and frequency established in the detailed project Frequency of measurement: semiannual. Means of verification: monitoring reports, follow-up report, midterm, and final evaluation reports
Development and implementation of 3 programs for monitoring impacts on natural resources: (i) <i>ipucas</i> [fragments of natural forest]; (ii) limnology and fish life; (iii) behavior of the water table	Zero	Progress. Monitoring campaign reports	3 programs instituted to begin monitoring	3 reports on campaign outcomes for the first year Monitoring of the 3 programs	3 reports on campaign outcomes for year 2 Monitoring of the 3 programs	3 reports on campaign outcomes for year 3 Monitoring of the 3 programs	3 reports on campaign outcomes for year 4 for monitoring of the 3 programs. Target: 3 monitoring programs with outcomes reports as of year 1	Frequency of measurement: quarterly or semiannually, depending on the specific program Means of verification: monitoring reports, follow-up report, midterm, and final evaluation reports Responsible agency: PMU

Outcome	Current situation (2009)	Indicators	Year 1	Year 2	Year 3	Year 4	Year 5 target	Observations
Pium and Riozinho river basins have a sustainable management structure for water resources consistent with state water policy: technical inputs and legal and institutional mechanisms to manage water use and conservation	Zero	Instruments					(7 monitoring networks operational) Criteria for supplying water implemented	(1) estimated average for the state of Tocantins). Frequency of measurement: initial, year 3, and end of program. Means of verification: monitoring reports based on NATURATINS reporting Responsible agency: PMU

Outcome	Current situation	Indicators	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
State and municipal entities participating directly in the program have been strengthened.	Zero	Number of strengthening plans agreed upon between PMU and state entities and municipal governments.	Strengthening plans agreed upon with SRHMA, NATURANTINS, RURALTINS, ITERTINS, SEAGRO, SEINF, SIC and municípios of Pium, Cristalandia, and Lagoa da Confusão.	Strengthening plans in execution			PMU evaluation report	Public entities with contracts signed and work plans approved.	The institutions involved in the program have training opportunities for their technical staff and acquire enough goods and services to increase their efficiency and effectiveness. Means of verification: Semiannual reports Responsible agency: PMU
Local training for strategic and organizational planning and environmental management	Zero	% officials trained	Specialists and officials selected	Training plans implemented	20% of officials and specialists have been trained.			Specialists and officials of the municípios of Lagoa da Confusão, Pium, and Cristalandia trained in strategic and organizational planning and environmental management	Frequency of measurement: Annual Means of verification: Annual reports Responsible agency: PMU
Irrigation district organized and able to establish irrigation contracts with users.	Zero		Survey, registry and selection of irrigators in project area. Management firm contracted.	District bylaws approved and terms of membership of irrigators defined and signed.	SRHMA defines and implements measures to support district's operation.		Evaluation by SRHMA to confirm the capacity of the district to administer the project	Irrigation district organized and able to administer the new infrastructure.	Frequency of measurement: annual Means of verification: Irrigation district reports Responsible agency: PMU

Outcome	Current situation	Indicators	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Observations
State and municipal entities and the irrigation district have adequate administrative and operational capacity.	The irrigation district does not exist and the entities involved have inadequate capacities.	Less time required to obtain licenses and gain access to services of the state entities involved. Cost recovery by the district (%).	Initial survey to determine response times in public entities involved and measure public satisfaction with the services provided.			Survey to measure response times and user satisfaction after the strengthening process	Final evaluation		PMU report based on reporting from the district and from state and municipal entities.

PROCUREMENT PLAN										
Ref. No.	Description and estimated cost of the procurement contract	Procurement method	Review (Prior or Post)	Source of financing and percentage		Prequalification (Yes/ No)	Estimated dates		Status (pending, in process, awarded, cancelled)	Remarks
				IDB (%)	Local (%)		Publication of specific procurement notice	Completion of contract		
1. Goods										
1.1	Water monitoring equipment Estimated cost: US\$217,000.00	ERA	Ex post	40	60	No	Second quarter of 2010	Third quarter of 2010	Pending	
1.2	Vehicles for the Department of Water Resources and Environment (SRHMA), the Rural Development Institute of the State of Tocantins (RURALTINS), the Nature Institute of Tocantins (NATURATINS), and the Land Institute of the State of Tocantins (ITERTINS). Six double-cabin vans, 4x4, and four motorcycles Estimated cost: US\$309,296.00	ERA	Ex post	40	60	No	First quarter of 2010	First quarter of 2010	Pending	
1.3	Boat, outboard motor, and trailer for NATURATINS Estimated cost: US\$5,250.00	ERA	Ex post	40	60	No	First quarter of 2010	First quarter of 2010	Pending	
1.4	Computer equipment – ITERTINS Estimated cost: US\$10,500.00	ERA	Ex post	40	60	No	First quarter of 2010	First quarter of 2010	Pending	
2. Works										
2.1	Regularization and elevation dams. Implementation of flow-regulating accumulation dams and four dams to raise water levels in the Pium and Riozinho rivers Estimated cost: US\$115,868,025.13	ICB	Ex ante	64	36	Yes	Fourth quarter of 2009	First quarter of 2013	Pending	
3. Nonconsulting services										
3.1	Management system. Contracting of the management system prepared for Procidades or similar system Estimated cost: US\$250,000.00	DC	Ex post	60	40	No	Second quarter of 2010	Third quarter of 2014	Pending	
4. Consulting services										
4.1	Program admin firm Estimated cost: US\$6,742,000.00	QCBS	Ex ante	95	5	No	Fourth quarter of 2009	Fourth quarter of 2014	Pending	

4.2	Supervision and inspection of works. Supervision of works for the dams, roads, and public services in Pium and Lagoa da Confusão Estimated cost: US\$2,402,000.00	QCBS	Ex ante	95	5	No	Fourth quarter of 2009	First quarter of 2014	Pending	
4.3	Final designs for the works. Dams and road system Estimated cost: US\$3,100,000.00	QCBS	Ex ante	95	5	No	Fourth quarter of 2009	First quarter of 2013	Pending	
4.4	Business plans. Structuring of business and investment plans to organize and strengthen productive chains (two plans) Estimated cost: US\$120,000.00	QCBS	Ex ante	95	5	No	Second quarter of 2010	Second quarter of 2011	Pending	
4.5	Preparation of the water resources plan Estimated cost: US\$1,185,000.00	QCBS	Ex ante	95	5	No	Third quarter of 2010	Third quarter of 2011	Pending	
4.6	Installation and operation of the water monitoring network Estimated cost: US\$2,135,000.00	QCBS	Ex ante	95	5	No	First quarter of 2010	Fourth quarter of 2014	Pending	
4.7	Environmental mitigation. Wildlife rescue and surveillance; safeguards for the population; removal of vegetation and cleanup of dumpsite; restoration of vegetation in the dam zone. Estimated cost: US\$361,000.00	QCBS	Ex ante	95	5	No	First quarter of 2010	Fourth quarter of 2014	Pending	
4.8	Environmental monitoring. Monitoring of limnology, fish life, forest fragments, and water table Estimated cost: US\$1,295,000.00	QCBS	Ex ante	95	5	No	Fourth quarter of 2009	Fourth quarter of 2014	Pending	
4.9	Archeological retrieval Estimated cost: US\$125,000.00	QCBS	Ex ante	95	5	No	First quarter of 2010	Fourth quarter of 2011	Pending	
4.10	Social-environmental activities - Environmental education, institutional communication, and monitoring of the expropriation process. Estimated cost: US\$564,000.00	QCBS	Ex ante	95	5	No	First quarter of 2010	Fourth quarter of 2014	Pending	
4.11	Monitoring and evaluation Estimated cost: US\$450,000.00	CQS	Ex ante	100	0	No	First quarter of 2010	Fourth quarter of 2014	Pending	
4.12	Audit Estimated cost: US\$387,000.00	CQS	Ex ante	100	0	No	First quarter of 2010	Fourth quarter of 2014	Pending	

(ERA) Electronic reverse auction

(CQS) Selection Based on Consultant's Qualifications

(ICB) International Competitive Bidding

(QCBS) Quality- and Cost-based Selection

(DC) Direct Contracting

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/10

Brazil. Loan ___/OC- BR to the State of Tocantins
Development Program for the Southwest Region
of the State of Tocantins - PRODOESTE

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the State of Tocantins, as Borrower, and with The Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the Development Program for the Southwest Region of the State of Tocantins - PRODOESTE. Such financing will be for an amount of up to US\$99,000,000 from the Single Currency Facility of the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.