



Water Accounting for Decision Making:

Case of the Public Services Company of Heredia (ESPH)

The Central Bank of Costa Rica conducted a case study on the application of water accounting concepts in the Public Services Company of Heredia (whose acronym in Spanish is ESPH) with the aim of showing the usefulness of water accounting for decision making related to business policies and strategies. The study addressed the issue of water supply and use in different economic activities, emphasizing environmental policies implemented by ESPH. The study was conducted with data for the period 2005-2013.

Company Overview

ESPH is a distributor of electricity, public lighting, drinking water and sewer services. It is located in the province of Heredia and its coverage of drinking water services reaches 5% of the national population.

The main activity of this company (the one that yields the most income) is electricity generation and distribution. Second in importance is the distribution of drinking water. To provide electricity, ESPH uses 100% hydraulic power, making water resources very important for the company's operations.

ESPH has a total of 64,477 connections, of which 91% correspond to households contracts. Only 33% of users connected to the drinking water service,

are connected to the sewer system; the rest use alternative treatment methods such as septic tanks. The level of coverage of ESPH sewer system is low; however, in 2013 the number of users connected increased. According to the emissions account, ESPH disposes of 96% of the waste water emissions it receives from its users in its treatment plants.

ESPH: pioneer in water fee

Seeking to ensure sustainability of water resources, ESPH created a water fee in the year 2000 whose funds are used for basin conservation and recovery through purchases of land, payment for environmental services (PES), and educational programs. ESPH is a pioneer in the application of an environmental fee in the country, and has encouraged other operators to implement similar tools.

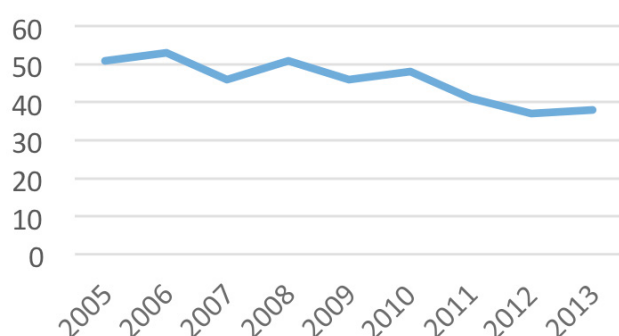
Currently, the water fee is ₡15 per m³ of water, which has allowed ESPH to have almost 1000 hectares of land under the PES program. However, according to ESPH's water account, the weight of this fee among the indicators of the total of services provided by the company is still very low: it represents around 1% in terms of gross fixed capital formation and in terms of production. Table 1 shows this indicators for the year 2012.

Table 1. Water fee as compared to various services aggregates - 2012

Production at basic prices	1.2%
Gross added value	0.9%
Gross fixed capital formation	1.5%

The results of ESPH's water account show that in spite of having a small coverage at a national level (5% of the population), the company has positive results in various indicators. During the 2005-2013 period, the percentage of water losses (or unaccounted-for water) decreased by more than 10%, from 51% to 38%.

Figure 1. Percentage of water losses for ESPH 2005-2013



ESPH extracts on average half of the water for distribution from surface water sources and half from ground water sources. Seventy-eight percent (78%) of the water distributed by the company is for households consumption, and the rest is used by companies, the government, and other economic activities. Figure 2 shows the distribution of water use by corporate customers for 2012. The manufacturing industry is the largest user of the water distributed to companies, receiving 37% of the total, followed by real-estate-related activities, which receive 26% of the water.

The average tariff of ESPH is $\text{₡}474/\text{m}^3$ ($\sim \$0.82/\text{m}^3$), which is lower than the average tariff at a national level ($\text{₡}576/\text{m}^3$). However, ESPH distributes 240 liters of drinking water per person per day. Table 2 shows the main indicators obtained from water accounts for ESPH compared to the indicators for the whole country.

Figure 2. Water use by corporate customers 2012

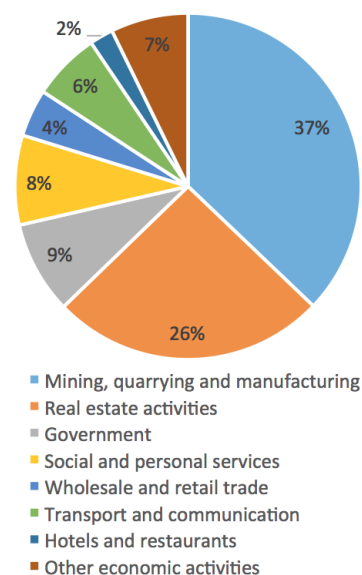


Table 2. Main indicators 2012

INDICATOR	ESPH	NATIONAL
Water billed per inhabitant (L/person/day)	240	155
Gross added value as a proportion of production	70%	68%
Average tariff (₡/m³)	473.9	576.4
Proportion of billed water supplied to households	78%	82%
Proportion of intermediate consumption that corresponds to electricity	21%	24%
Unaccounted-for water (%)	37%	54%

This brief was written by Lucrecia Salazar (salazarvl@bccr.fi.cr) from the Central Bank of Costa Rica.

Download more publications at: http://www.bccr.fi.cr/cuentas_ambientales/index.html