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METHODOLOGY FOR COSTS AND RATES COMPARISON AMONG WATER UTILITIES

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INTRODUCTION

The rate for potable water services is a reflect of the costs to give the service, the efficiency of the water utility and the possible subsidies.

It is not possible to compare rates among water utilities because the costs depend on regional characteristics and efficiency and not all utilities receive subsidies.

OBJECTIVE

To develop a methodology that allows to analyze and compare rates and costs among water utilities.

WATER UTILITIES

- This project included 6 Water Utilities in Mexico
- All of them have more than 100,000 users each one
- Not all of them have Water Treatment, so the study was done only for potable water

WATER UTILITIES

- A running project is studying 14 Water Utilities at the Mexico/EUA border, financed by the NADBANK

Costs Classification:

The costs of a Water Utility can be classified in the following way:

- Administration
- Production
- Distribution
- Depreciation
- Financing
- Other costs (Planning, Training, Water culture)
- Investment to meet future demand (10 years)
- Quality in the service

Costs Classification:

Los costos en que incurre un organismo operador se pueden clasificar de la siguiente manera:

- Administration
- Production
- Distribution
- Depreciation
- Financing
- Other costs (Planning, Training, Water Culture)
- Investment to meet future demand
- Quality in the service

Basic Costs

Integral Costs

An Ideal Water Utility

Each Water Utility can be compared with others as well as with its Ideal

Characteristics of its Ideal

- Annual Administration Costs (\$400/user)**
- Physical efficiency (85%)**
- Annual Distribution Costs (\$250/user)**
- Commercial efficiency (95%)**

Ideal Basic Costs:

- Ideal administration costs**
- Modified production costs (modified by the level of physical efficiency)**
- Ideal distribution costs**
- Depreciation Costs**
- Financing Costs**

BASIC COSTS

Actual physical efficiency = 65%

Ideal physical efficiency = 85%

Ideal commercial efficiency = 95%

Actual Rate = \$6.00 / m³

Costs	Actual WU \$/user
Administration	533
Production	220
Distribution	280
Depr. and Fin.	310
	\$1,343

\$1,343 *(Users / billed m³)

\$5.80 /m³

220 *(65/85)

Ideal WU \$/toma
400
168
250
310
\$1,128

1,128 / 0.95

\$ 1,187

\$1,187 *(Users / billed m³)

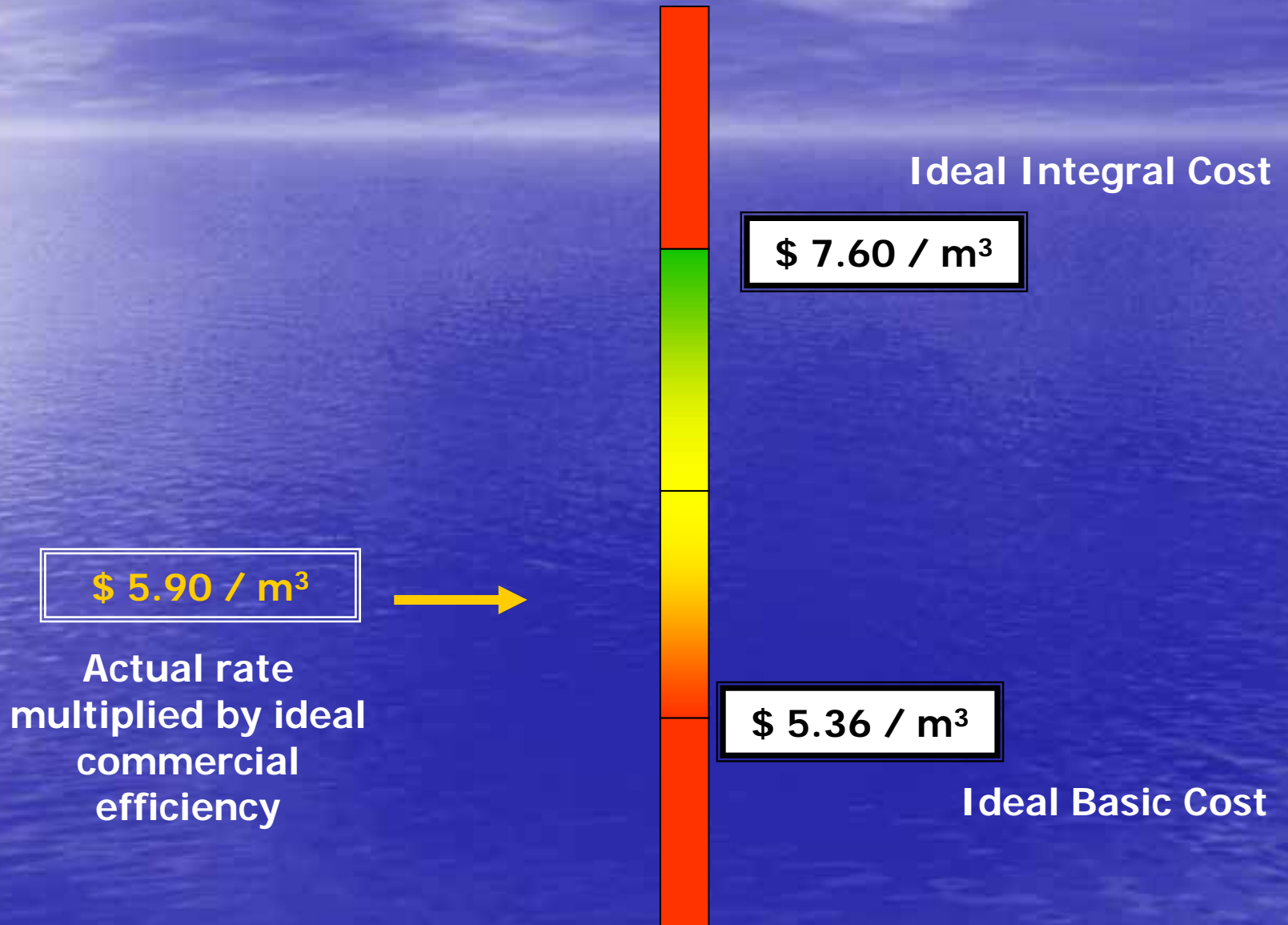
\$ 5.36 / m³

INTEGRAL COSTS

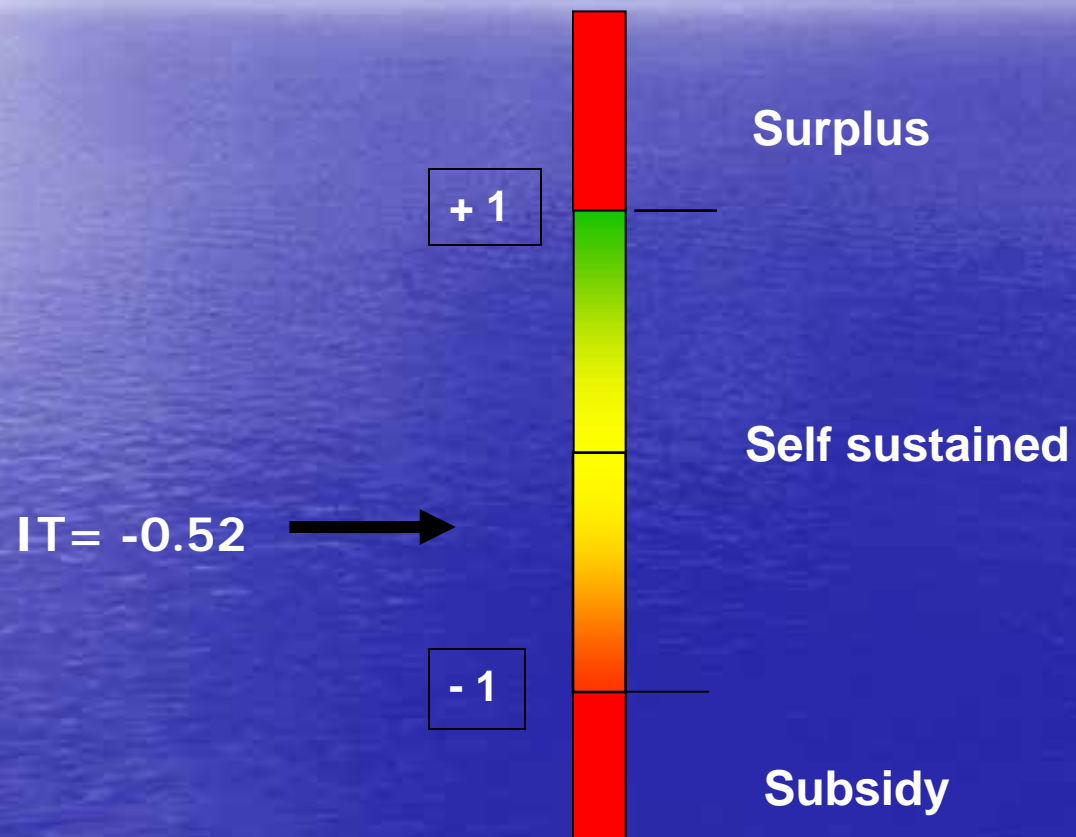
	Cost (\$/m ³)
Future demand	1.85
Quality	0.21
Other costs	0.18
	2.24

Ideal Integral Cost = $5.36 + 2.24 = \$ 7.60 / \text{m}^3$

ACTUAL RATE AND IDEAL COSTS



RATE INDEX

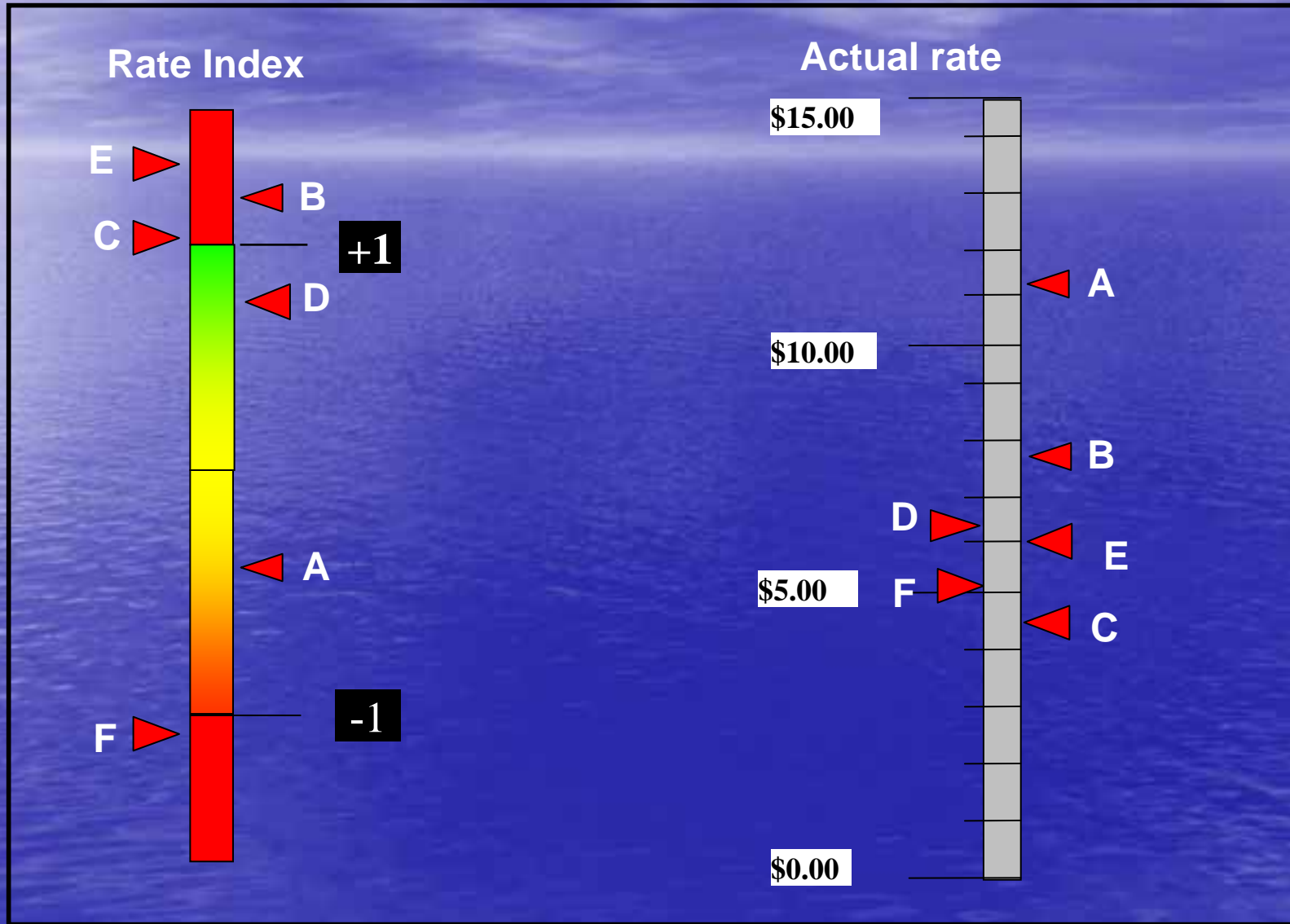


RESULTS

Water Utility

Costs	A	B	C	D	E	F
Administration	412	510	533	1,677	390	390
Production	1,083 (75/85) = 994	303 (61/85) = 217	513 (82/85) = 495	261 (67/85) = 206	118 (75/85) = 104	475 (65/85) = 363
Distribución	454	280	290	320	260	310
Other Costos	521	288	530	840	230	320
Basic Costs	\$ 11.18 / m³	\$ 6.80 / m³	\$ 4.49 / m³	\$ 5.06 / m³	\$ 5.03 / m³	\$ 5.15 / m³
Future demand	\$1.73/m ³	\$0.34/m ³	\$0.00/m ³	\$1.46/m ³	\$0.24/m ³	\$1.60/m ³
Quality	0.21	1.21	0.08	0.14	0.27	0.22
Integral Costs	\$13.12 / m³	\$7.26 / m³	\$4.57 / m³	\$6.66 / m³	\$5.54 / m³	\$6.97 / m³
Actual Rate	\$11.59 / m ³	\$7.84 / m ³	\$4.82 / m ³	\$6.54 / m ³	\$6.17 / m ³	\$5.06 / m ³
Rate Index	-0.58	1.08	1.05	0.85	1.11	-1.02

RATE INDEX AND ACTUAL RATES



The Rate Index allows an objective comparison of costs and rates among Water Utilities

The Methodology allows the benchmarking among WU for continuous improvement

Participation of more WU will give more support to the ideal values

CONCLUSIONS

Water Utility A

Its administration costs are very close to the ideal. Its actual rate is the higher, but has a Rate Index of -0.58.

It means that even with that “high” rate the WU can not cover its Integral Costs

CONCLUSIONS

Water Utility B

Its administration costs are higher than the ideal (\$510/user).

Production costs are reduced due to its low physical efficiency (60%)

Its Rate Index is 1.08. It means that with its actual rate the WU should cover all costs and have a surplus if its performance were ideal

CONCLUSIONS

Water Utility F

Its administration costs are close to the ideals

Production costs are reduced due to its low level of physical efficiency (65/85)

Distribution costs are high \$310/toma

Its Rate Index is -1.02. It means that with its actual rate \$5.06/m³ not cover the basic ideal costs.