

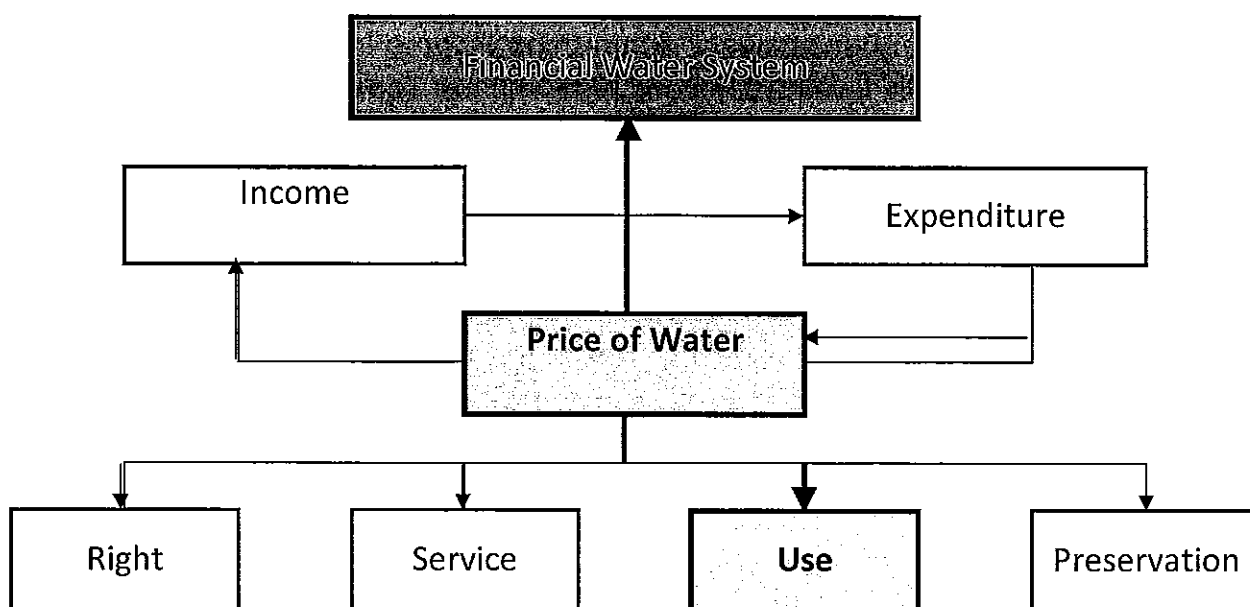
Summary

Alfonso Olaiz y Pérez

The work of Alfonso Olaiz, referred to as the “candidate” from now on, in the field of water resources started in 1971 when, upon the invitation of the head of the division and his former professor José Luis Sánchez Bribiesca, he joined the Hydraulics Division of the Institute of Engineering of the National Autonomous University of Mexico (*Universidad Nacional Autónoma de México-UNAM*). He participated in the design and lab tests of the breakwaters for the cooling water intake of the reactor of the nuclear power plant at Laguna Verde, in the coast of the Gulf of Mexico. The candidate envisioned, designed, built and operated the revolving platform in the lab to test ocean waves of different directions and magnitudes striking the coastal breakwaters. The nuclear power plant, the only one in Mexico, was built in the late 70s using the design of the Institute of Engineering. The plant is still operational.

He completed a Master of Science degree at The University of Michigan (1974-75) sponsored with a World Bank scholarship. The candidate involved himself in the fields of economics and financing of the use and preservation of water resources, studies that led to the establishment in Mexico of the concepts of Water Pricing and the Water Financial System, later described.

The first comprehensive planning work for the use, administration and management of water resources in Mexico was presented for and incorporated in the National (Mexican) Water Plan of 1975. This Plan, updated in 1981, looked upon the quantity and quality of water in its different uses, including those now classified as ecological. It also looked for efficiency in water use, work in the demand side of water management (required and pending), the fair distribution of the available resources among users and regions, the preservation and improvement of water quality and water management at the basin level. All these actions required investments and implied O&M costs that had to be faced in conditions of scarce and insufficient economic resources. From the 30s until the mid-80s, most of the water costs coverage was due to public and government intervention. Water subsidies to real costs were common and expected, but these



The Price of Water has four components: Right (price) accounting for the value to the user of water property; Service (tariff), the value or cost of the service provided to a user connected to a public or general water supply system (like potable water and irrigation); Use (quota), a contribution by all water users, required by the Constitution, to the general and common costs of water management, according to their payment capacity and the water scarcity in their location; and, Preservation (cost) as the cost to maintain water unpolluted from discharges from human activity uses.

The candidate's **Use** component of the price of water soon became an issue of law and implemented nationwide in 1982 in the Federal Rights Law (*Ley Federal de Derechos*). After a passive period of public indifference from 1982 to 1988, the results were surprising and gave the water sector the new, much needed revenue tools. The graph below shows the income from quotas of water use from 1989 to 2009 and how they compared to the total budget of the National Water Commission (NWC), which is the federal authority for the administration, conservation and management of water resources in Mexico. In 1993, the collection from just this component of the water price, the **Use** of national waters, represented close to 99% of the budget of the NWC.

disparity between the peso and the dollar. The outstanding credits though, were causing the payment of compromise commissions for the undisbursed portion of the credits and represented a significant annual payment of interests for Mexico for unutilized resources, which because of devaluation, were impossible to use. In 1984, the World Bank cancelled 220 million dollar from the loans portfolio thanks to the results of an econometric computer model developed by the candidate to simulate alternative scenarios of inflation, devaluation, MXP-USD parity, and the real national capacity of infrastructure building.

Between 1987 and 1992 the candidate was in charge of the planning, design, contracting, building, supervision and operation of the facilities of the Mexican Institute of Water Technology (*IMTA-Instituto Mexicano de Tecnología del Agua*) in Cuernavaca, a city 50 miles south of Mexico City. The facilities were built in a 45 acre lot and consist of, fully equipped and operational laboratories, buildings of cabinet offices for researchers and technicians, service centers, training and educational centers, and general operation and administrative infrastructure.

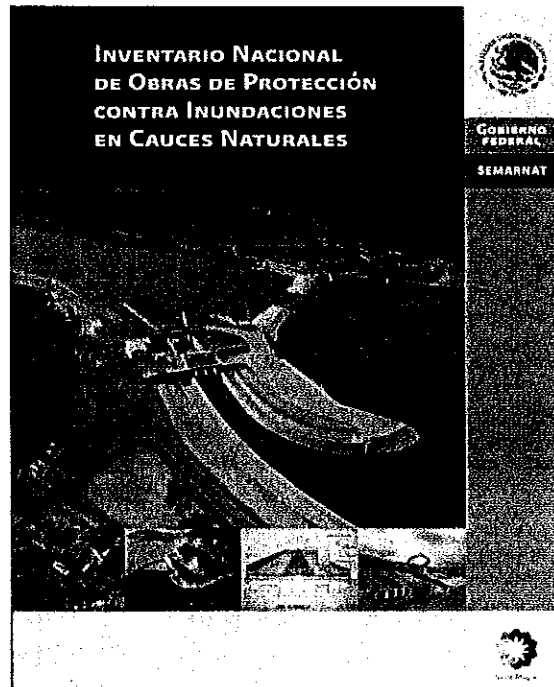
The total investment from 1986 to 1994 was an estimated of 150 million in today's dollar or about 105 million Euros. The final investment breakdown was: 89.7% in physical construction works, 2.1% in project design, 6.4% in supervision and 1.8% in architectural direction. The following pictures show the architectural perspective of the Master Design of IMTA's facilities (1987) and an aerial photograph after completion of the master plan (1997).

Since 2000 additional buildings and facilities have been built to support the necessary growth of the Mexican Institute of Water Technology. Additional information and details are available at IMTA's web page: www.imta.gob.mx

The candidate was IMTA's counterpart for the creation in 1994 of the **Economic and Financial Engineering Master's Degree (MIEFA)**, as a Graduate Engineering Division Program in Campus Morelos of the National Autonomous Mexican University (UNAM), in collaboration with the Department of Systems Engineering in Central UNAM. In 1998, the Master's program changed into the ***Integral Water Management Master's Program***, being offered today in Campus and he was its Coordinator from 1999 to 2007. From 1994 to 2008 he was professor of various courses and directed and advised more than 15 master thesis for graduation. Three of them obtained ***Summa Cum Laude*** distinctions.

To the Residents Association of Lomas de Cuernavaca Suburb, a community where the candidate has his home, he took charge of the reengineering program of their water and sanitation system. He designed and implemented the water program for the short and long term for water quantity and quality. Main results were: two rehabilitated deep wells, a leak detection and repair system, installation of volumetric meters at each dwelling, measurement of residential water consumption and volumetric billing and payment with differential tariffs according to water delivered, measurement of water quality in the hydraulic mains and homes, and a hydraulic model of the network to simulate and check for water pressure in the mains.

The candidate headed a group of economists to perform the *Economic evaluation and social valuation of alternative scenarios of surface water management in the Lerma-Chapala river basin*, a study for the National Water Commission (NWC) from January 2003 to April 2004. The method of contingent valuation was carried out for the water stored in Chapala Lake at different scenarios and the results helped to define alternatives of an improved **Surface Water Distribution Agreement** for the Water Council for the Lerma-Chapala Basin. For the first time in Mexico the contingent valuation methodology was applied to estimate the *Non-use* value of water stored at the lake.



Today, the candidate works as an Hydraulic Senior Specialist in the Department of Hydrology and River Mechanics. He is Group leader to develop **Investment & Financing Cost Schemes** in the **Regional and State Water Programs** from the **2030 Water Agenda**, programs currently being in development.

Last August 7th, the Mexican Institute of Water Technology celebrated its first 25 years. The candidate was chosen to give the message as founder and hydraulic specialist. He invited the IMTA community to excel in their particular fields of expertise, his field being the R&D of water pricing and the financial water system, to do practical and functional things for water users in Mexico and hopefully, abroad.