



1. Project Data

Project ID P118540	Project Name BR Santa Catarina Rural Competitiveness
Country Brazil	Practice Area(Lead) Agriculture

L/C/TF Number(s) IBRD-79520	Closing Date (Original) 30-Sep-2016	Total Project Cost (USD) 189,000,000.00
Bank Approval Date 02-Sep-2010	Closing Date (Actual) 30-Jun-2017	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	90,000,000.00	0.00
Revised Commitment	90,000,000.00	0.00
Actual	90,000,000.00	0.00

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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) described in the project appraisal document (PAD, page 8) and Loan Agreement (page 6) is “to increase the competitiveness of Family Agriculture Producer Organizations while providing support for an improved framework of structural competitiveness-inducing public services activities in the Borrower’s territory”.



b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

The Project implemented a Specific Investment Loan (SIL) of US\$90 million in the State of Santa Catarina (SoSC). The SIL was primarily financing a Sector Wide Approach (SWAp) with Disbursement Linked Indicators (DLI) to support the SoSC's eight rural Eligible Expenditure Programs (93 percent of the loan) in six sectors (Agriculture, Environment, Tourism, Water Resource Management, Infrastructure and Public Sector Management). EEP are pre-established expenditure programs/government budget lines in Brazil (in this case of the State government of Santa Catarina), which are categorized by sector and include various activities (for example, activities to improve agricultural production systems are part of the Competitive Agribusiness EEP). EEP are managed by government agencies and the Bank financially supported (typically a portion of) the programs considered as "eligible" through retrospective reimbursement of expenditures. This reimbursement is based on the fulfillment of pre-specified DLI targets and linked to a percentage of all expenditures within an EEP. The remaining 7 percent of the loan financed activities related to technical assistance. The Project was comprised of the following components:

Component 1: Family Agriculture Competitiveness and Increased Access to Markets (Appraisal cost: \$95.5m; Actual cost: \$82.19m). This component focused on the implementation of EEPs that were representative of the main agricultural sector activities in the SoSC and in line with the State's rural development agenda. The main efforts of Component 1 were the financing of EEP pre-investment activities to support family agriculture producer organizations (FAPO) in preparing demand-driven investment proposals/business plans for farm system improvements and market-oriented value-added arrangements, and the subsequent implementation of those proposals that were considered viable, with the use of matching grants. The component was also to finance the provision of Technical Assistance (TA) to support family agriculture competitiveness in the target areas in the SoSC. The component aimed to work in synergy with local, municipal and regional stakeholders to enhance their participation and organizational skills for the project implementation.

Component 2: Complementary Public Investments for Rural Competitiveness (Appraisal cost: \$80.28m; Actual cost: \$93.32m). This component focused on enhancing the structural rural competitiveness framework by supporting activities that were complementary to Component 1. Specifically, Component 2 was to finance six multi-sectoral public programs to improve the rural business environment in the SoSC, which included (i) rural technical assistance and extension services, (ii) sanitary and phyto-sanitary services, (iii) water resource management, (iv) ecosystems and corridor management, (v) rural infrastructure investments, and (vi) rural environmental education.

Component 3: Support to the Rural Competitiveness Institutional Framework (Appraisal cost:



\$12.54m; Actual cost: \$13.71m). This component focused on improving the performance of the public administration through supporting (i) more efficient financial management and procurement systems, (ii) a results-based management approach in the Project's implementation and the SoSC's key institutions that have administrative jurisdiction over the rural sector, and (iii) project coordination, monitoring and evaluation (M&E).

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project cost: The actual project cost was \$189.45m (100.24 percent of the \$189m appraisal estimate). The costs of Component 1 decreased to 86 percent of the appraisal estimate during implementation, mainly due to lower costs of the productive investments (the appraisal estimate had not accounted for beneficiary contributions which resulted to be \$19.73m). In contrast, the costs of Component 2 increased to 116.24 percent of the appraisal estimate, as expenses for the pre-investment vetting process of investment proposals/business plans, particularly the regulatory framework compliance check, resulted to be significantly higher than estimated (ICR, page 16). Overall, with the opposing changes in actual costs of Component 1 and 2, the total project costs resulted to be at the estimated appraisal level.

Financing: The Project was funded through an IBRD Specific Investment Loan (SIL) of \$90m to the Brazilian State Government of Santa Catarina, using a Sector Wide Approach (SWAp). The full amount of the SIL was disbursed by project completion (100 percent), and the actual disbursement amounts were in line with the original disbursement plan (based on the cumulative disbursement curve in the Operations Portal).

Borrower Contribution: The actual borrower contribution at project completion was \$99.45m, in line with the appraisal estimate of \$99m. At project appraisal no beneficiary contributions were included in the cost estimations, but at project closure beneficiary cash and in-kind contributions amounted to \$19.73m (ICR, page 84).

Dates: The Project was approved on September 2, 2010 and became effective on December 24, 2010. The original closing date was September 30, 2016, which was extended by nine months to June 30, 2017 to (1) to ensure completion of ongoing project activities, (2) respond to the sharp increase in demand for subprojects in the last year of project implementation, and (3) allow for sufficient time for results dissemination. In total, the Project was restructured four times (all Level 2), with the relevant details summarized below.

Restructurings:

- 1 . March 26, 2014. Level 2 restructuring for a loan agreement amendment to include the Urban Mobility and Sanitary Defense in the EEP and disbursements arrangements.
- 2 . June 11, 2014: Level 2 restructuring based on the Mid-Term Review findings for the (1) adjustment to the Results Framework by replacing two EEP-specific indicator linked to the PDO with one aggregated indicator (the two primary PDO indicators remained unchanged), (2) changes in the disbursement arrangements, and (3) the deletion of the legal covenant to create an Institute of Water Administration due to changes in State priorities.



3 . April 7, 2016: Level 2 restructuring for the (1) reallocation of funds and (2) adjustment of the Disbursement Linked Indicator (DLI) on water resources.

4 . June 7, 2016: Level 2 restructuring for the extension of loan closing date by nine months. Throughout project implementation there had been some modifications to the Results Framework (dropping, introduction, adjustment of some indicators), but without material changes.

3. Relevance of Objectives

Rationale

At appraisal, the vast majority (over 80 percent) of the SoSc's rural population were involved in small family agriculture farming. Such family farms were small in size (less than 50 hectares, with a third less than 10 hectares) and lacked organization, productivity, technical knowledge, scale production, and value-addition. These farmers were not prepared to compete in markets that required high productivity, product quality including compliance with sanitary and phytosanitary standards, and efficient logistics. Poor water resource management and water disputes further exacerbated the situation. To address these limitations and support farmers to overcome constraints to market integration, the SoSc's 2008-2011 Multi-Year Development Plan (PPA) and the Santa Catarina 2015 Development Plan focused on improving the rural agribusiness environment and capacities for small family farms to better compete and to adopt environmentally friendly production and natural resource management practices. Based on the State's evolving rural development agenda and the Bank's Country Partnership Strategy (CPS) at the time of appraisal, the Rural Competitiveness Project explicitly stressed the element and need of strengthening rural competitiveness in the SoSc. As a result, the project objective emphasis moved from the previous projects' focus on poverty reduction to agricultural producer competitiveness.

At closing, the rural competitiveness theme remained of strategic importance to the SoSc, as reflected by the World Bank's FY18-FY23 Brazil Country Partnership Framework (CPF). One of the objectives of the CPF's Focus Area on Equitable and Sustainable Development is to "promote socio economic development of small rural producers and vulnerable groups" (CPF, page 31). To achieve this objective, the CPF specifically mentions the need to foster sustainable agricultural practices and the inclusion of family farmers through the provision of "productive assets, improved access to services, and better connections to local, urban, regional and global markets" (CPF, page 31). These activities are fully aligned with the Rural Competitiveness Project activities.

The PDO was clearly defined during project design and maintained its validity throughout implementation. Based on related previous Bank interventions in the SoSc and its strategic priorities for the rural sector, it was adequately defined and linked to the State's preferences and capacity at the time. Overall, the relevance of objectives is rated High.

Rating



High

4. Achievement of Objectives (Efficacy)

Objective 1

Objective

To increase the competitiveness of Family Agriculture Producer Organizations in the Brazilian State of Santa Catarina.

Rationale

The Project defines competitiveness as “the ability of a firm to offer products and services that meet the quality standards of the market – whether local, regional, national or international -- at prices that are competitive and provide adequate returns on the resources employed or consumed in producing them” (PAD, paragraph 6). To improve rural competitiveness in the SoSC, the intervention logic of the Project was two-pronged and is explained in the Project’s Theory of Change (ToC) (ICR, Annex 1.C): on the one hand, provide FAPO with technical assistance and related financial support through matching grants to improve their production and incentivize linkages to markets/buyers, and on the other hand, finance complementary public goods and service activities to enhance the enabling environment for improved rural competitiveness (such as road infrastructure investments, improved certification/sanitary and phytosanitary (SPS) services systems, etc.).

The Project Results Framework included one single PDO indicator for Objective 1: “the increase in total value of annual sales for participating Family Agriculture Producer Organizations (FAPO)” (PAD, page 8; ICR, page 7).

The underlying assumption of this indicator is that improvements in productivity, quality, and/or marketing techniques bring about that change in sales. This PDO indicator is sub-optimal and can only be considered as proxy, as sales value is affected by many different external factors that are not directly linked to farmers’ level of competitiveness (such as market prices, weather/other shocks affecting production or consumption, etc.). The project team recognized this limitation (PAD, Annex 3), but no additional measurements for FAPO competitiveness were included in the M&E design. Alternative measurements could have been FAPO’s increase in market share/expansion to new markets/buyers, marketing characteristics (e.g. establishment of a brand), or organizational characteristics such as management/fiduciary quality. Some of these are admittedly hard to measure, but could have been chosen complementary to only sales figures. IEG recognizes that changes in sales (volume or value) have been used in several of similar projects promoting business plans in the region.

At project completion the 30 percent target of the PDO indicator was substantially exceeded, with a 62 percent increase in total annual sales value. The result is based on data from the Project’s 2016 quasi-experimental impact study ((EPAGRI/CEPA 2016), which applied the double difference method with propensity score matching. According to the results, Project beneficiary farmers experienced a value



increase in their sales of 118 percent compared to a value increase of 44 percent in the control group between 2009 and 2015. Related to sales income, the ICR's economic and financial analysis estimates an average incremental income increase per beneficiary farm family was US\$3,400 per year. Complementing the results of the PDO indicator, the impact study also reveals that beneficiary farmers expanded their market access, as 15.7 percent of their sales in 2015 went to markets outside their region compared to 1.3 percent in 2009 (from 13 sales points in 2009 to 24 in 2015). In comparison, the control group expanded only from 15 to 17 sales points over the same period.

Production systems, organizational capacity, and market orientation

To achieve the PDO, the Project supported existing FAPO in the preparation of investment proposals ("business plans"), in which they identified their investment and capacity needs to improve production and service quality standards to be market competitive. By adopting such a competitive selection process and requiring existing FAPO to develop investment proposals to apply for matching grant financing, the Project encouraged FAPO to demonstrate their motivation, engage in a needs assessment of their production system, present a clear vision of objectives, and consider innovations in their production processes.

There were two predominant types of business plans: (i) business proposals with a main focus on farm system improvements (Type 1) and (ii) business proposals supporting farm system improvements in addition to strengthening FAPO's market orientation/access (Type 2). Eligible farm system improvements financed under the Project included product diversification, certification, and new technology adoptions (such as farm-level irrigation systems, grazing system management, or climate resilient practices). Overall, the Project financed over 723 business plans, directly benefitting 32,394 farm families (130 percent of target). Of these, 132 were Type 1 farm system improvements investment plans (this information is not explicit in the ICR, but was provided by the project team upon request for the preparation of this ICR Review). They provided matching grants for 4,669 families to adapt their farming systems and provided them with technical assistance on improved production practices, crop diversification, compliance with animal/plant health standards, water resource management. The project also provided other small grant investments for specific pilot activities or groups (such as targeting young or indigenous), with a total of over 16,000 beneficiaries (ICR, page 12). Almost half of these received forage kits for milk production.

At project completion, the intermediary results indicator measuring small agribusinesses complying with sanitary and phytosanitary (SPS) standards exceeded its target by 47 percent (723 SPS complying agribusinesses compared to the target of 500). Moreover, 1,685 field demonstrations were conducted to incentivize farmers to adopt improved and environmentally friendly practices. The related intermediary results indicator target was exceeded, as 59,834 climate-resilient production systems improvement plans were implemented compared to the target of 20,514 (It is important to note that the ICR reports a total of 59,834 beneficiary farm systems for the whole EEP, which include the 21,491 project-financed beneficiaries and additional 38,343 farm systems financed by Federal and State funds programs. The target for the total number of EEP-supported farm systems was 25,000, so at project completion it was substantially exceeded).

591 business plans were Type 2, which more strongly focused on market access and/or expansion. For the preparation of these business plans, 10,903 farmers received technical assistance to identify and analyze (existing and potential new) markets and commercial partners to sell their goods/services and strengthen their knowledge of the market in terms of customers, competitors, product demand, and prices. Such



enhanced understanding of the opportunities and constraints for market access, and the identification of potential entries/expansions to market agents are important preconditions to become market-competitive and -oriented.

The Project also supported FAPO through training on organizational capacity and courses related to business administration. At project completion, 1,920 indigenous farm families had received organizational support (all of the targeted indigenous population) and over 1,500 rural youth had been provided with courses on leadership, management and entrepreneurship (described in more detail below). It further supported groups of farm families that were not part of a producer organization by helping them to formalize into 37 new cooperatives (123 percent of target), assisting them in the legal, environmental and sanitary compliance for enhanced market access. Such mix of production, service and organizational skills has the potential to contribute to becoming more competitive; however, the ICR does not provide evidence on changes in behavior resulting from these activities.

Regional cooperation networks

Complementing the support for individual FAPO, the Project also provided financial and technical assistance support for a group of FAPO with the objective to strengthen municipal and local cooperation. The reasoning was to support the creation of an enabling environment and economies of scale for enhanced rural competitiveness, including more systematic public service support and business empowerment for FAPO, by for instance, cooperating in veterinary services or regionally-focused market-oriented rural extension strategies. At completion, the related intermediary results indicator showed that 259 of such value-added arrangements/networks existed (up from 55 at baseline), considerably exceeding the indicator target of 138.

Rural tourism

The Project intended also to support non-agricultural business development in the SoSC -rural tourism in particular- to promote non-agricultural income sources in rural areas. However, the development and implementation of proposed rural tourism activities resulted to be more complex and cost-intense than expected at design. At project completion, only five of the intermediary results indicator target of 20 rural tourism itinerary plans (revised from original 30) had been established. The ICR does not provide much detail on this sub-category of activities, but highlights that in contrast to the original design, at the Mid-Term Review (MTR) the Bank agreed to fully finance the whole Eligible Expenditure Program of the Secretariat for Tourism, Culture and Sports, which substantially raised related costs. However, the ICR emphasizes that “actual achievements went far beyond what the indicator suggests, covering state-wide promotional events, extensive farmer organization, publicity campaigns/other” (ICR, paragraph 27). From the IEG perspective, it is not clear why the indicator was not adjusted accordingly during the MTR. The task team provided additional information during the preparation of this Review, explaining that “at the time, the Secretariat of Tourism (SOL) financed mainly urban and coastal tourism projects, with no emphasis in rural areas. SOL underestimated the complexity of ensuring basic public infrastructure for tourism (roads, electricity, water, road signaling, etc.). Moreover, the high turnover in the steering group of SOL had contributed to the low implementation, since the rural tourism strategy was not internalized as a normal activity of the Secretariat” (Email to IEG, May 23 2018).

Rural youth integration

Although a target group since project appraisal, the rural youth in the SoSC became a priority after the 2013



Mid-Term Review (MTR) with the aim to provide them with specific training on farming practices and rural tourism, business and computer skills (“digital inclusion”) projects in which municipalities invested in modern network towers, equipment and internet signal maintenance for project enterprises to better connect to networks, as well as leadership and environmental management. At project completion, 902 business plans of rural youth had been financed. Survey interviews with 518 direct young beneficiaries (31 percent of all) revealed that 65 percent related project interventions to increases in their household income from 15 to 50 percent (ICR, paragraph 19). No details on these findings are presented in the ICR.

Rating

Substantial

Objective 2

Objective

To provide support for an improved framework of structural competitiveness-inducing public services activities in the Brazilian State of Santa Catarina.

Rationale

The Project Results Framework measured the achievement of Objective 2 through the PDO indicator on “the coordinated implementation of six public programs to improve the rural business environment” (PAD, page 8; ICR, page 7). This PDO indicator was comprised of the following indicators linked to the different sectors supported by the Project:

- 1 . **the share of state’s water resources under decentralized and participatory planning and management.** Baseline: 0; Target: 65 percent; Actual achievement: 65 percent (100 percent of target).
- 2 . **the share of state territory managed under an “ecological corridor” concept (coexistence of sustainable production and preservation).** Baseline: 0; Target: 10 percent; Actual achievement: 10 percent (100 percent of target).
- 3 . **100 percent rehabilitation of rural roads associated with business plans.** Baseline: 0; Target: 100 percent; Actual achievement: 110 (110 percent of target).
- 4 . **the share of public financing to family agriculture enterprises channeled through the new extension/technical assistance strategy.** Baseline: 0; Target: 60 percent; Actual achievement: 60 percent (100 percent of target).
- 5 . **re-structured Sanitary and Phyto-Sanitary (SPS) Services.** Baseline: 0; Target: 2,740; Actual achievement: 2,788 (102 percent of target). This indicator replaced two original EEP-specific indicators based on the June 2014 restructuring. The SPS Services aimed to achieve the following targets:
 - 5a) the number of enterprises legalized, complying with sanitary standards. Baseline: 440; Target: 420 (incremental); Actual achievement: 477 (incremental) (114 percent of target).
 - 5b) the number of farms certified for absence of animal tuberculosis and brucellosis. Baseline: 0; Target: 700; Actual achievement: 728 (104 percent of target).



5c) the number of Family Agriculture production and processing units registered and certified as complying with phytosanitary requirements. Baseline: 6,000; Target: 2,740 (incremental); Actual achievement: 2,788 (incremental) (102 percent of target).

6 . The number of rural schools carrying out interdisciplinary actions under PEEA (State Environmental Education Policy). Baseline: 440; Target: 600; 2016 Revised Target: 1,000; Actual achievement: 1,437 (104 percent of target).

Objective 2 goes hand in hand with the Project's competitiveness aim to enhance the "ability of a firm to offer products and services that meet the quality standards of the market [...] at prices that are competitive [...]" (PAD, paragraph 6). This aim emphasizes the need for (i) quality standards compliance (for example, through technical production capacity and knowledge as well as quality standard enforcement/certification systems) and (ii) the ability to offer competitive prices (for example, through reasonable transport/logistical costs). Moreover, the above can be assumed to benefit from an enabling environment that preserves the natural resource base the products/services rely on (e.g. through adequate water resource and ecosystems management, and general environmental awareness).

At project completion, the targets of the PDO and all sector-specific indicators were achieved or exceeded. However, several of these indicators capture output- rather than outcome-level results, as discussed in Section 9: M&E. For the subsequent assessment of the achievement of Objective 2, related project activities are discussed for each sector program supported by the Project.

Rural technical assistance and extension / Sanitary and phyto-sanitary services (combined themes)

With the aim to improve quality standards adoption among FAPO and enhance the State's compliance monitoring capacity, the Project targeted the technical service system at large, particularly SPS certification services, technical extension, services and land regularization services. It primarily engaged through training and an increase and variation of technical agents in the responsible service agencies (for example, agents working specifically with indigenous populations). The intermediary results indicators of "agro-livestock SPS Services restructured to include specific support for FAPO" and of the targeted 176 "new regular Technical Assistance and Rural Extension professional staff allocated by EPAGRI in priority project municipalities, by CIDASC to phytosanitary certification and by FATMA to Integrated Economic-Ecological Systems (SIEE)" were fully achieved at project completion. Similarly, the targets for farm-level SPS certification were exceeded (2,788 FAPO with certifications), increasing FAPO's product market acceptance. The Project also streamlined animal transit guides and made related data public to enhance transparency. Regarding the State technical extension enterprise, a strong technical capacity was essential for its role in supporting FAPO in the preparation and execution of business plans. At completion, 60 percent of public funding for FAPO were channeled through the State technical extension enterprise, achieving the Project's respective PDO sector target. The ICR reports a high satisfaction of beneficiary FAPO with the extension services. Regarding land regularization, 2,804 farm properties were legalized (93 percent of target), enhancing their access to credit. For all technical service providers, the Project increased the capacity of technical staff (full achievement of project targets for extension services and SPS certification services, but only partial achievement for animal product inspection services).

Water resource management



The Project supported the decentralization and promoted the participatory management of a large portion (65 percent) the SoSC's water resources through the establishment and/or capacity-building of 26 Watershed Management Committees and 16 River Basin Committees, and the preparation of 14 River Basin Plan. Based on an assessment of the State's extension enterprise, awareness of water resources management needs and linkages to their production is stated to have increased among farmers. One result of this increased awareness is the strong increase in voluntary user registrations with the Water Resources Management Directorate's cadaster from the baseline of 3 to 74,419 users at completion - 115 percent of the respective intermediary results indicator target of 65,000. This provides the Directorate with enhanced information to estimate water demand. In tandem, the Project strengthened the capacity of the Directorate by increasing the number of tenured technical staff by 16 (100 percent of the intermediary results indicator target), based on institutional challenges in terms of high turnover and shortages of technical staff. However, the ICR does not elaborate on how and for what use(s) water demand analyses are conducted. At the request of IEG, the task team explains that the cadaster is "a tool to support the Information System on Water Resources – SIRHESC. Its data are used in all instruments of water resources management, in particular for Hydrographic Basins Planning" (Email to IEG, May 23 2018).

Another aspect highlighted in the ICR is the modernization of the system through reflectiveness tools like "aerial photogrammetric and hydro-geological mapping of the State" and a "State Hydrometeorological Monitoring and Warning System" to strengthen the State's institutional and resilience capacity. The project team clarified that these activities had been directly supported with Project funds and co-financing from the federal government funds (Email to IEG, May 23 2018).

Ecosystems and corridor management

The Project incorporated the experience of its predecessor project Microbacias II to support the establishment of so-called "ecological corridors" (EC) that promote a landscape approach (the coexistence of sustainable farm production and biodiversity conservation). This was a State priority and at the end of the Project the PDO target of 10 percent of state territory was managed under EC. The ICR is not clear on how the state territory under EC is estimated for the PDO indicator. A follow-on explanation from the project team clarifies that "the area considered in the indicator was the entire territory of the two Ecological Corridors (Chapecó and Timbó), which represent 10% of the territory of SC (990,000 hectares). The two Ecological Corridors were created through State Decrees No. 2,956 / 2010 and 2,957 / 2010" (Email to IEG, May 23 2018). The EC effort comprises inter-institutional bodies (Ecological Corridor Management Groups) and involvement of stakeholders such as farmer representatives through local management committees as well as private organizations, which can be assumed to contribute to enhanced public-private coordination and participatory planning in the rural sector. The ICR highlights the importance of the Project as part of a partnership effort that supported the development and use of innovative tools like the Forest Area Registry (database on incremental forest areas to monitor areas for payments for environmental services in the State) and the Conservation Credit System (system with information on biodiversity loss in the EC and provision of conservation credits to farmers/enterprises to pay off environmental commitments). Regarding the latter, at project completion 1,631 hectares of forests were under Conservation Credits, substantially exceeded the respective intermediary results indicator target of 950 hectares.

Rural infrastructure investments

The Project financed the rehabilitation of nearly 500 km of tertiary roads (110 percent of the revised



intermediary results indicator target) in 29 municipalities, which was directly linked to the business plan investments supported under Objective 1. This complementary support is a valuable contribution to increasing rural competitiveness, as it responds to the demand from beneficiary FAPO and their off-take market agents/buyers. In terms of quality, an environmental assessment conducted by the Project showed “better environmental sustainability than similar roads in most state municipalities” (based on a random sample of seven project-supported roads). Such investments in tertiary roads, which are typically not the priority for larger road infrastructure projects, have the potential to transform rural communities by providing enhanced logistics access to markets not only for direct beneficiaries but also the whole population in the area. This is based on the assumptions that these tertiary roads link to a wider transport network and that they are maintained well. Regarding the latter, the ICR points out a respective sustainability risk, given that the Project did not include a formal mechanism for municipalities’ responsibility to monitor and maintain these roads.

In addition to its physical infrastructure investments, the Project also promoted pilot investments on “digital inclusion” by enhancing internet connectivity and providing complementary communications systems training for supported business plans, particularly led by rural youth. At project completion, 43 pilot investments in 11 municipalities were financed by the Project (143 of the intermediary results indicator target). An assessment of this pilot investment found benefits in terms of “improved farm management (47%); market knowledge (43%); and reduced information search times (31.3%)” (ICR, paragraph 24). All of these are important factors to be more competitive and engage in markets.

Rural environmental education

The objective of this education program was to increase environmental awareness in school-age youth to train future “environmental protectors”. The Project focused on supporting activities such as trainings, field trips, and dissemination of training materials for primary and high school students -including indigenous youth-, teachers, and school awards for environmental education efforts. At project completion, the PDO indicator was exceeded, with 1,437 instead of 1000 targeted schools engaging in interdisciplinary actions in line with the State Environmental Education Policy. It is not clear from the PAD or the ICR which percentage of schools/students in the SoSC this effort reached. Upon request, the task team informed IEG that the Project reached “70.4% of the state’s total universe of 2,040 schools (1,073 schools of the state school network and 967 schools of the municipal network)” (Email to IEG, May 23 2018).

Rating

Substantial

Rationale

Based on the above assessment on the achievements of Objectives 1 and 2, the overall Efficacy rating is Substantial.



Overall Efficacy Rating

Substantial

5. Efficiency

Economic and Financial Analyses

At appraisal, the Economic Internal Rate of Return (EIRR) of the entire project was estimated at 15.9 percent, with a Net Present Value (NPV) of US\$35.4 million. These estimates did not consider beneficiaries' in-kind and/or existing investments. For the business plan investments (Component 1), financial NPV and IRR were estimated based on seven production models combined with twelve farm models within selected value chains (as it was not known at appraisal which types of investments would be supported given the demand-driven approach of FAPO business proposals). The twelve farm models used for the ex-ante economic and financial analyses were based on "real experiences of successful enterprises [...] identified during preparation" (PAD, paragraph 55), namely on data collected for the ex-post economic and financial analysis for the predecessor Microbacias II. For the analysis, each farm model was simulated in two ways (introducing technological change with static versus with increased producer prices). The estimated benefits by this simulation were generated by (i) increased unit producer prices due to improved quality and/or value added investments supported by the Project and (ii) technological change supported by the Project, in comparison with the non-project situation. Based on these 24 simulations, the NPV ranged from R\$3,095 to R\$49,910 and the FIRR was above 50 percent. Moreover, a sensitivity analysis for the entire Project was conducted, estimating that a 12.7 percent increase in projected incremental costs (or a 11.3 percent reduction in projected incremental income) would reduce the EIRR to 12 percent. The Project was considered to be "robust"/ "not very sensitive" to reductions in production and/or prices (PAD, Annex 9). The analyses applied a 20-year period and a discount rate of 12 percent.

At closing, the Economic Internal Rate of Return (EIRR) of the entire project was estimated at 26.6 percent, with a NPV of US\$127.3million (these figures are the ones comparable to the ex-ante EIRR of 15.9 percent and NPV of US\$35.4million). The ex-post analysis estimated also considering beneficiaries' in-kind and/or existing investments, leading to a EIRR of 16.4 percent and an NPV of US\$62.3million. Both are higher than the ex-ante values. The financial IRR (FIRR) for the total project was estimated to be 29 (17.9) percent and the financial NPV US\$134.7 (US\$76.7) million (with beneficiaries' in-kind/existing investments). For the business plan financing (Component 1), the EIRR was estimated at 30 percent, with a Net Present Value (NPV) of US\$12.8 million when considering beneficiaries' in-kind and/or existing investments. These estimations were based on a random sample of 206 business plans (from a population of 680 plans) across all regional units where the Project was active. The sampled business plans represent around 5 percent of the total direct beneficiary population (ICR, Annex 4). Similar to the PAD, a sensitivity analysis was conducted using switching values (values of "risky" variables at which the EIRR of a project equals the discount rate of 12 percent and the NPV equals 0). The Project was considered as moderately sensitive to production and/or price reductions, with a 12 percent reduction in gross income leading the EIRR to be 12 percent. The ICR explains that this moderate price sensitivity "is partly due to the small-scale of most BPs supported. On the one hand, changes on sales income can reduce net income or profits substantially since farm costs cannot adjust in the same proportion. On the other hand, most farms and supported businesses participate in their product or service markets as price takers, since their scale is so small that they cannot influence prices"



(ICR, paragraph 33). The Project was found to be also moderately sensitive to input and labor costs, as a 22 (80) percent input (labor) cost increase would lead to a 12 percent EIRR. As in the PAD, the ICR bases its economic and financial analyses on a 12 percent discount rate. However, it applies calculations with a perpetual evaluation time period (instead of 20 years). The ICR explains that this was done to simplify calculations, and the tables in Annex 4 show that the NPV and IRR are similar using either time period. Overall, the ex post methodology for the economic and financial analyses appears sound.

Administrative/Operational Efficiency

Regarding operational efficiency, the Project experienced considerable initial delays partially due to the introduction of the novel SWAP instrument with DLI, which required a significantly more complex and cumbersome coordination with all EEP implementation agencies than a standard SIL. Also, bureaucratic challenges such as lack of technical professionals and high turnover of operational staff in implementing agencies as well as a more than anticipated rigorous selection process of business plan proposals caused delays. A substantial portion of the earlier delay was recovered after the MTR restructuring and changes to the disbursement rules. In general, implementation was uneven, with some key activities executed with less or near the planned budget (such as business plan investments, or technical assistance of extension services) and other subcomponents exceeding the original cost estimates (such as pre-investments, regulatory framework compliance, rural Tourism, and central administration strengthening). At project completion (nine months after the original closing date), all PDO and DLI and PDO indicators were achieved or exceeded, similar to the intermediary results indicators.

Given the Project’s satisfactory estimated rates of return and the generally acceptable operational efficiency, overall efficiency is rated Substantial.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	15.90	100.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	26.60	100.00 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The Relevance of Objectives is rated High, as Project objectives were aligned with previous and current State priorities and Bank strategies. The achievement of the PDO to increase FAPO competitiveness and supporting



of structural competitiveness-inducing public services activities is rated Substantial, as the PDO outcomes and project indicators were generally achieved. Efficiency is rated Substantial based on the Project's satisfactory rates of return and acceptable operational efficiency. The overall outcome rating is Satisfactory.

a. Outcome Rating
Satisfactory

7. Risk to Development Outcome

The activities supported by the Project can be expected to sustain stakeholder capacity and productivity increase in the short and medium term. The Project beneficiary farmers/FAPO have become more competitive in terms of improved technical production practices, organizational capacity, and market orientation. The Project also strengthened regional networks of cooperatives, improving collaboration between various sector stakeholders. These advances are expected to benefit from new services to FAPO and rural entrepreneurs, such as a government low-cost credit line to support business plans like the ones promoted by the Project and Center for Innovations in Family Agriculture (ICR, paragraph 78). On the other hand, some Project investments in rural infrastructure might be at risk of decay in the medium to long-term. As mentioned under Achievements of Objective 2, the tertiary roads built related to some business plans lack a maintenance mechanism.

Furthermore, several public service providers and certification bodies have been strengthened and gained institutional capacity in the SoSC. The Project's complex multi-sector approach of a SWAp has fostered stronger interaction and inter-sectoral planning between several State implementation agencies, extension service providers, and FAPO. A positive example is the inter-agency coordination on Ecological Corridors. However, heterogeneity in term of technical and staff capacity across State sector agencies remain and require continued support. The Water Resource Management Directorate, which was found to suffer from several weaknesses during project implementation, has gone through a recent reorganization which the ICR assess to be a positive change (ICR, paragraph 79).

Nevertheless, a considerable challenge to the sustainability of the DO is the need for continued budget to maintain and/or expand activities established by the Project. Financial support is needed both at the local level and at the State level to maintain the multi-sector coordinated approach in the SoSC across the various implementing agencies. The fiscal uncertainty of the Federal Government of Brazil and State budgets puts the project outcomes at risk. The ICR refers to a government budget provision to sustain project activities beyond closing for the "short to medium term" (ICR, paragraph 82). It also highlights the SoSC's interest in a follow-on operation (ICR, paragraph 85). For that, it has submitted a US\$180 million proposal with a Bank loan of US\$126 million to the Federal Government, but the ICR does not report and IEG cannot find evidence that this proposal has been approved at the time of this review. Based on a follow-up conversation with the project team, IEG was informed that a follow-on project proposal was approved by the External Financial Committee of the Ministry of Planning, but "was not authorized to be prepared given the State's limited fiscal space to borrow external funds" (Email to IEG, May 23 2018).



8. Assessment of Bank Performance

a. Quality-at-Entry

At appraisal, the objectives of Rural Competitiveness Project assessed in this review built on and evolved from the experiences of two previous Bank loans in the State of Santa Catarina: the 1990-1999 Santa Catarina Land Management II and the 2002-2009 Natural Resource Management Projects (known as Microbacias I and II). The World Bank intervention logic, described above and outlined in the Theory of Change (ICR, Annex 7), was sound. It built on lessons from a series of earlier projects in the SoSC, particularly the predecessor Microbacias II, and responded to the increased demand of the State to enhance the competitiveness of rural family agricultural producers. The Bank project team incorporated its experience with other rural competitiveness projects in Brazil and elsewhere in the region in the project design. Given the novelty of the competitiveness angle for the SoSC, the project design considered the varying degrees of organization and skills of family agricultural producers in the State. As a result, it provided support to existing FAPO (main focus), but also helped informal family farmer groups to formalize into cooperatives.

Overall, the project design was complex, as it introduced a Sector-Wide Approach (SWAp) with disbursement-linked indicators (DLI) with the intention to incentivize structural reforms (which was not possible through the previous investment projects). At the end of Microbacias II, the Bank had identified the need to both (i) enhance producers' production systems directly to increase agricultural value-added and (ii) invest in related State public expenditure programs (the EEP) to complementarily stimulate rural competitiveness. With this needs assessment and lessons from similar projects in the States of Ceara and Minas Gerais, the Bank team decided to introduce the SWAp instrument through this project. This decision seems adequate, as the SoSC was considered a high capacity client based on the Bank's long-standing sector engagement. However, some issues could have been better anticipated during design:

- 1 . Implementation challenges in the institutional set-up and demand mobilization among FAPO for investment proposals/business plans.
- 2 . Given the novelty of the SWAp, there was an imbalance in the understanding of related rules among the different implementation agencies (particularly regarding disbursements and procurement).
- 3 . A focus on monitoring of DLI to ensure disbursements, rather than evaluating the outcomes of activities related to Objective 2.
- 4 . The extent of high turnover of technical agents at key institutions (particularly for the Water Resources Management Directorate) and how this would affect implementation progress.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

Bank supervision and related documentation were adequate overall. The task team leader (TTL) and most of the multi-sector task team was based in Brazil, which facilitated a continuous dialogue with different implementing sector agencies and project stakeholders. Particularly the fiduciary support was crucial in resolving the disbursement-related challenges discussed above. Also, the Bank-client engagement was stable, as the TTL was the same throughout the whole implementation period, which was beneficial for a complex operation like this one. Missions were regular and included multiple site visits and interactions with a range of



different stakeholders. Official supervision missions were complemented by “frequent informal visits and remote assistance over the project lifetime” (ICR, paragraph 74), the latter likely to have happened due to the project team’s motivation and proximity to the client.

During supervision it became evident that the Bank had overestimated the Borrower’s capacity to manage the complexity of a SWAp combined with DLI. The SWAp-related disbursement and procurement processes were restrictive and not consistently understood by the eight different sector institutions, which resulted in poor disbursement performance and delays in contracting of key consultants. Also, during implementation the State requested some expansions of activities to be eligible for project financing (related to sanitary defense and urban mobility). The Bank team dealt proactively with such implementation challenges, as evidenced by the restructuring efforts after the 2014 Mid-Term Review and in 2016. These addressed the above-mentioned implementation bottlenecks (liberalization of SWAp disbursement rules, adjustment of DLI) and responded to the changes in priorities (inclusion of new acceptable EEP activities and beneficiary types). In addition, the Project experienced delays in the implementation of the pre-investment activities related to Objective 1, as the demand mobilization among farmers was more challenging than anticipated. Such delays have been experienced in several Bank projects with a similar business plan-based approach in the region, and could have been considered and addressed more swiftly in the early stages of implementation.

Generally, the Bank team was proactive to solve implementation issues and, similarly, to gather evidence on results beyond the RF. Although different from the initial M&E plan, the team put an effort in conducting different types of results assessments. At project completion, the ICR could draw on a quasi-experimental impact evaluation related to activities of Objective 1 and complementary M&E studies by the implementing agencies of Objective 2.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The Results Framework (RF) was structured around the Project’s two-prong approach on the farm/FAPO-level (Objective 1) and on the wider structural public services-level (Objective 2). The RF in the PAD was comprised of over 20 indicators. This large quantity of indicators is due to the SWAp-design of the Project, as 13 were DLI that the SoSC had to monitor and report annually to trigger disbursements. The implementing sector agencies collected additional indicators, some of which are presented in Annex 1 on component outputs.

The main (and only) PDO indicator to assess competitiveness of FAPO is the change in total annual sales value of FAPO. The limitations of this PDO indicator have been discussed under Achievements of Objective 1. The PDO indicator to assess the structural competitiveness-inducing public service activities is comprised of



indicators relating to the different supported sectors. The majority results indicators of the Project are focused on outputs rather than outcomes (especially for Component 2), although some implicitly reflect outcomes (for example, the area managed under ecological corridors, a concept that embeds several changes in farm production and biodiversity preservation activities). Results in terms of changes in behavior are insufficiently recorded in the RF indicators.

The PAD includes the plan for an impact evaluation (IEG) to complement the RF. The Project aspired to engage in a well-designed IE, with a focus on Objective 1. The PAD outlines an experimental IE approach with three survey waves (baseline, mid-term and endline) to be executed by the Bank's Development Impact Evaluation Initiative (DIME). DIME was involved in several IE activities for Bank operations in Southern Brazil and sought to answer evaluation questions achieved changes in family farmers' market access, production/productivity, quality

b. M&E Implementation

During implementation, the project team formally restructured the RF to incorporate changes in implementation and progress. Indicators were mostly adjusted slightly in wording or changes to targets in both directions given the progress at MTR, seven indicators were dropped of which five were substituted by indicators that better captured project activities. After restructuring, the Project had 11 DLI instead of the original 13. It is not explained that in September 2016 the targets of two intermediary indicators were modified, but only nine months later the actual achievements resulted to diverge significantly (positively and negatively) from those revised targets. The assessment by the project team seems to have been unrealistic in those limited number of cases.

The PAD assigned the overall Project M&E collection and coordination responsibilities to the State Executive Secretariat (SEE). SEE adapted its existing M&E system (which had been developed by the previous Bank operation Microbacias II) and tailored it to the new project design. In addition, the different implementing sector agencies monitored progress related to their activities, with project technical support to strengthen their capacity and information systems. The Bank's expectation at appraisal was that the DLI would incentivize good M&E and results-based management (PAD, paragraph 19). However, the ICR highlights that the design created incentives for implementing agencies to focus on monitoring of processes and targets, and less on results and outcomes (ICR, paragraph 46). The Project generated some evaluative evidence related to Objective 1 through the IE, but only a few results are presented in the ICR (not all the evaluation questions described in the PAD are addressed in the ICR). Regarding Objective 2, no baseline was collected and the ICR relies on a few complementary M&E studies by implementing agencies, but does not provide much outcome-level evidence.

c. M&E Utilization

By design, DLI influenced Project disbursements and decision-making. In addition, implementing agencies used additional Project indicators for the management and budget planning. Efficiency data was utilized by the technical extension service enterprise to improve decentralized planning. Moreover, the results from the different impact and results studies including the one on the digital inclusion pilot) helped State authorities to



assess and share results with different stakeholders (the Bank, the federal government, and the public).

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The Project was classified as environmental Category B and was not anticipated to generate any significant negative environmental changes. It triggered five environmental and two social safeguards: Environmental Assessment (EA) OP 4.01, Natural Habitats OP 4.04, Forests OP 4.36, Pest Management OP 4.09, and Physical Cultural Resources OP 4.11; Involuntary Resettlement OP/BP 4.12 and Indigenous Peoples OP 4.10. During preparation, Bank safeguards specialists assessed potential environmental and social impacts of the Project and qualified proposed safeguards by the SoSC authorities as satisfactory. During implementation, World Bank environmental and social safeguards policies applied to the entire SWAp EEP expenditures/budget line, with a focus on project activities with the greatest safeguards risks, such as “agricultural production (including agro-processing), water resources management, tertiary rural roads rehabilitation and restoration of agro-ecosystems and degraded forest ecosystems” (PAD, Annex 10).

Environmental Safeguards. The Project promoted environmental conservation and provided training on environmentally friendly agricultural practices. The ICR reports little detail on the management of environmental safeguards during implementation, but states that financed FAPO business proposal activities/value-added arrangements triggered Environmental Assessment and Natural Habitats safeguards, and also Pest Management when involving fruits or vegetable production. Regional technical staff was trained on environmental management and Bank safeguards. In 2015 safeguards compliance was evaluated, concluding that all value-added subprojects complied with “relevant environmental laws, and had planned/implemented mitigation measures to avoid and/or minimize possible environmental impacts from activities” (ICR, paragraph 68). For the works on tertiary rural roads, seven randomly selected roads projects were evaluated. 85 percent were found to have high, 11 percent regular, and 3 percent low environmental sustainability. The ICR (page 25) considers that “compliance with environmental safeguards is judged highly satisfactory”.

Social Safeguards. The Project provided direct financial and technical assistance to 411 indigenous families through eight business plan investments. In its work with indigenous peoples, the Project followed an Indigenous Peoples Planning Framework (IPPF) and reviewed development plans for indigenous territories on an annual basis (continuing the practice from the predecessor project Microbacias II). The State Extension Enterprise adopted its regular municipal-level work plans for technical assistance to the needs of indigenous peoples. Also, according to the ICR, the Project aimed to minimize potential involuntary resettlement by assessing and financing rural roads rehabilitations only in public areas. Potential migration measures were governed by a Resettlement Policy Framework, but no apparent activities are known to have led to involuntary resettlement. The ICR (page 24) considers that compliance with social safeguards as “satisfactory”.



b. Fiduciary Compliance

Financial Management. The Project’s Financial Management (FM) performance and general fiduciary risk were rated low throughout the implementation period and the final Project Implementation Status Report rates FM performance as Satisfactory. There were initial delays in adapting the State’s Physical and Financial Monitoring System to the project context, but the Bank’s FM supervision team received timely and adequate information on financial and physical execution. Independent audit reports were submitted on an annual basis and were all unqualified. A Public Expenditure and Financial Accountability study was conducted, whose results informed the State Secretariat of Planning for its investment portfolio planning. Disbursements were low up to the MTR due to the aforementioned restrictive SWAp disbursement rules and related misunderstandings by implementation agencies. After the MTR restructuring and capacity training to implementation agencies, disbursements increased significantly. Despite these initial delays, the complete loan was disbursed by project completion.

Procurement. Given the long-term engagement of the Bank in the SoSC, procurement capacity was believed to be high at the time of appraisal. However, as mentioned before, the introduction of the SWAp instrument resulted to be more complex than anticipated and led to misunderstandings in implementation agencies. Procurement processes were significantly delayed up to the MTR, but resolved through formal restructuring that allowed for a more simplified budgeting system. This change was assessed through independent audits by the State Court of Accounts and found acceptable. Apart from the initial delays, no significant procurement issues were identified throughout implementation and the final Project Implementation Status Report rates Procurement performance as Satisfactory.

c. Unintended impacts (Positive or Negative)

None

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---



Quality of M&E	Substantial	Substantial	---
Quality of ICR		Substantial	---

12. Lessons

The ICR lists several lessons, particularly focusing on novel instrument adoption. Three of those lessons with a broader application are summarized below with adjusted language:

The introduction of novel, complex project instruments needs to be carefully prepared and continuously monitored, irrespective of previous country engagements and historically demonstrated client capacity. The Bank needs to *a priori* ensure the readiness and commitment of a client to adopt an innovative and complex new lending instrument. Technical and administrative preparedness and understanding of changes at different levels of project execution is key for a smooth transition and effective execution. Depending on the country circumstances, capacity building needs to be regular given leadership transitions and frequent staff turnover.

Demand mobilization for new investment support instruments among target beneficiaries takes time and capacity. Beneficiaries need time and customized training to understand and develop demand-driven investment proposals. Projects benefit from a realistic allocation of financial and technical resources for early dissemination among target groups and continuous local technical support for aspired beneficiaries to avoid initial implementation delays.

The organizational capacity of beneficiary groups is a crucial factor in ensuring effective execution of novel demand-driven investments. Strongly organized beneficiary groups are typically better-equipped and more responsive to new investment opportunities and can build on a higher capacity in mobilizing resources needed to prepare investment proposals.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The structure of the ICR is comprehensive and presents well the complexity of the SWAp. The Theory of Change is clearly explained in the main text and graphically in the Annex. It also makes a good use of summary tables that facilitates understanding of the complex structure of the Project. The content of the ICR demonstrates a good technical knowledge of the large number of different project activities.

Some concepts obvious to the ICR author could have been explained more thoroughly, such as the difference between value-added arrangements for individual existing FAPO and value-added arrangements to create networks of (new) FAPO. The ICR is rich in information, but several details had to be clarified through a follow-



on conversation with the project team. Also, reporting on environmental safeguards could have provided more details on safeguards management in terms of capacity and supervision activities in the different implementation agencies. More details on the government's Rural Competitiveness Program and the alignment of the Project could have been helpful as well.

The arguments presented in the ICR are based on a large amount of Results Framework indicators, although several of them are rather output-oriented. Some outcomes from impact assessments and sector studies are presented, but the ICR could have been strengthened by providing more information on their methodology and presenting additional results (for example as an annex). The ICR candidly identifies and discusses weaknesses in the project design and implementation, such as design issues causing implementation delays, or the unjustified final highly satisfactory rating of the DO. Finally, the lessons are evidence-based, but focus strongly on challenges related to introducing a novel instrument.

a. Quality of ICR Rating
Substantial