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MEMORANDUM AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE EXECUTIVE DIRECTORS
ON A
PROPOSED LOAN
IN AN AMOUNT EQUIVALENT TO US\$78.2 MILLION
TO THE
REPUBLIC OF COLOMBIA
FOR A
SMALL-SCALE IRRIGATION PROJECT

JULY 11, 1989

CURRENCY AND EQUIVALENT UNITS

Currency Unit - Colombian Peso (Col\$)

US\$1.00 = Col\$ 382.58
US\$0.00306 = Col\$ 382.58
(7/11/89)

WEIGHTS AND MEASURES

Metric System

ABBREVIATIONS

BOR	- Banco de la República (Bank of the Republic (Central Bank))
CAJA	- Caja de Crédito Agrario, Industrial y Minero (Caja Agraria) (Agricultural, Industrial and Mining Credit Bank)
DNP	- Departamento Nacional de Planeación (National Planning Department)
DRI	- Desarrollo Rural Integrado (Integrated Rural Development)
FFAP	- Fondo Financiero Agropecuario (Agricultural Financing Fund)
HIMAT	- Instituto Colombiano de Hidrología, Meteorología y Adecuación de Tierras (Colombian Institute for Hydrology, Meteorology and Land Improvement)
ICA	- Instituto Colombiano Agropecuario (Colombian Agricultural Institute)
INCORA	- Instituto Colombiano de la Reforma Agraria (Colombian Institute for Agrarian Reform)
INDERENA	- Instituto Nacional de Recursos Naturales Renovables (National Institute for Renewable Natural Resources)
PNR	- Plan Nacional de Rehabilitación (National Rehabilitation Plan)
SENA	- Servicio Nacional de Aprendizaje (National Apprenticeship Service)

FISCAL YEAR

January 1 - December 31

COLOMBIASMALL-SCALE IRRIGATION PROJECTLoan and Project Summary

Borrower: Republic of Colombia

Executing Agency: Instituto Colombiano de Hidrología, Meteorología y Adecuación de Tierras (HIMAT)

Beneficiaries: (i) Approximately 43,000 farm families; and
(ii) HIMAT;

Amount: US\$78.2 million equivalent

Terms: Seventeen years, including five years of grace, at the Bank's standard variable interest rate.

Financing Plan:

Government	US\$43.4 million
Small farmers	US\$33.5 million
Financial Intermediaries	US\$40.9 million
IBRD	<u>US\$78.2 million</u>
Total	US\$196.0 million *****

Economic Rate of Return: 23%

Staff Appraisal Report : Report No. 7624-CO

Map: No. 21413

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**MEMORANDUM AND RECOMMENDATION OF THE PRESIDENT
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TO THE EXECUTIVE DIRECTORS
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TO THE REPUBLIC OF COLOMBIA
FOR A
SMALL-SCALE IRRIGATION PROJECT**

1. The following memorandum and recommendation on a proposed loan to the Republic of Colombia for US\$78.2 million equivalent is submitted for approval. The proposed loan, which would be repayable in 17 years, including five years of grace, at the Bank's standard variable interest rate, would help to finance a small-scale irrigation project.

2. Background. About 600,000 ha are presently under irrigation in Colombia. This is only about 17% of the area that can be technically irrigated, less than 1% of the total land area and about 2% of the area presently under agricultural use. About 80% of the existing irrigation infrastructure (500,000 ha) was developed and is managed and maintained by the private sector, serving predominantly large farms. Public sector investment in irrigation began in the 1940s and expanded to cover about 275,000 ha in 25 districts, primarily during the Agrarian Reform push of the 1960s. However, many of the irrigation systems were not completed due to the reduced budgetary appropriations for the Agrarian Reform program in the 1970s. This resulted in inadequate water supply, inadequate maintenance and cost recovery shortfalls. This, in turn, led to the deterioration of the irrigation districts, so that only about 40% of the areas in the districts were receiving water by the late 1970s and a large proportion of the irrigated areas were underutilized, being used for low value or subsistence crops or for livestock.

3. With domestic and external demand projections for foodstuffs by the year 2000 indicating that between 29 and 39 million ha would be required to be in agricultural production by that year to meet the additional demand, compared with the 27 million ha now under production, the Government, with Bank support (Irrigation Rehabilitation I and II Loans), initiated a program to complete and rehabilitate the 25 irrigation/drainage districts and to improve cost recovery. This approach together with increased emphasis on research to increase productivity through agricultural intensification and improved yields, rather than through land development, was considered the most efficient way to meet the projected demand and increase rural incomes. Also, starting in the mid-1980s, the Government began to assess the technical and economic feasibility of small-scale, gravity-type irrigation schemes to raise the productivity of small farmers, of which there are some 1.8 million in Colombia with less than 20 ha each. To date, about 17,000 ha have been developed through small-scale irrigation schemes, of which almost 4,200 ha have been financed by the Bank as part of a 8,000 ha pilot component included in the Bank's Irrigation Rehabilitation II Project. Evaluations of such schemes have been positive. The schemes have: (a) been effectively planned and constructed; (b) low investment costs (US\$1,200 per ha); (c) significantly increased productivity and income of the poorer segments of the Colombian farmer population; (d) reduced crop and market

risk associated with agroclimatic conditions and cyclical production patterns; and (e) promoted community involvement in their construction, operation and maintenance. Implementation problems identified, i.e., need for training in optimal water usage, improper utilization of some on-farm irrigation equipment and the insufficiency of technical assistance are being tackled by HIMAT and are specifically addressed under the proposed project. HIMAT, the main implementing agency for the proposed project, has nationwide responsibility for public sector irrigation and drainage in Colombia. HIMAT is an efficient institution with a well-deserved reputation for sound engineering. It is well managed and has a relatively small but well motivated staff. It has been adequately funded, mainly through budget transfers and external borrowing. Inadequate recovery of irrigation investments and operating costs is one of the weaknesses which is being addressed under an ongoing Bank loan to HIMAT and would also be addressed under the proposed project. Other areas which need strengthening in connection with the small-scale irrigation program are staffing, monitoring and evaluation, and interinstitutional coordination.

4. Rationale for Bank Involvement. The proposed project supports the Bank's dual strategy for the agricultural sector of promoting efficient growth, and alleviating rural poverty. Specifically, the project would build on results of a recently completed irrigation subsector analysis, by helping to ensure that: (a) sound and efficiency-based criteria are established and applied for the selection of areas to receive irrigation infrastructure; (b) measures are taken to achieve greater involvement of community in the construction, financing, operation and maintenance of irrigation schemes; (c) continued attention is given to improving cost recovery and to rationalizing public sector outlays in irrigation; and (d) environmentally sound methods are employed in the use of water resources and the introduction of irrigated agricultural practices onto small farms. It would also help to ensure the sound development of the environmentally fragile La Mojana area for agricultural purposes.

5. Project Objectives. The major objectives of the project would be to: (a) increase agricultural productivity and cropping intensity and therefore rural incomes of about 43,000 small-scale farmers; (b) reduce market risks by smoothing out production throughout the year; (c) develop the technological base for the future development of La Mojana Region; (d) improve cost recovery from public sector investment in irrigation and thereby reduce the subsidy to water users for fiscal as well as for resource allocation purposes; and (e) strengthen community participation in the construction, financing, operation and management of the irrigation schemes.

6. Project Description. The project would provide supplementary irrigation for about 43,000 farmers in about 60,000 ha over a six-year period by financing: (a) the off-farm irrigation infrastructure and road repair investments needed to establish some 850 small-scale irrigation schemes, each ranging between 20 and 300 ha in size, with each beneficiary receiving irrigation on an average of 1.4 ha; (b) the on-farm irrigation infrastructure and the incremental on-farm agricultural investment required to efficiently use irrigation; this would be financed through credit provided by local sources; (c) technology improvement and transfer comprising: (i) applied field research by the Colombian Agricultural Institute (ICA) for the validation of technological packages for

irrigation; (ii) incremental extension services by Caja Agraria and other extension agencies; and (iii) community training programs in operating and maintaining the irrigation schemes; (d) an institutional strengthening program for HIMAT, Caja Agraria, the Colombian Institute for Agraria Reform (INCORA), ICA, the National Apprenticeship Service (SENA) and the National Institute for Renewable Natural Resources (INDERENA) which would comprise: (i) 42 man/months of consultant services for organization and management, community support and monitoring and evaluation for HIMAT; (ii) local and external training for staff of HIMAT and the other agencies; and (iii) vehicles and equipment for HIMAT; (e) soil conservation activities in the proposed project areas and INDERENA's incremental operating costs; (f) studies, consultant services and field trials to ascertain the agricultural potential of La Mojana area, and the type of agriculture that could be developed while avoiding damage to the environment. The total cost of the project is estimated at US\$196.0 million equivalent, of which the Bank would finance US\$78.2 million (40%), equivalent to the foreign exchange component. A breakdown of costs and the financing plan are shown in Schedule A. Amounts and methods of procurement and of disbursements, together with the disbursement schedule are shown in Schedule B. A timetable of key project processing events and the status of Bank group operations in Colombia are given in Schedules C and D respectively. A map is attached. The Staff Appraisal Report No. 7624-CO dated July 11, 1989, is also attached.

7. Actions Agreed. During negotiations, assurances were obtained from the Government in regard to ensuring the availability of credit from Caja Agraria and the Agricultural Financing Fund (FFAP) for beneficiaries of the irrigation schemes. It was agreed that an adverse change in present agricultural interest rate policy would be a condition of default. Assurances were also obtained that HIMAT would: (c) adopt and use for the duration of the project the criteria to be applied for the selection of irrigation subprojects and for road repair, including accessibility of the areas for the purposes of execution and supervision; (d) enter into a Road Maintenance Agreement with the Municipalities where roads are to be improved or repaired; (e) submit by September 30, 1989 and December 31, 1989 final terms of reference satisfactory to the Bank for project evaluation and institutional development consultants, respectively, and employ the consultants by March 31, 1990; and (f) submit to the Bank annual work and operational training programs and progress reports, and bi-annual project evaluation reports. Conditions of effectiveness would be that: (a) the Borrower has entered into a Subsidiary Loan Agreement with HIMAT, satisfactory to the Bank; (b) HIMAT submits to the Bank final contractual agreements and letters of understanding between HIMAT and the implementing and extension agencies; and (c) HIMAT has formally approved the Manual establishing the technical criteria for selection of subprojects and cost recovery policies and mechanisms, i.e., full recovery of operation and maintenance (O&M) irrigation costs and of on-farm investment costs, and the recovery of at least 20% of off-farm irrigation infrastructure costs.

8. Benefits. The major benefits of the project would be of three types. First, the project would help increase incomes and reduce crop and price fluctuations for about 43,000 small farmers. Second, the project would expand agricultural production of primarily food crops and some export and import-substitution commodities and increase crop

diversification into higher value crops. Third, the project would result in the reduction of public sector subsidies for irrigation and improve resource allocation. The expected ERR for the project would be 23%.

9. Risks. The economic risk of the project appears to be low. The main risk would a slower-than-expected transition towards more intensive land use if satisfactory levels of technical assistance are not achieved. The extension and research component under the project should mitigate this risk. Likewise the availability of credit could be a risk. However, the risk would be minimized by the very small size of the credit requirements in relation to total agricultural credit, and by the strengthening of extension services under the project. A secondary risk relates to the possibility that the selection of areas and individuals would be biased in favor of larger farmers in view of the expected high profitability of small-scale irrigation. This risk would be minimized through the regular supervision of the application of the agreed selection criteria.

10. Recommendation. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank and recommend that the Executive Directors approve the proposed loan.

Barber B. Conable
President

Attachments

Washington, DC
July 11, 1989

Schedule A

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

ESTIMATED COSTS AND FINANCING PLAN

<u>Estimated Costs: a/</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	----- (US\$ million) -----		
Off-Farm Irrigation			
Infrastructure	53.1	39.1	92.2
On-Farm Investments	32.0	15.1	47.1
Technology Transfer	4.8	0.6	5.4
Institutional Development	3.2	2.9	6.1
Environment	0.8	0.2	1.0
La Mojana Pilot Project	<u>1.1</u>	<u>3.2</u>	<u>4.3</u>
Base Cost	95.0	61.1	156.1
Physical Contingencies	5.7	4.8	10.5
Price Contingencies	<u>17.1</u>	<u>12.3</u>	<u>29.4</u>
Total Project Costs	<u>117.8</u>	<u>78.2</u>	<u>196.0</u>
	=====	=====	=====

a/ Includes US\$3.1 million in taxes.

<u>Financing Plan:</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	----- (US\$ million) -----		
Government	43.4	-	43.4
Beneficiaries	33.5	-	33.5
Financial Intermediaries	40.9	-	40.9
Bank	<u>-</u>	<u>78.2</u>	<u>78.2</u>
Total	<u>117.8</u>	<u>78.2</u>	<u>196.0</u>
	=====	=====	=====

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

PROCUREMENT METHOD AND DISBURSEMENTS

Project Element	Procurement Method				Total Cost
	ICB	LCB	Other	N.A.	
Civil Works		91.5 (53.1)	21.8 ^{1/} (12.0) ^{-/}		113.3 (65.1)
Equipment	0.5 (0.2)	0.2 (0.1)	0.1 (-) ^{1/}		0.8 (0.3)
Consultant Services			11.6 ^{-/} (6.7)		11.6 (6.7)
Training				1.9 (0.9)	1.9 (0.9)
On-Farm Investments			56.9 ^{2/} (-) ^{-/}		56.9 (-)
Technology Transfer			6.2 ^{3/} (2.5) ^{-/}		6.2 (2.5)
Incremental Operating Costs				5.3 (2.7)	5.3 (2.7)
TOTAL	0.5 (0.2)	91.7 (53.2)	96.6 (21.2)	7.2 (3.6)	196.0 (78.2)

Note: Figures in parentheses are the respective amounts financed by the Bank.

- 1/ Civil work contracts costing less than US\$70,000 equivalent each and equipment valued at less than US\$50,000 equivalent would be procured on basis of price quotations from at least three qualified local contractors/suppliers.
- 2/ Procurement under the credit component would be in accordance with normal commercial practice.
- 3/ Negotiated contracts would be entered into with Government agencies responsible for providing various forms of specialized technical assistance.

Disbursements

	Amount (US\$ million)	<u>I</u>
Off-Farm Irrigation Infrastructure	65.5	55% of civil works and 60% of consultants expenditures
Technology Transfer	2.5	90% of extension expenditures and 60% of research expenditures
Institutional Development	3.2	100% of foreign, 80% of local for vehicles and equipment, and 60% of other local expenditures
La Mojana Pilot Project	3.0	100% of foreign, 60% of local consultants, and 55% of civil works expenditures
Unallocated	4.0	

Estimated Bank Disbursements:

	Bank Fiscal Year							
	90	91	92	93	94	95	96	97
	-----US\$ million-----							
Annual	4.1	3.2	7.8	12.6	11.7	16.4	14.8	7.6
Cummulative	4.1	7.3	15.1	27.7	39.4	55.8	70.6	78.2

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

Timetable of Key Project Processing Events

(a) Time taken to prepare:	Six Months
(b) Prepared by:	HIMAT with Bank assistance
(c) First Bank mission:	June 27, 1988
(d) Appraisal mission departure:	November 21, 1988
(e) Negotiations:	May 22-26, 1989
(f) Planned Date of Effectiveness:	December 15, 1989

COLOMBIA
SMALL-SCALE IRRIGATION PROJECT

STATUS OF BANK OPERATIONS

A. STATEMENT OF BANK LOANS AND IDA CREDITS IN COLOMBIA (as of March 31, 1989)

Loan or Credit Number	Fiscal Year	Borrower	Purpose	Amount (less cancellations)		
				Disbursed Bank	Undis- bursed IDA	Total
				(In millions of U.S. dollars)		
92 fully disbursed loans and one IDA credit				2,839.3	23.5 1/	--
1593	1978	Zona Franca	Ind. Export	14.7	0.1	13.97
1725	1979	ISA	Power	72.0	0.03	71.97
1953	1981	EPM	Power	85.0	38.8	46.2
1996	1981	HIMAT	Irrigation	34.3	0.1	34.2
1999	1981	Corelca	Power	34.2	4.1	30.1
2008	1981	EEEE	Power	359.0	6.6	352.4
2090	1982	FNC	Railways	30.0	1.0	29.0
2121	1982	Fondo Vial	Hihgways	149.6	6.5	143.1
2174	1982	Govt.	Rural Development	53.0	26.7	26.3
2192	1982	Min.Education	Rural Education	14.1	2.0	12.1
2303	1983	ICA	Agricultural Research	63.4	19.4	44.0
2349	1983	Carbocol	Coal Exploration	9.5	4.6	4.9
2449	1984	EPM	Power & Water Supply	164.5	118.9	45.6
2453	1984	Fedecafe	Agric. diversification	50.0	11.3	38.7
2464	1984	B.de la Rep.	Industrial credit	40.0	1.2	38.8
2470	1984	EMC	Water Supply	18.5	11.0	7.5
2476	1984	Ecopetrol	Petroleum	130.0	23.1	106.9
2477	1984	B.de la Rep.	Development Banking	90.0	24.3	65.7
2512	1985	EAAB	Water Supply	129.0	88.5	40.5
2551	1985	Govt.	Tr.Pol &Exp.Divers.	300.0	0.5	299.5
2611	1985	Govt.	Health Services	36.5	29.3	7.2
2634	1985	EEEE	Power	171.0	152.2	18.8
2635	1985	Colpuertos	Port Rehabilitation	42.8	29.9	12.9
2637	1985	EPM Barrqlla	Water Supply	24.0	11.7	12.3

1/ Includes exchange adjustment of US\$4.0 million.

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

STATEMENT OF BANK LOANS AND IDA CREDITS (as of March 31, 1989) --

Loan or Credit Number	Fiscal Year	Borrower	Purpose	Amount (less cancellations)		
				Disbursed Bank	Undis- bursed IDA	Total
<u>(In millions of U.S. dollars)</u>						
2667	1986	HIMAT	Irrigation	114.0	92.6	21.4
2668	1986	Cavecinales	Rural Transport	62.0	26.3	35.7
2677	1986	Govt	Tr. & Agriculture Policy	250.0	1.9	248.1
2829	1987	Fondo Vial	II Highway	180.3	166.9	13.4
2889	1988	Govt	Power Sector	300.0	150.0	150.0
2909	1988	Caja Agraria	Caja Agraria	15.0	13.0	2.0
2961	1988	BCH	Water Supply Sector	150.0	150.0	--
3010	1988	Govt	II Primary Education	100.0	100.0	--
3025	1989	B.de la Rep.	V Sm/Medium Sc. Enterp.	80.0	80.0	--
TOTAL				6,205.7	23.5	
Of which has been repaid				<u>1,809.9</u>	<u>7.6</u>	
Amount sold 51.0				-		
Of which has been repaid				<u>51.0</u>		
Total now outstanding (Exchange Adjustment B-Loans)				4,344.8 .4	15.9	
Total now held by Bank and IDA				<u>4,344.8</u>	<u>15.9</u>	
Total undisbursed						<u>1,392.5</u>

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

B. STATEMENT OF IFC INVESTMENTS (as of March 31, 1989)

Fiscal Yr	Obligor	Type of Business	Loan	Equity	Total
(In millions of U.S. dollars)					
1959	Laminas Caribe	Fireboard	0.50		0.50
1960/65	Ind.Al.Noel	Food&Food Proc.	1.98	0.08	2.06
1961	Envases Col.	Metal Cans	0.70		0.70
1961/68	Morfeo Prod.	Home Furn.	0.08	0.09	0.17
1961	Electromanuf.	Electrical Eq.	0.50		0.50
1962/85	Corp.Fin.Col	Develp.Finance	6.00	2.02	8.02
62/63/85	Corp.Fin.Nac.	Develp.Finance	6.00	2.04	8.04
1963/67	Comp.Col.	Textiles/Fibres	1.98	0.15	2.13
68/69	de Tejidos				
1964/70	CorpFinCaldas	Develp.Finance		0.81	0.81
1964/68	Forjas de Col.	Iron & Steel		1.27	1.27
1966	Almaviva	Warehousing	1.00		1.00
1966	Ind.Ganadera	Livestock	1.00	0.58	1.58
67/70/74	Enka de Col	Textiles/Fibres	58.31	2.61	60.92
85/86/87					
1969	CoDesar Hoteles	Tourism		0.01	0.01
1969/73	Corp.Fin Norte	Dev. Finance		0.45	0.45
1969/85	CorpFin Valle	Dev. Finance	6.00	0.43	6.43
1970	PromHotTurMed.	Tourism	0.23	0.11	0.34
1970/77	Pro Hoteles	Tourism	0.80	0.24	1.04
1973/75	CorpAhorro/Vda.	Money/CapMrkt.		0.46	0.46
1974	Cemts.Boyaca	Cement & Const.	1.50		1.50
1974	Cemts.Caribe	Cement & Const.	3.60		3.60

COLOMBIA

SMALL-SCALE IRRIGATION PROJECT

B. STATEMENT OF IFC INVESTMENTS (as of March 31, 1989)

Fiscal Yr	Obligor	Type of Business	Loan	Equity	Total
(In millions of U.S. dollars)					
1976	MineraLasBrisas	Mining	asbestos 6.00		6.00
1977	Promotora de Gasoductos de la Costa Atlantica	Utilities	-Gas 13.00	2.00	15.00
1977/80	Colclinker	Cement	0.49	2.24	2.73
81/85/87	LeasingBolivar	Equipment	Lsg. 14.00	0.20	14.20
1983	Frigor.Col	Cold Storage	1.00	0.54	1.54
1981/82	Petrocol	Petro chem	12.15	3.86	16.01
1984/87	Carb.Caribe	Energy	14.78		14.78
1984	Cem.Rio Claro	Cement	22.47	5.00	27.47
1986	A.Ban Fdo.Expl.	Energy		5.00	5.00
1987	Prod.der.Sal	Chemicals	6.00	1.18	7.18
1987	PromGasoducto	Chemicals		0.04	0.04
1988	Corp.Fin Valle	Dev. Finance		2.28	2.28
1989	Corp.Fin Valle	Dev. Finance	5.00	2.50	7.50
Total Gross Commitments			185.08	36.19	221.27
Less cancellations, termina- tions, repayments and sales			<u>119.05</u>	<u>14.19</u>	<u>133.24</u>
Total commitments now held/IFC			66.02	22.01	88.03
Total undisbursed (including participants)			<u>40.70</u>	<u>7.23</u>	<u>47.93</u>

