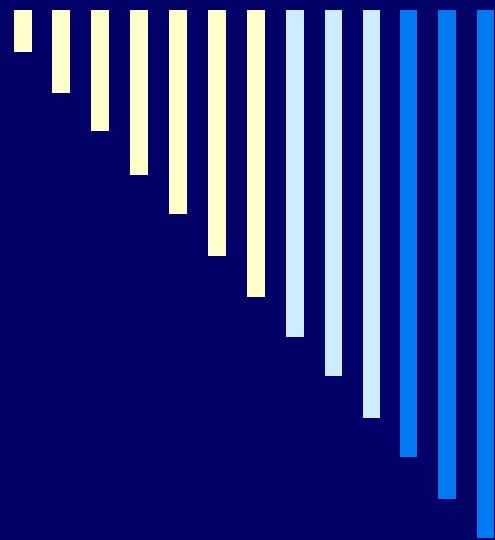
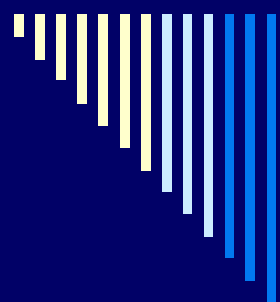




PES experiences in Latin America

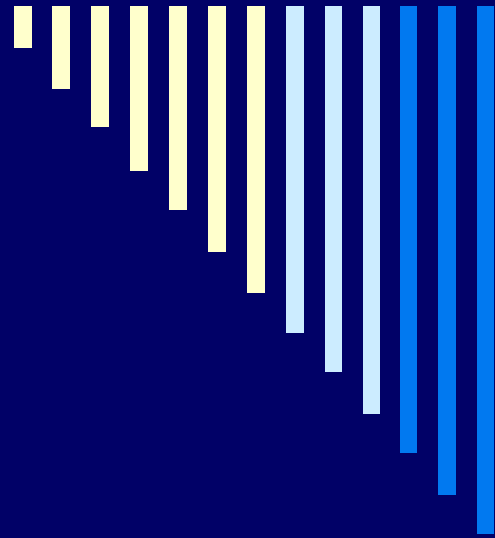
**Marta Echavarria
ecodecisión**

Sofia, 19 & 20 October 2005



Colombia

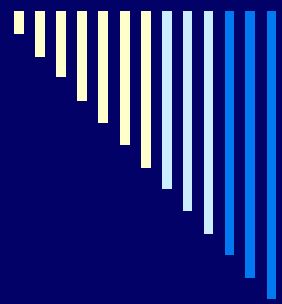




Water User Associations in the Cauca Valley Colombia

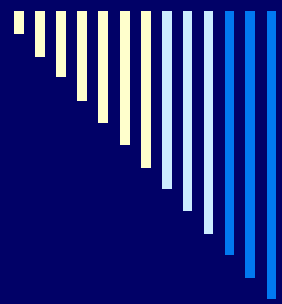






Cauca Valley

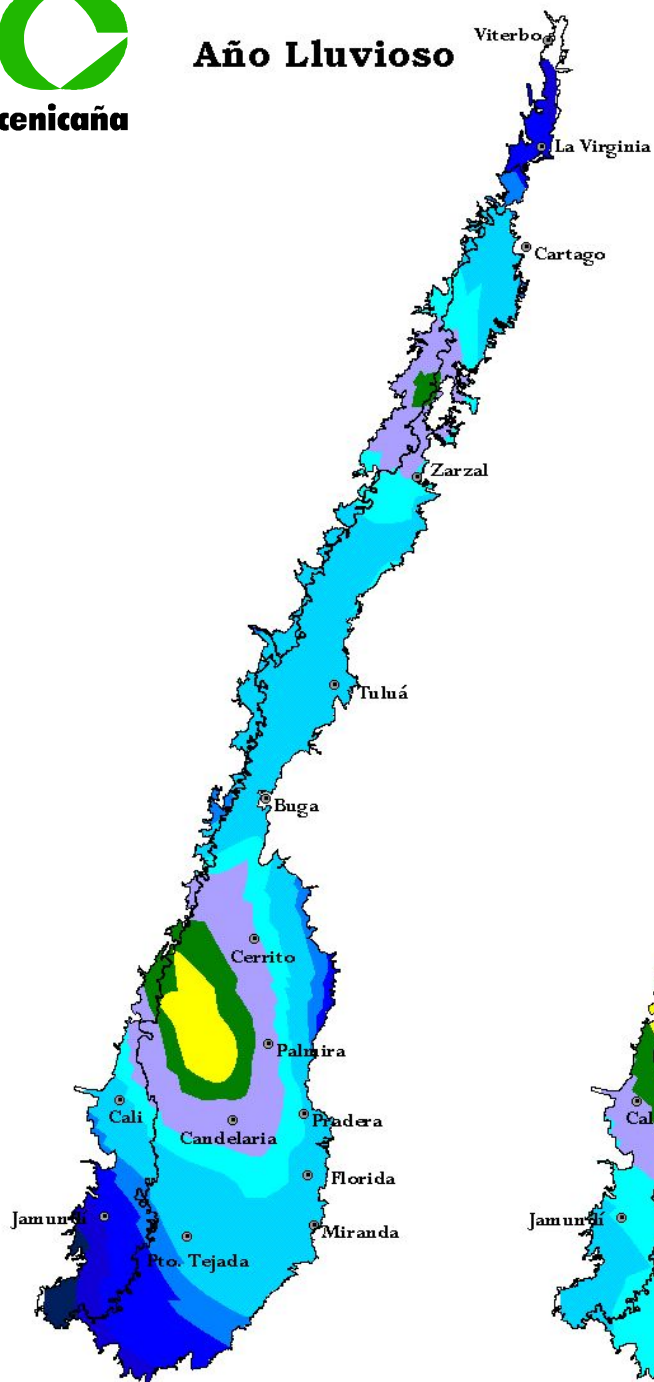
- ❑ Inter-andean valley of volcanic soils
- ❑ Considered the most fertile agricultural land in the country
- ❑ 1,000 m.a.s.l
- ❑ Over 200,000 has in sugar cane
- ❑ Heavily populated >1,3 million people



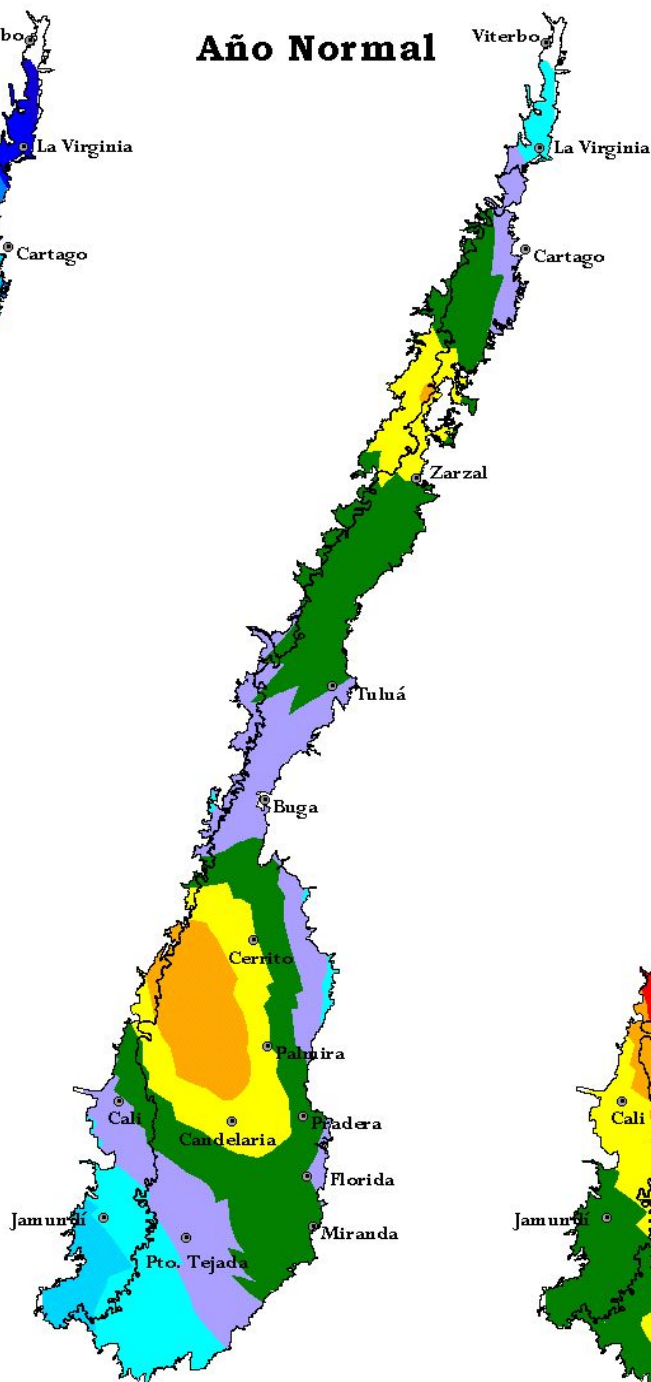
Natural Resources Management Pioneer

- ❑ 1959 created a development corporation
- ❑ Established watershed management areas throughout the Cauca upper watershed
- ❑ Began to develop management plans
- ❑ Pioneered participatory planning processes

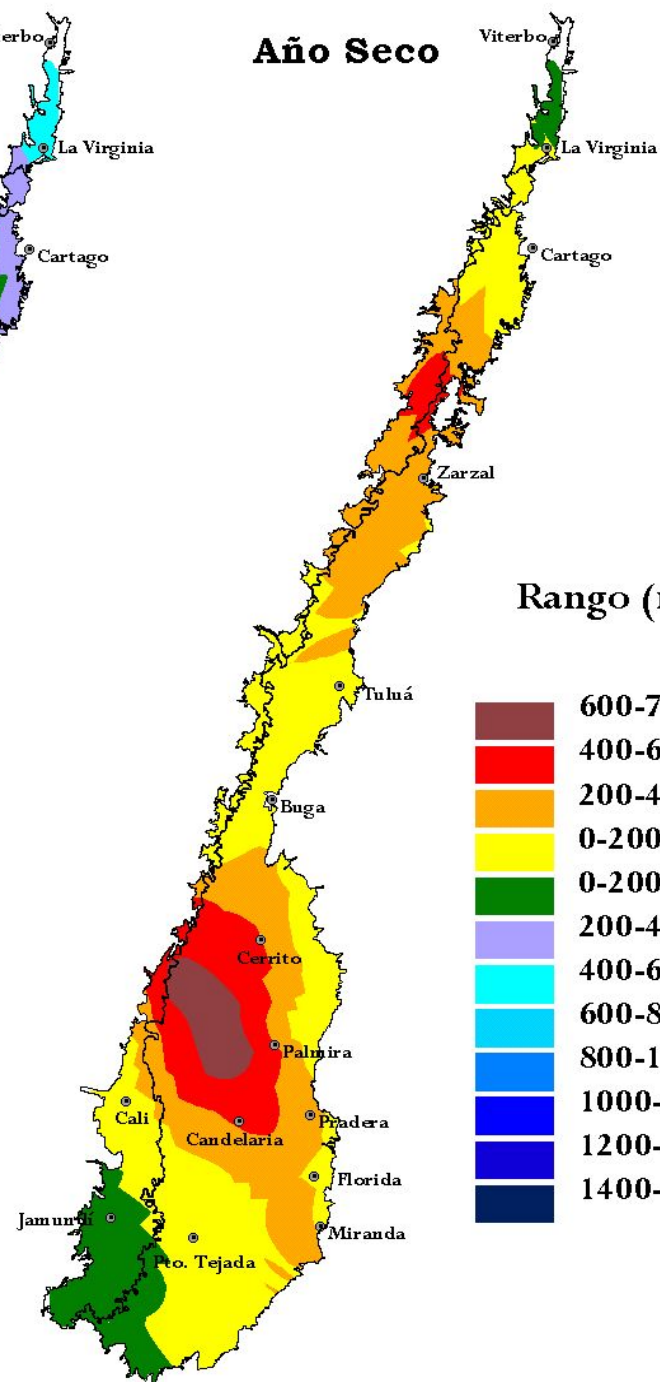
Año Lluvioso



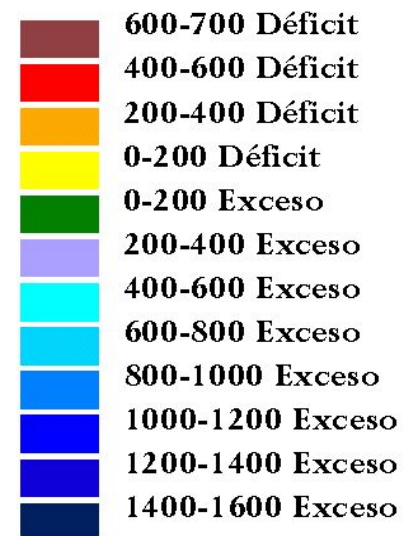
Año Normal

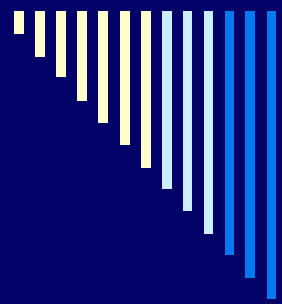


Año Seco



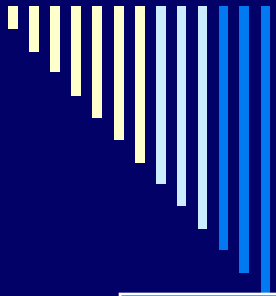
Rango (mm)





Development of the Associations

- ❑ 1980's: First association (Asoguabas) created
- ❑ 1980's: Asocaña finances a watershed protection project in Desbaratado river
- ❑ 1990: Asocaña creates an Environmental Management Department
- ❑ 1992: Asodesbaratado created with support of Asocaña
- ❑ 1990's: Asobolo and others created and "Corpocuencas" established as a regional government initiative with support from private sector
- ❑ Development of Watershed Action Plans with CVC, sugar mills, agricultural users, etc.



Institutional Structure

Farming Users
(sugar cane,
sorgum,etc.)

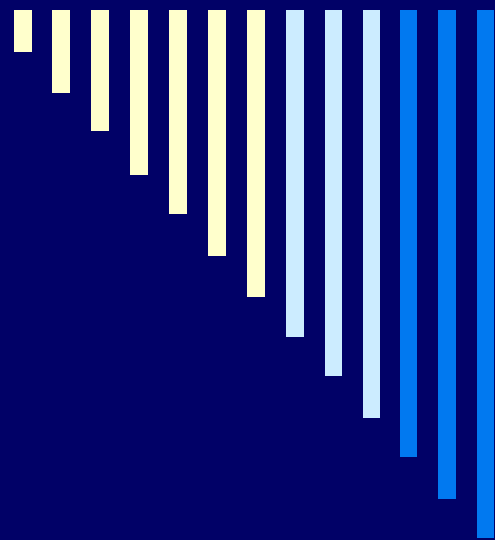
Voluntary Fee
US\$ 1-2/ L/S/Trim.

**WATERSHED
PROJECTS**

**General
Assembly**

**Watershed Mangt. Plan
Environmental Authority**

Board



TYPE OF ACTIVITIES

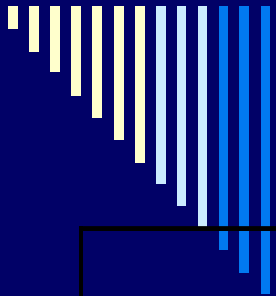
Land Acquisition

Erosion Control

Water Source Protection

Environmental Education

Community Development

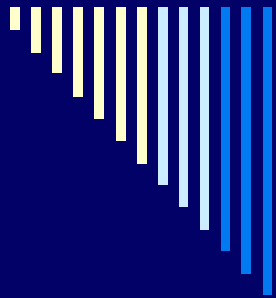


Funds raised

Asociación	Area (Has)	Población beneficiada (miles)	Número de afiliados	Inversión en la cuenca en millones
Asoamaime*	55.500	16.500	124	120
Asobolo*	19.875	3.250	144	90
Asodes*	19.920	1.620	90	40
Asofraile*	28.015	3.750	200	28
Asoguabas*	17.000	630	452	40
Asojamundi	61.000	12.400	40	48
Asurnima*	12.120	3.200	21	45
Corp. Río Guadalajara*	13.000	30.000	160	27
Corpopalo	92.000	12.308	44	90
F. Ríos Tuluá Morales*	103.000	21.000	309	74
Fund. Río Bugalagrande*	80.000	1.765	306	40
Fund. Río Riofrio	28.000	8.000	22	32
TOTAL	529.430	114.423	1.912	674

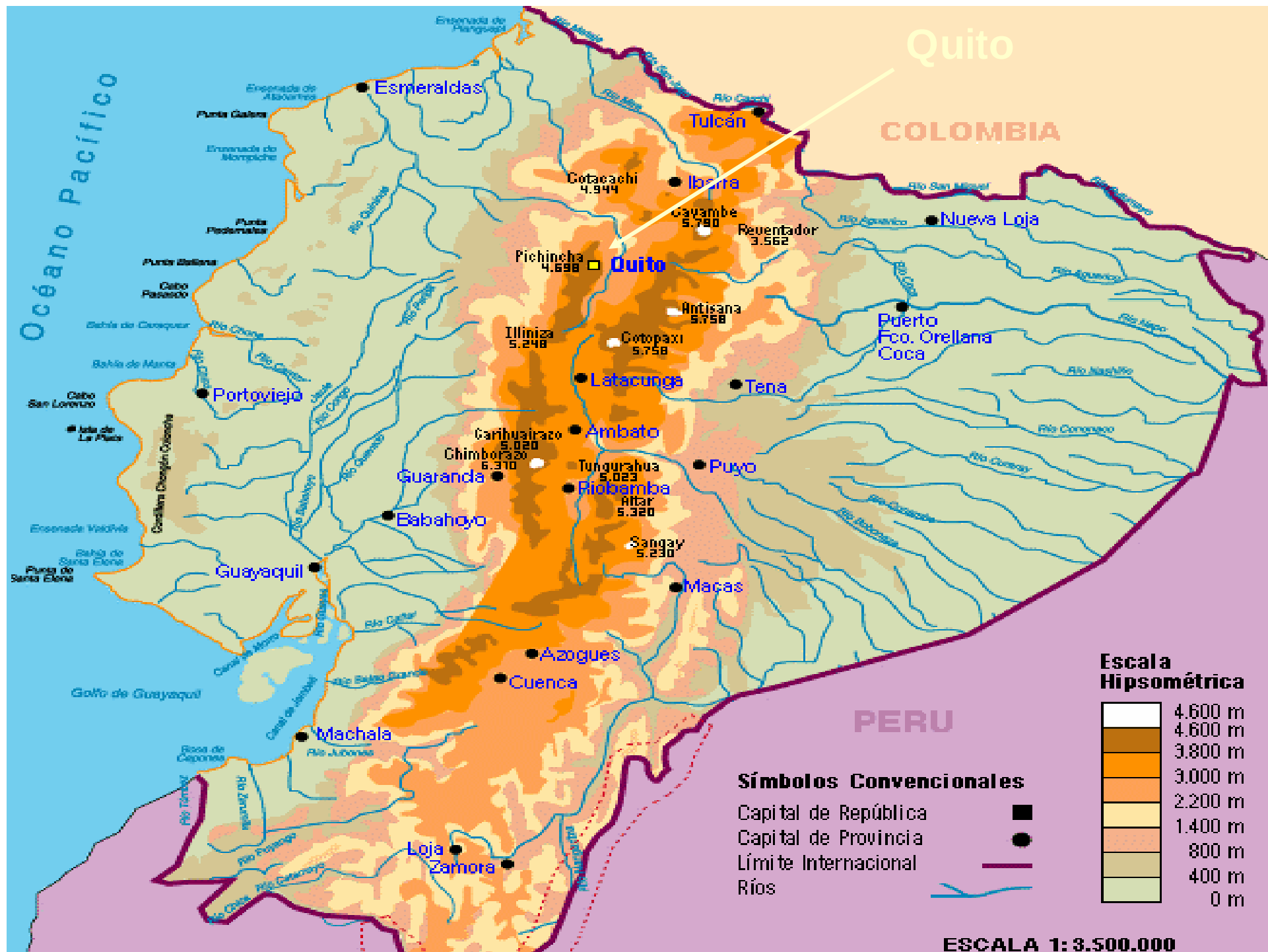
Source: Corpocuenas. 2001.

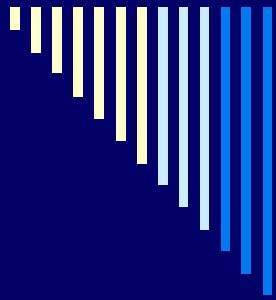
>US\$250,000 in 15 yrs.



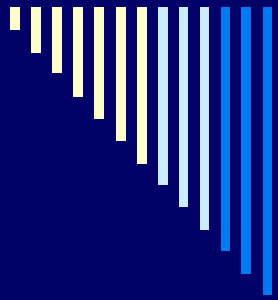
Ecuador





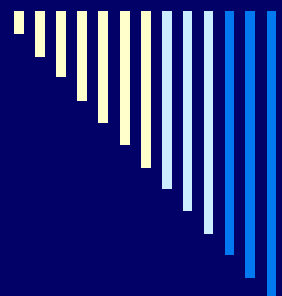


Case of Quito Watershed Fund Ecuador



CONTEXT

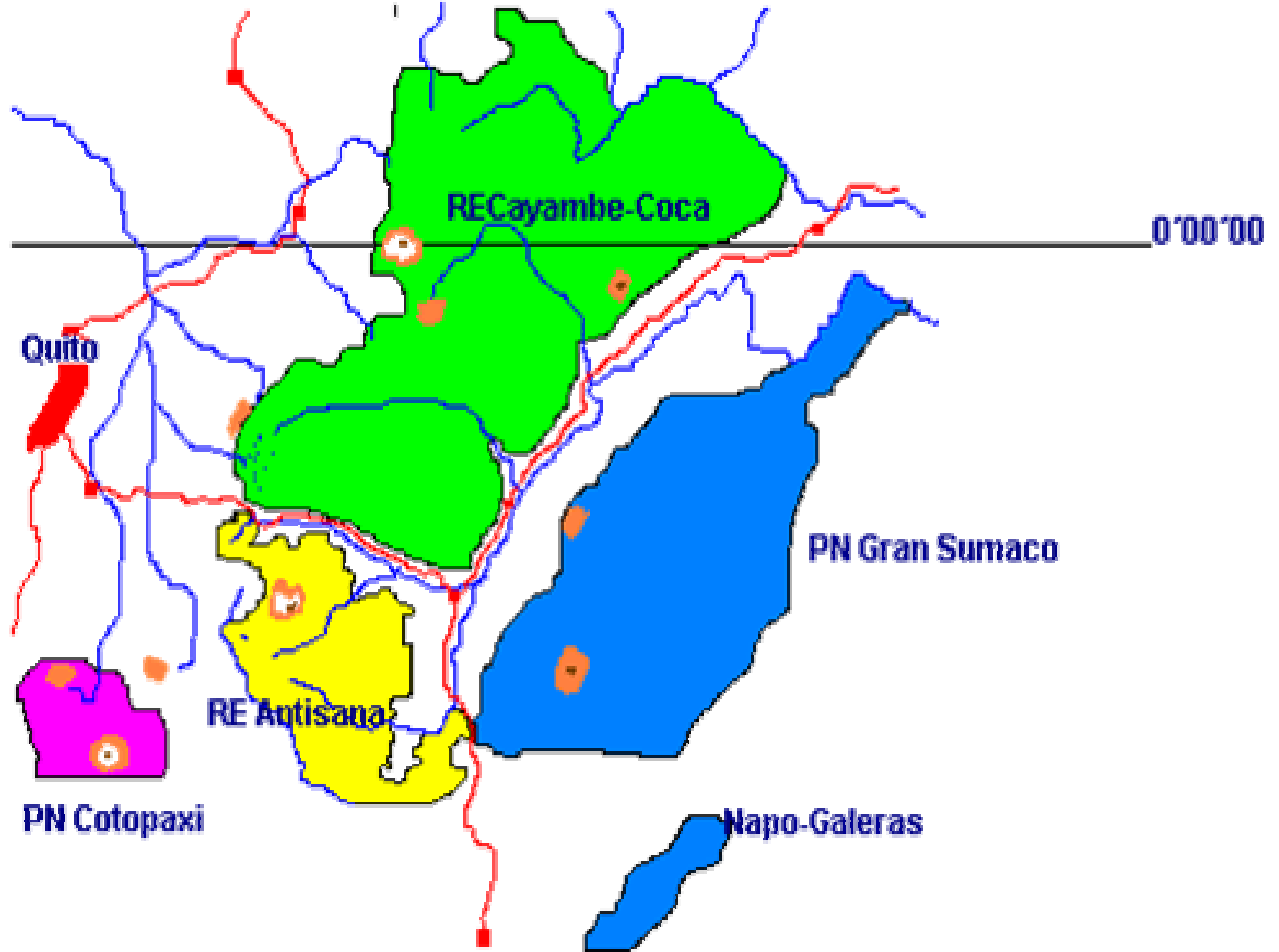
- ❑ Quito's population exceeds 1,5M people
- ❑ Current water consumption around 150 million m³ per year
- ❑ Recent construction of two major projects to insure supply beyond 2020
- ❑ Water is being diverted from other watersheds and in particular from National Protected Areas

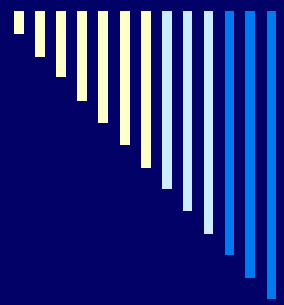


QUITO's WATER SOURCES

- RESERVA ECOLOGICA ANTISANA
- RESERVA ECOLOGICA CAYAMBE COCA
- PARQUE NACIONAL COTOPAXI - PITA RIVER
- RESERVA ECOLOGICA ILINIZAS - SAN PEDRO RIVER
- BOSQUE PROTECTOR MINDO-NAMBILLO-CINTO, MINDO & PICHAN RIVERS

CONDOR BIORESERVE

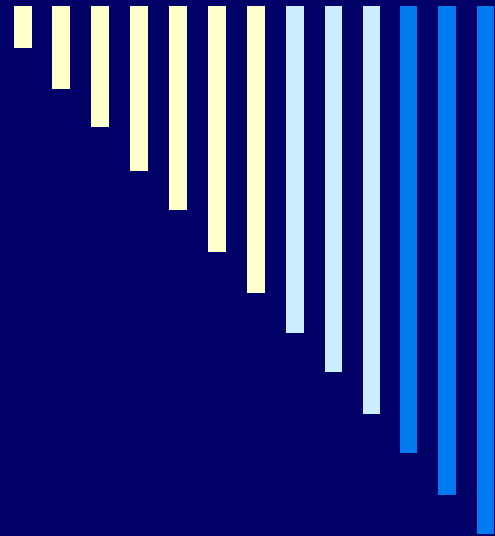




Ecological Reserves Cayambe-Coca and Antisana: Genuine Water Factories

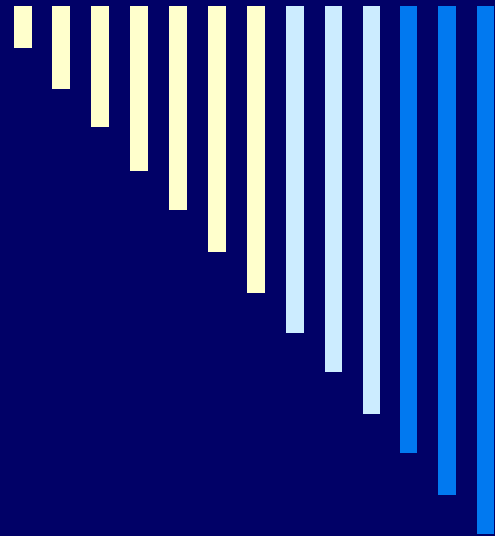
- ❑ Storage and regulation of glacial water
- ❑ Extraordinary hydrological capacity of Andean grasslands (*páramo*)
- ❑ Forests/vegetation also play a key role
- ❑ All of these ecosystems help maintain the purity and quantity of water

THREATS

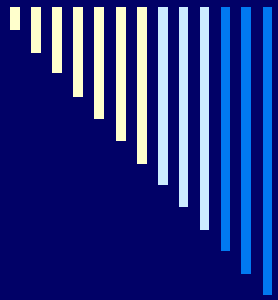


- ☐ Population Growth
 - ☐ Overgrazing/burning of grasslands
 - ☐ Deforestation
 - ☐ Migration Pressures
 - ☐ Hydroelectric Projects
 - ☐ Unregulated Tourism
 - ☐ Development Projects
 - ☐ Lack of Protection
-

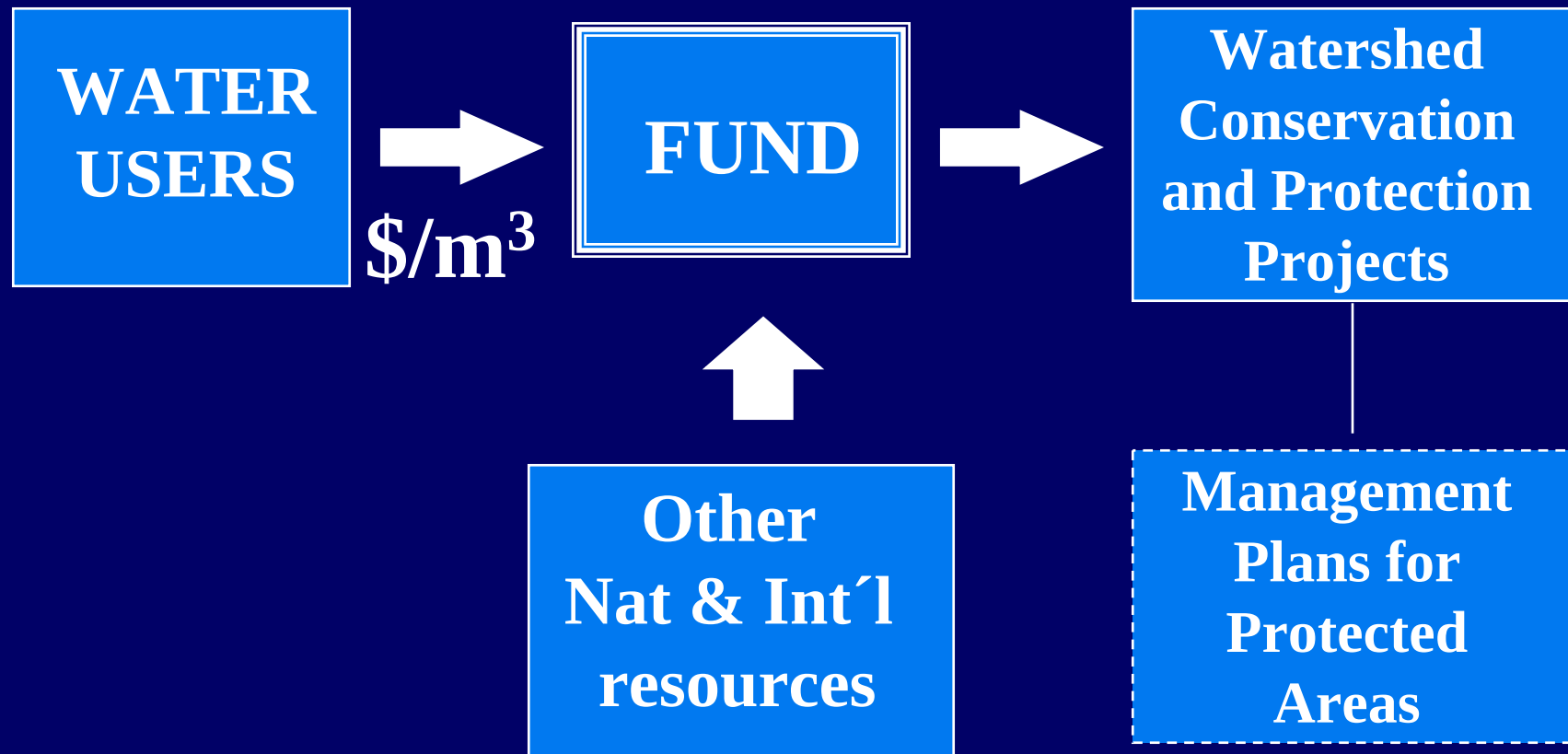
SOLUTION: Invest in conservation

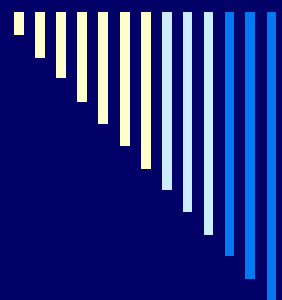


- Calculate value of environmental services provided by resource
- Link water users (drinking water, irrigation, energy generation, recreation) to the conservation of water sources
- Include the cost of protection in the price of water



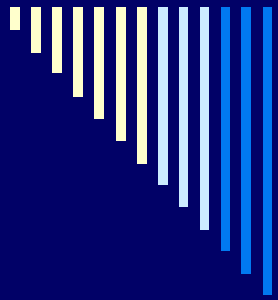
FONAG





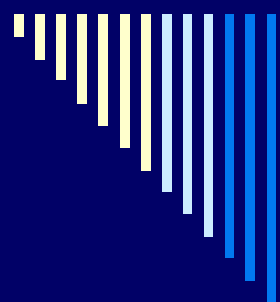
FONAG'S CONTRACT

- DEFINES FUND OBJECTS
- ROLE OF BOARD OF DIRECTORS
- ROLE OF THE TECHNICAL SECRETARIAT
- ROLE OF THE FINANCIAL MANAGER



TYPES OF PROJECTS

- Land tenure
- Ranger and control programs
- Hydrological protection measures
- Valuation of envtal services
- Sustainable production systems
- Evaluation and Monitoring programs



FONAG

Board



Technical Secretariat
Project Management



FONAG
Financial Manager

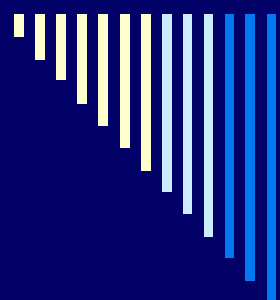


Users

- 1% sales drinking H2O
- \$45,000 energy
- \$6,000 beer producer
- \$10,000 swiss coop

Projects





FONAG'S INCOME TO DATE

US \$

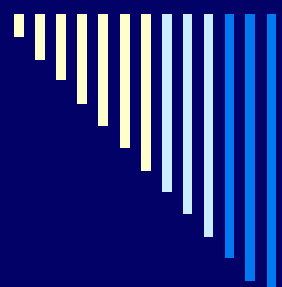
□ INITIAL SEED CAPITAL		21.000
□ DRINKING WATER SALES:	1%	1.000.300
□ ELECTRICAL GENERATION		135.000
□ PRIVATE BEER PRODUCER		6.000
TOTAL		<u>1.162.300</u>



ESTIMATED RESOURCES

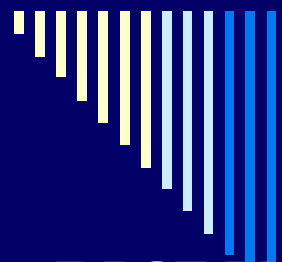
	(Thousands US\$)				
	<u>Dic/03</u>	<u>O4</u>	<u>05</u>	<u>O6</u>	<u>07</u>
INITIAL EQUITY	1.162*	1.425	2.125	2.925	3.865
MEMBER PAYMENTS	300	700	8 00	940	1.100
INTERESTS GENERATED	75	144	154	170	180
(-) EXPENSES	12	24	24	30	30
FUND RESOURCES	1.525	2.245	3.055	4.005	5.115
PROJECTS TO FUND	100**	120	130	140	150
FINAL EQUITY	<u>1.425</u>	<u>2.125</u>	<u>2.925</u>	<u>3.865</u>	<u>4.965</u>
Estimated interest rate (%)	10	8	6	5	4

*Jun./03 **accumulated interests



PROJECT SELECTION CRITERIA

- ❑ CONTRIBUTE IN THE WATER QUALITY AND FLOW PROTECTION
- ❑ BE COMPATIBLE WITH THE PROTECTED AREAS' MANAGEMENT PLANS
- ❑ PROMOTE COMMUNITY PARTICIPATION
- ❑ ACTION ORIENTED
- ❑ FOLLOW THE BYLAWS DETERMINED BY THE FUND
- ❑ SELECTION BY COMPETITIVE AND TRANSPARENT PROCESSS
- ❑ IMPLEMENTED BY A SPECIALIZED INSTITUTION (NGO'S IN PARTICULAR)



INSTITUTIONAL DEVELOPMENT

FIRST PHASE 1997-2000

- ❑ Design of the proposal
- ❑ Political lobbying and approval

SECOND PHASE 2000-2001

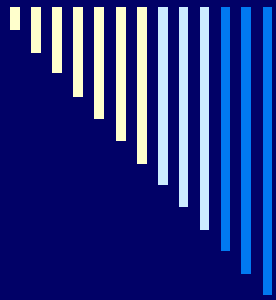
- ❑ Signing of contract and seed capital provided
- ❑ Capitalization- not enough interests generated for project implementation
- ❑ Institutional organization- new member, Technical Secretariat, Bylaws, EP

THIRD PHASE 2002-2004

- ❑ Establish priorities- watersheds, areas and plans
- ❑ Start financing small scale projects
- ❑ Develop institutional alliances

FOUR PHASE 2005-

- ❑ Cofinancing from international donors for larger scale projects
- ❑ Water resources planning for Quito Watershed

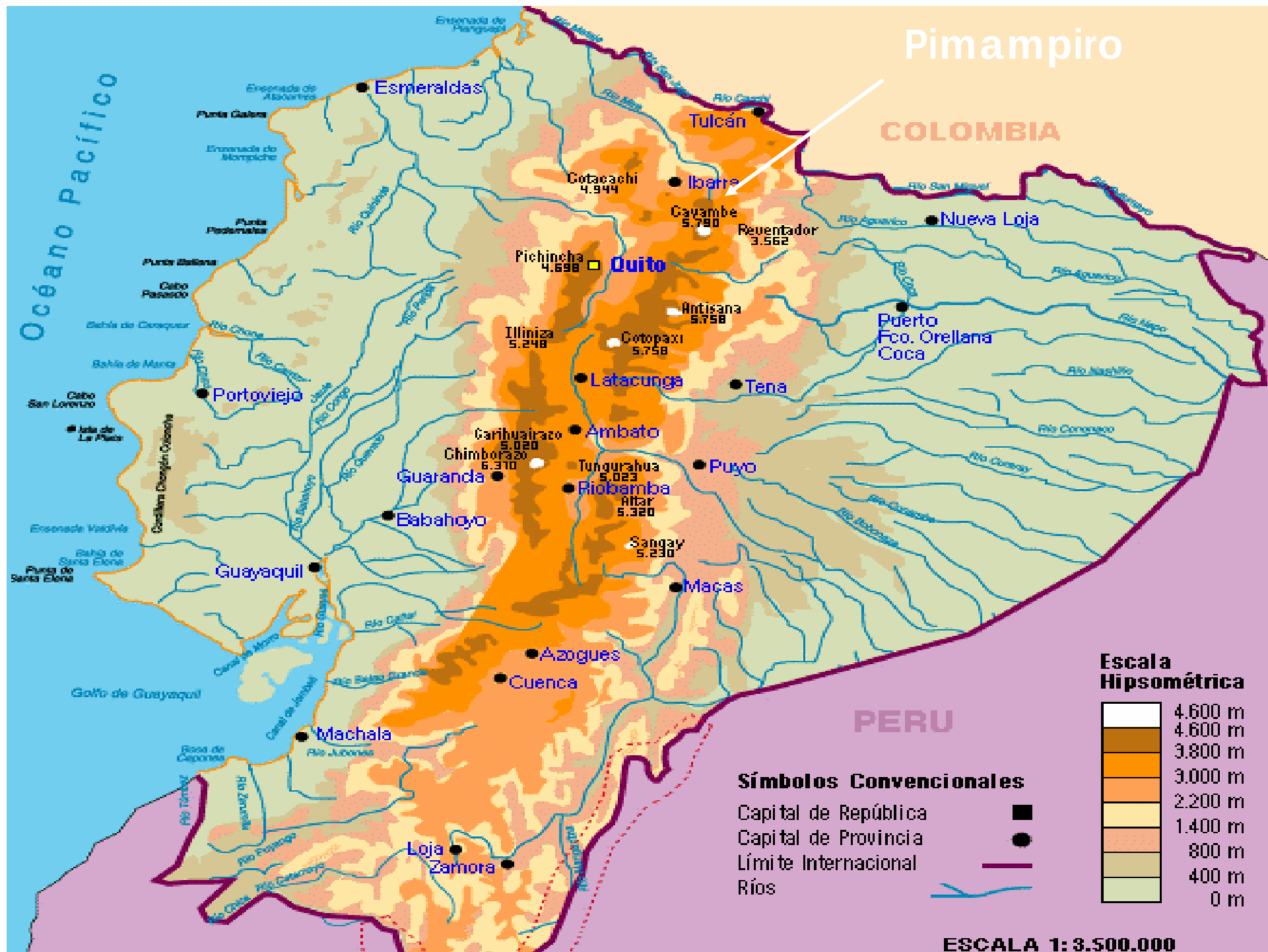


WHY ESTABLISH A FUND?

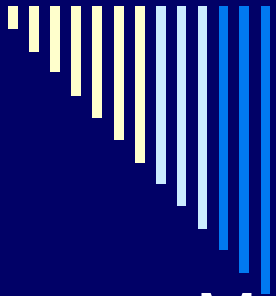
- ❑ Coordinate and enhance individual efforts
 - ❑ Take advantage of the skills and capabilities of all players
 - ❑ Assure continuity and transparency in conservation activities
 - ❑ Provide long-term conservation financing
 - ❑ Expand public/private participation in conservation
-



Case of Pimampiro Ecuador

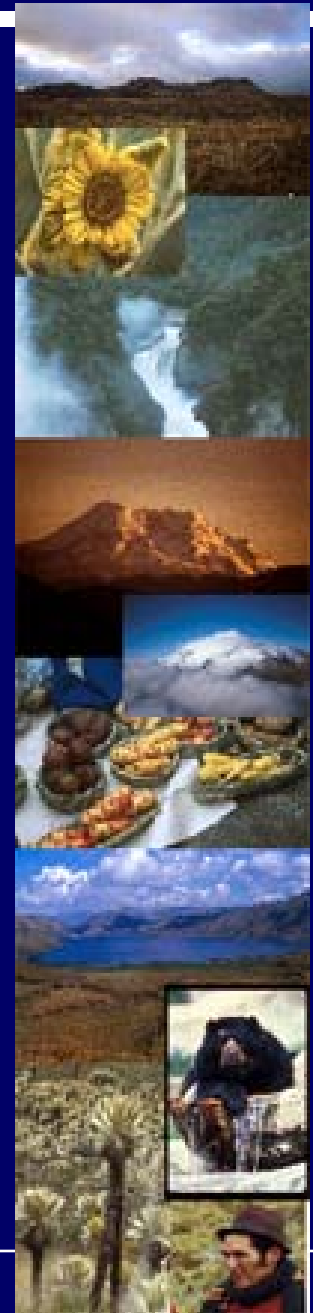






Pimampiro

- ❑ Municipality has a population of 17,000 - 6,000 live in town
- ❑ Estimated that 13,000 has of forests were deforested since 1985
- ❑ Of 7,000 has of forest left in the municipality, 638 has are in the hands of the Nueva America Association (27 families)
- ❑ This forest is in the headwaters of the municipality's water system





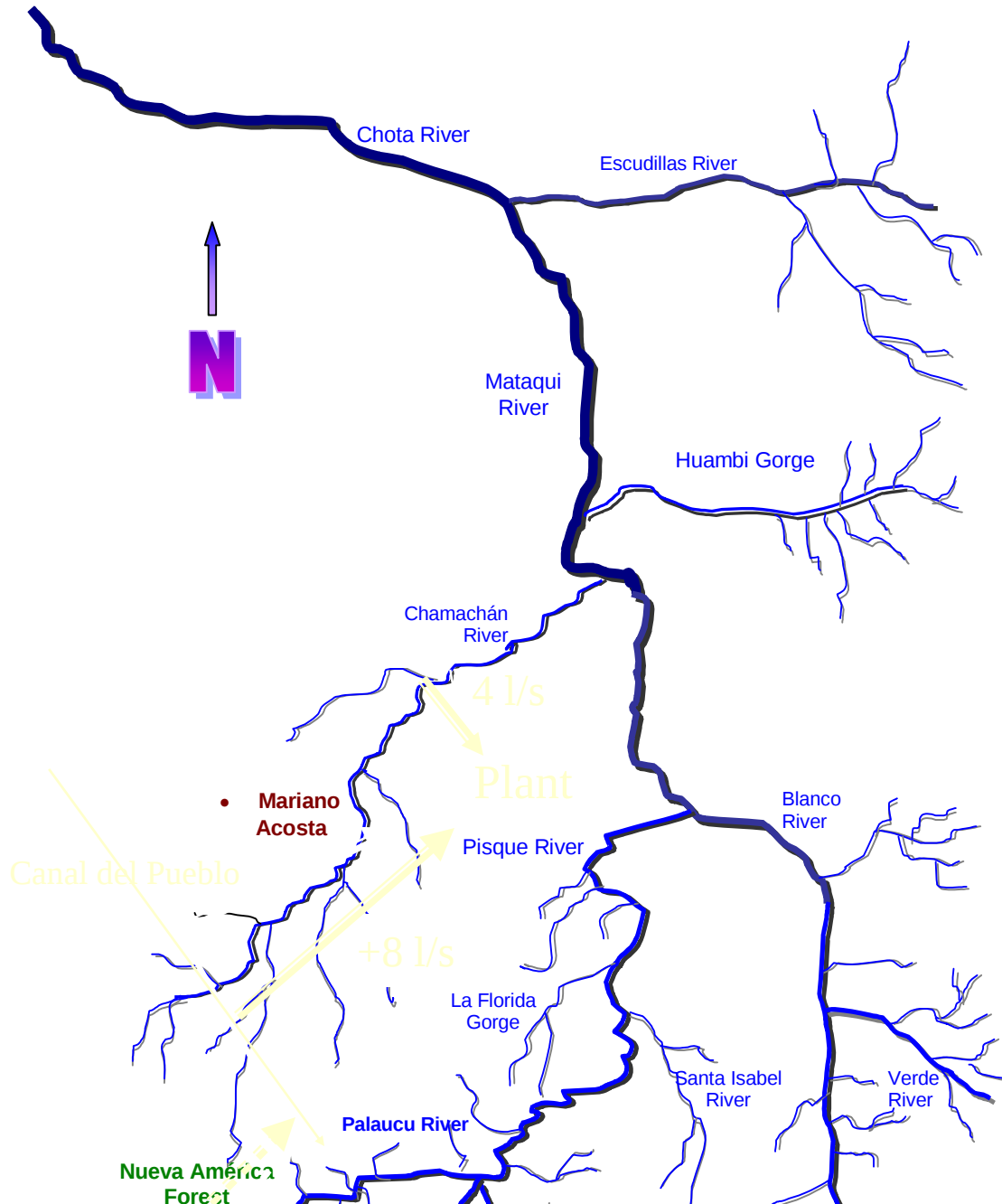
Pimampiro's Drinking Water System

Needs: 20 l/s

Supply:
before 2001 = 4 l/s untreated

2001 = +8 l/s allowing for
12 l/s treated
(installed capacity for 50 l/s)

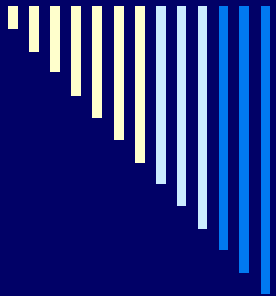
+ 2003 = +20 l/s by adding
80 l/s to the irrigation canal







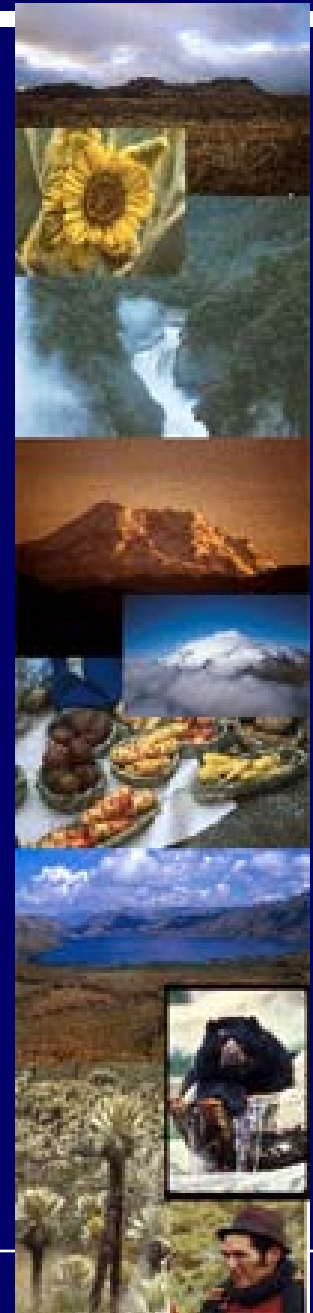


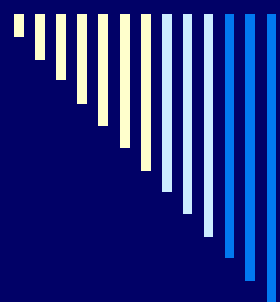


Pimampiro

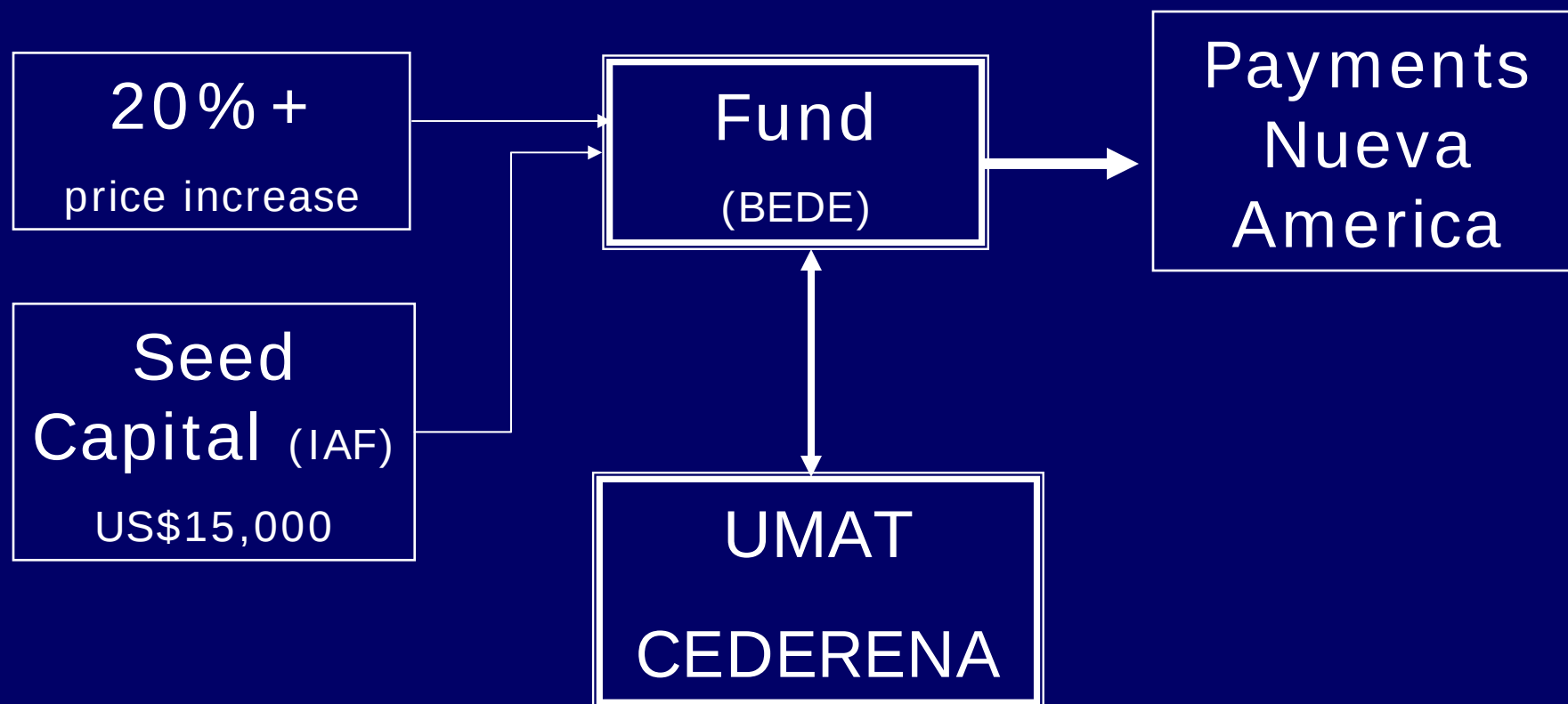
□ Payment mechanism

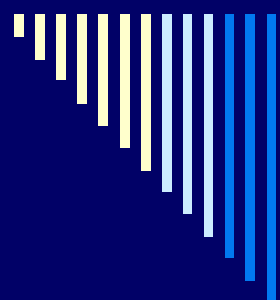
- Was part of natural resource management and agricultural assistance project
- Institutional arrangement
- Price definition based on willingness to pay





Institutional Arrangement

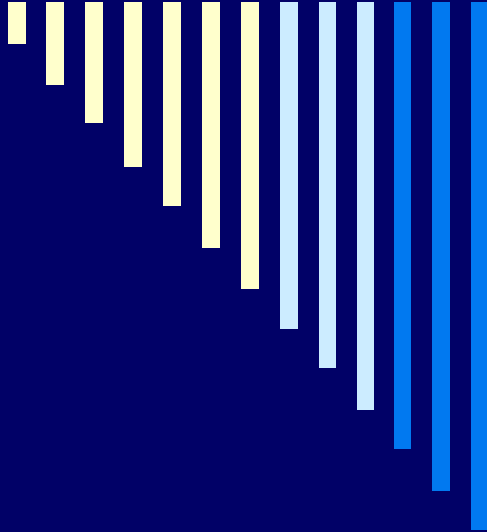




Payment structure

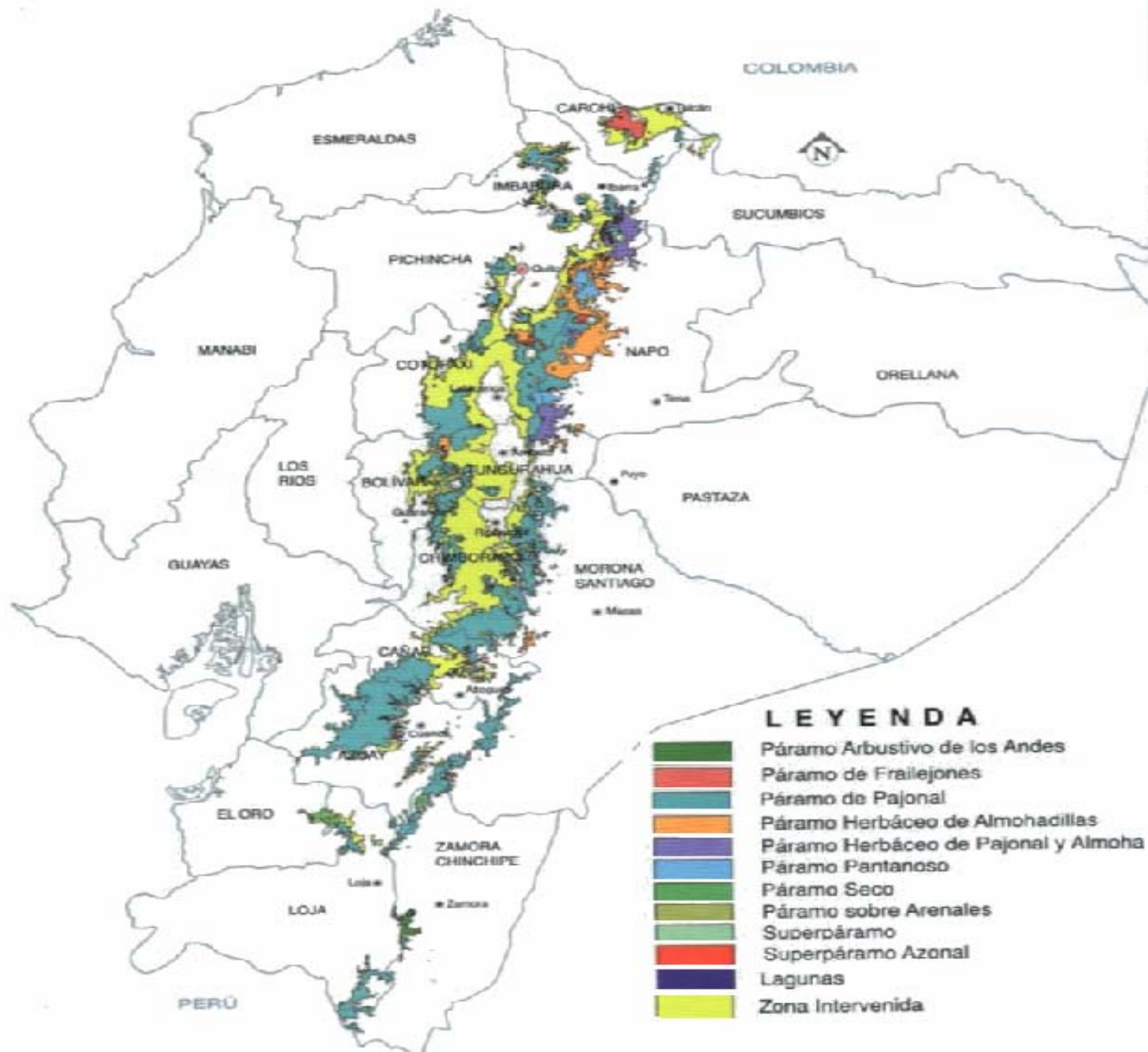
Primary paramo and forest	US\$ 1/ha/month
Old secondary forest	US\$ 0,75/ha/month
New secondary forest	US\$ 0,50/ha/month



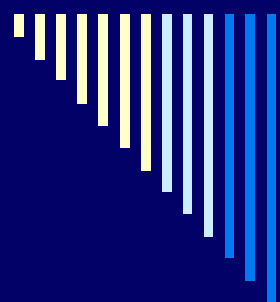


CASE OF PROFAFOR ECUADOR





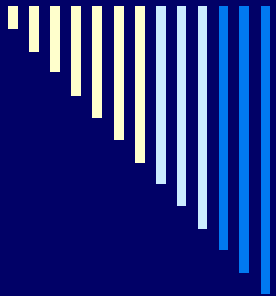




Profafor - FACE

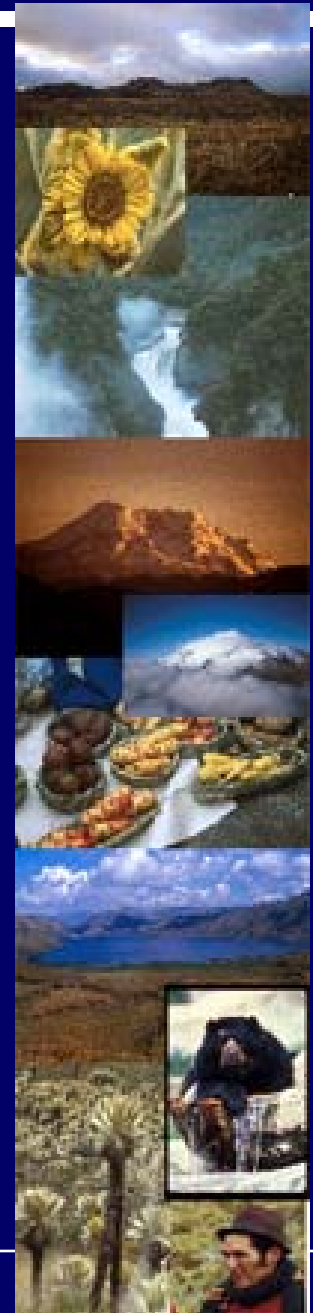
- ❑ Ecuadorian organization working since 1993
- ❑ Financed by a group of dutch energy companies interested in Activity Implemented Jointly (precursor to CDM)
- ❑ Profafor finances 75% reforestation costs and gives technical assistance
- ❑ Landowner commits to keep forest for 99 (now 25) years
- ❑ PROFAFOR Owner of the carbon credits

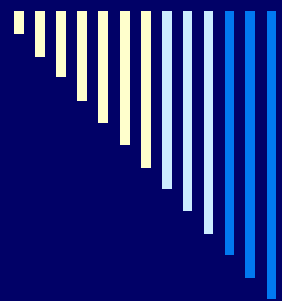




Profafor - FACE

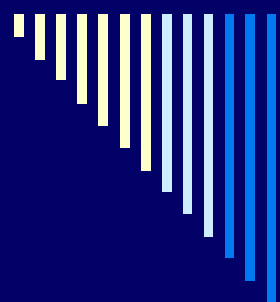
- 200 reforestation contracts
 - 8000 ha in Indian communities
 - 18000 ha with private landowners
- Environmental effect
 - 26.000 ha reforested
 - Working with exotic species





LESSONS LEARNED

- Imperfect information – need to clarify the service being rendered
 - Not paying for the resource (water, oxygen, trees)
- Socio economic context has to define the application of the mechanism
 - Different cultural dimensions - \$, water, etc.
 - Opportunity costs of land and labor differ
 - Situations where PES are NOT applicable



LESSONS LEARNED

- High willingness-to-pay for water protection
- Hydrological function has a sensitive political dimension that should not be ignored
- Payments do affect behavior and environmental awareness
- Payments are a source of income for rural areas with little investment options
- Community organization and participation is fundamental