



1. Project Data:		Date Posted : 01/24/2002	
PROJ ID: P007780		Appraisal	Actual
Project Name: Agricultural Technology & Land Management	Project Costs (US\$M)	57.8	73.6
Country: Nicaragua	Loan/Credit (US\$M)	44.0	43.4
Sector(s): Board: ENV - Central government administration (60%), Agricultural extension and research (40%)	Cofinancing (US\$M)	4.5	4.1
L/C Number: C2536			
	Board Approval (FY)		94
Partners involved : Swiss Development Corporation	Closing Date	12/31/1998	06/30/2000
Prepared by :	Reviewed by :	Group Manager :	Group:
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2. Project Objectives and Components			
a. Objectives			
"The objectives of the Project are:			
(a) to increase agricultural production by small and medium farmers;			
(b) to develop and transfer sustainable and environmentally sound agricultural technology to farmers; and			
(c) to improve security of land property rights".			
(from the Development Credit Agreement).			
b. Components			
(Figures in brackets are expected costs, as recorded in the Staff Appraisal Report; subcomponents do not add up to Part A and Part B totals because contingencies are excluded.)			
Part A: Agricultural Technology (US\$21.8 million)			
(a) Support to Agricultural Technology Institute (US\$14.3), comprising (i) Technology validation and transfer, including training, which would directly benefit 28,000 farmers; (ii) Soil and water management; (iii) Integrated pest management; (iv) Agriculture research grants; (v) Academic studies;			
(b) Support to Ministry of Agriculture and Environment Institute for Pesticide management (US\$2.3 million);			
(c) Private technical assistance for 6,500 farmers (US\$3.8 million)			
Part B: Land Management (US\$33.6 million)			
(a) National cadastre, for 103,000 km2 (US\$12.9 million);			
(b) Land titling, for 50,000 landholders (US\$14.7 million);			
(c) Land registry, for 50,000 landholders (US\$3.1 million);			
(d) Studies (US\$0.5 million)			
The remaining costs were for the project coordinating unit (US\$2.4 million).			
c. Comments on Project Cost, Financing and Dates			
The actual cost of Part A was US\$30.0 million, 38 percent higher than expected; Part B (US\$35.7 million) was 6 percent higher. The overrun is attributed in the Borrower Completion Report to the cost of extending the Closing Date by two years----a consequence of substantial procurement delays and institutional weaknesses . The addition of a Rural Financial Services Development Pilot increased project costs by a further US\$ 1.0 million.			
3. Achievement of Relevant Objectives:			
The objectives were each highly relevant to the task of increasing and diversifying agricultural outputs and exports, geared mainly to small and medium farmers. Agriculture was the main sector and some 85 percent of the rural population were poor. The project was a valid attempt to boost growth and eradicate poverty after years of civil war and a decade of central planning. It was "a learning opportunity in a difficult environment, with some innovative			

highlights" (Swiss comment).

Objective (a): The ICR contains no data on the aggregate impact of the project on agricultural output, or exports . Estimates of income growth are made for 17 farm models but it is not clear on what sample of farmers this was based, and there was no control group so the project's actual impact is not clear . A weighted average, taking into account each farm model's representativeness, hypothesizes that net on -farm income grew by 67 percent after 4-6 years of technical assistance, from about US\$ 1,500 to US\$2,500.

Objective (b): Under Component Part A(a)(i), technology transfer occurred on 11,094 parcels (compared to the 14,600 contemplated at appraisal), benefiting 45,000 farmers by the end of the project (compared to 28,000 expected); but there is no data on outcomes . Various other extension schemes were supported by the project . With respect to the "massive" program, geared to subsistence farmers working marginal lands, the ICR notes that only 250-300 farmers were actually visited (those who owned demonstration plots), and that the uptake of new technology beyond those reference farmers was "fairly modest" (p. 6). "There is no representative information on productivity gains/impact for the whole program" (p. 6). A separate private extension initiative (Component Part A(c)) reached 15,400 farmers by project end (up from the 6,500 estimated at appraisal). A study conducted independently of the ICR (in 1998 and 2000) found that clients in this fee-for-service extension scheme obtained higher yields (maize, beans, sorghum and coffee) and higher gross margins per unit of land after the project, compared to before the project. But this study did not contain a control group of farmers, did not control either for variations in the use of the new technology, or for variations in regional resource endowments . Component Parts A(a)(ii), A(a)(iii) and A(b) successfully developed user-friendly technologies for controlling soil and water degradation, and reducing pesticide pollution, these innovations being added to the extension package .

Objective (c): The project delivered 28,150 titles (56 percent of the original target). 83 percent of the titles went to "traditional small-farm families", covering an area of 843,000 hectares and directly benefiting 49,600 persons, with indirect benefits for a further 117,800. An econometric study, based on a beneficiary survey of 2,475 randomly-selected properties, found that 68 percent of title recipients deemed their tenure security to have increased . This study found that land registration increased on -farm investment by about US\$320 per year per farm, and increased the return on agricultural activities by 30 percent.

4. Significant Outcomes/Impacts:

54,000 persons (compared to an appraisal target of 1,320) were trained to safely apply pesticide . A law for the management of pesticides and toxic substances was passed .

About 1,000 small/medium farmers had soil and water conservation works, as well as agro -forestry systems, established on farm: this was in addition to what was contemplated at appraisal .

A small pilot operation generated valuable lessons about the design and implementation of rural finance schemes .

Study findings contain lessons for agricultural extension and land administration initiatives in other countries .

5. Significant Shortcomings (including non-compliance with safeguard policies):

The project's design was too complex and Parts A and B were not well integrated . The project was too ambitious given that it was the bank's first rural development project in Nicaragua in twenty years .

The indicative findings of various ancillary studies are not a perfect substitute for sound monitoring and evaluation, the lack of which makes it impossible to quantify aggregate project results . Both in the ICR and in the comments of the Swiss co-financiers it is stated that the projects overall achievements were "modest". Given the cost overrun, the few achievements there were seem to have been dearly bought .

Although, in the private extension scheme, fees for services were low, there was a shortfall in farmer receipts, suggesting that it was a mistake to expect extension agents to collect fees; it may also mean that farmers were not satisfied with the messages provided (p. 7).

Titling under the project was demand-driven rather than based on the more cost-effective and equitable area-based titling proposed at appraisal (p. 13).

The results of the rural finance pilot "were disappointing in terms of the quantity and impact of technical assistance on credit outreach and the sustainability of installed banking facilities " (p. 18)

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Moderately Satisfactory	This rating (which is not provided for

			under the ICR rating scale) is on account of (i) uncertainty about scope of project results and (ii) the fact that results were obtained at a high cost. The significant outcomes referred to in Section 4 save the project from an unsatisfactory rating.
Institutional Dev .:	Substantial	Substantial	
Sustainability :	Likely	Likely	Follow up operations are building on this project's achievements.
Bank Performance :	Satisfactory	Unsatisfactory	Design too complicated; monitoring and evaluation neglected; annual supervision costs averaged US\$149,323, almost three times the LCR average.
Borrower Perf .:	Satisfactory	Satisfactory	This was the first Bank rural development project in twenty years and institutional capacity was weak: borrower did well to cope with onerous project design---which it did not have the experience to question; counterpart funding satisfactory.
Quality of ICR :		Exemplary	

NOTE: ICR rating values flagged with '*' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

Agricultural technology transfer

- Research and extension is best served by a system that allows for competition between diverse service providers (private and public);
- More testing is needed to see if fee for service programs are appropriate for smaller, poorer farmers.

Land management

- Land titles need to be backed up by mechanisms for resolving tenure conflicts, including recognition of indigenous land rights;
- Individual titling on demand is very costly and less equitable compared to area -based, systematic titling;
- Cadastre, titling, and registry are complementary services that should be decentralized to the departments.

8. Assessment Recommended? ☒ Yes ☐ No

Why? Innovative project in a "new" country.

9. Comments on Quality of ICR:

Faced with the lack of data from project monitoring, the author makes skillful use of the findings from ancillary studies. The multiple facets of this most complex of projects are clearly explained. The lessons section is extremely thorough. One quibble: Annex 1 is confusing because it places Part A under Outcome/Impact Indicators and Part B under Output Indicators. There are also some inconsistencies between the numbers in Annex 1 and those reported in the text.