China's Water Crisis and the Privatization of Urban Water in Kunming

Globalization Monitor

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Introduction

Life requires access to clean water; to deny the right to water is to deny the right to life.

---Maude Barlow, author of *Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water*

Water as a Human Right

On July 28th 2010, the General Assembly of the United Nations (UN) finally declared that "Safe and clean drinking water and sanitation is a human right essential to the full enjoyment of life and all other human rights"[1]. Although it sounds like a common-sense idea, it was a hard-won battle to get the UN to recognize the resolution on the right to water. 41 of the 163 member states abstained from the vote, and they were almost exclusively from the First World countries, including the United States, United Kingdom, Canada, Australia, Denmark, Israel, Japan and New Zealand. Admitting water is a human right clearly places certain responsibilities on each of the member states to ensure that its people have access to clean and affordable water without discrimination. Moreover, it also means that water "is a legal entitlement, rather than a commodity or service provided on a charitable basis"[2]. Therefore, even though no legal obligation is

1 UN News Service. (28/07/2010). "General Assembly declares access to clean water and sanitation is a human right". http://www.un.org/apps/news/story.asp?NewsID=35456&Cr=sanitation&Cr1 (Retrieved on 23/10/2010)

2 Bluemel, E.B. (2010). "The Implications of Formulating a Human Right to Water",

derived from the resolution, those who abstained might simply be too scared of these implications.

If we look from outer space, we see that our planet is covered in water. The truth is that only about 2.05 percent of the water is fresh water, and the rest is salty water, which cannot be used for irrigation or drinking. Of this small amount of fresh water, less than one percent is readily accessible to humans[3]. A line from the poem *The Rime of the Ancient Mariner* written by Taylor Coleridge can best describe the water situation we have:

"Water, water everywhere / Nor any drop to drink"

Water is essential for life. An average person can live up to 20 days without food but cannot survive without water for 7 days. If there was no water, there would be no photosynthesis by plants, and the entire ecosystem would collapse in a blink. Unfortunately, the world is now facing an acute water shortage largely due to the unsustainable economic development that human society has been pushing for many decades.

Today, 884 million people worldwide do not have access to safe drinking water[4]. More than 2 million children die every year due to poor sanitation and water[5]. In China, there are still over 130 million people (i.e. 11 percent of the population) who do not have

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Ecology Law Quarterly, Vol. 31, p957.

3 Pidwirny, M. (2006). "The Hydrologic Cycle". *Fundamentals of Physical Geography,* 2nd Edition. http://www.physicalgeography.net/fundamentals/8b.html (Retrieved on 02/11/2010)

4 WHO/UNICEF. (2010). *Progress on Sanitation and Drinking-water: 2010 Update*. WHO Press, p.7.

5 UNICEF. (2010). "PLoS Medicine: Poor sanitation and water kill more than two million children annually" http://www.unicef.org/media/media_56847.html (Retrieved on 02/12/2010)

access to safe drinking water[6]. It is estimated that many places in the world will soon face "water bankruptcy" if the current water consumption trends continue. Rather than advocating the world to reduce consumption or to change the present mode of economic organization, the world's top business leaders urge for greater commercialization of water. In the report of the 2010 World Economic Forum, it says: "Within two decades, water will become a mainstream theme for investors; for many, water is already a better "pick" than oil.[7]" Yet, for those who view water as a common good, this is a somewhat alarming statement.

In most cases, people living in poor countries suffer the most from water shortage because they cannot afford to import water from other water-abundant places or to build gigantic pipelines to connect a far-away water source. What makes it even worse is that because of their huge debts, many Third World countries lose control of their resources and economies to the First World investors via some international organizations, such as the World Trade Organization (WTO), the World Bank and the International Monetary Fund (IMF). The following review written by Sara Grusky might be a good example to illustrate the intensity of the phenomenon:

"A random review of IMF loan policies in forty countries reveals that, during 2000, IMF loan agreements in 12 countries included conditions imposing water privatization or full cost recovery. In general, it is African countries, and the smallest, poorest and most debt-ridden countries that are being subjected to IMF conditions on water privatization and full cost recovery. Ironically, the majority of these loans were negotiated under the IMF's new

6 WHO/UNICEF. (2010). *Progress on Sanitation and Drinking-water: 2010 Update*. WHO Press, p.40.

7 World Economic Forum. (2010). The Bubble is Close to Bursting http://www.weforum.org/issues/water (Retreved on 25/05/2010)

Poverty Reduction and Growth Facility (PRGF), a reform announced with great fanfare in 1999 when IMF officials claimed that the new loan facility would re-focus the IMF's controversial structural adjustment measures on activities that borrowing government's would identify as leading to poverty reduction" (for more details see Appendix I)[8].

Obviously, the IMF's self-proclaimed mission to reduce poverty contradicted with the way it imposed those conditions for the loans on the recipient African countries. For one thing, one should realize that the poverty suffered by these African countries now is actually the product of their colonial past. In the name of poverty reduction, the IMF --- which represents the interest of the rich countries in the North (i.e. also the former colonists) --- tries to lure these poor countries to privatize their water sector. At the end of the day, it is still the poor who suffer the most.

Over the last few decades, there has been a growing trend of privatizing water utilities around the globe. The selling of the UK's publicly owned regional water utilities to private companies in 1989 started a new wave of water privatization, and this new model of water supply was soon exported to the developing countries in the global South, opening up a new market for water corporations. Some international organizations, like the WTO and the World Bank, have been doing a lot of work to create a "consensus" concerning the privatization of public water. For instance, in the World Bank's *World Development Report 1994*, it says:

"The weight of evidence is that competition in or for a market for services is generally more effective in responding to consumer

8 Grusky, S. (02/2001) "IMF Forces Water Privatization on Poor Countries". Globalization Challenge Initiative. http://www.nadir.org/nadir/initiativ/agp/free/imf/water.htm (Retrieved on 25/05/2010)

demands than are mechanisms for making public enterprises more accountable…The diffusion of novel ideas such as sector unbundling, competitive entry, and incentive regulations from industrial to developing countries has occurred at a remarkable speed. Some developing countries have in fact led the move toward more market-based provision of infrastructure, as in privatization of utilities"[9].

China is not immune from this current of privatization. In the mid 1990s, the Chinese government started to introduce the Public-Private partnership (PPP) and the Build-Operate-Transfer (BOT) approach into the field of its urban water infrastructures. But it was not until the promulgation of the policy paper *Suggestions on speeding up the marketization process for municipal public utilities* by the Ministry of Construction in 2002 that China began to marketize its municipal water utilities. Many changes have been made in China's urban water sector over the last 20 years, yet the impacts of the reform on people's daily lives are seldom addressed systematically.

What is "Water Privatization"[10]?

In a narrow sense, it means when a state-owned public water utility—the asset together with its maintenance, planning and operation—is sold to the private sector. In a broader sense, water privatization can also refer to the transfer of any governmental function to the private sector.

9 The World Bank. (1994). World Development Report 1994: Infrastructure for Development. http://wdronline.worldbank.org/worldbank/a/c.html/world_development_report_1994/chapter_3_markets_infrastructure_provision (Retrieved 10/12/2010)

10 Chu, S. (04/2010). *The Reform of the Urban Water Supply in Southern China*. Globalization Monitor, p.4.

Objectives

This report is a follow-up of our pilot research published in April, 2010[11]. In the previous report, we studied the social, economic and political impacts of water privatization in six cities in the southern region, by conducting surveys and in-depth interviews. The results from the pilot study provided us with an overview of the historical development, as well as some useful empirical data to unveil the problems faced by the Chinese people due to the privatization.

In order to further investigate the issues of urban water supply brought about by the privatization of urban water services, we include in this report the results of additional surveys and in-depth interviews that we conducted in Kunming of the Yunnan Province during the summer of 2010. In addition, desktop research was carried out to study the degree of privatization in different cities and the most recent developments in the six studied cities in terms of urban water supply.

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11 Chu, S. (04/2010) *The Reform of the Urban Water Supply in Southern China*. Globalization Monitor.

Chapter 1
The Marketization Reform of China's Urban Water

"Scarcity and abundance are not nature given---they are products of water cultures. Cultures that waste water or destroy the fragile web of the water cycle create scarcity even under conditions of abundance."

---Vandana Shiva, author of Water Wars: Privatization, Pollution, and Profit

1.1 China's Water Crisis

In recent decades China has stunned the world with its rapid economic development, which has often been praised as a miracle. However, the astonishing economic achievements of China actually come at the expense of the well-being of its people and the environment. Among the nation's approximately 660 cites, about 400 of them do not have sufficient water. Of these 400 cities, 136 of them (including some megacities like Beijing and Tianjin) are experiencing severe water shortages[1]. According to the international standard set by the United Nations Development Program (UNDP) and the World Resources Institute (WRI), a region is classified as "water-stressed" if its annual per capita water availability is less than 2000 cubic meters, and if it is less than 1000 cubic meters, it is classified as "water-scarce". China

1 China Institute of Water Resources and Hydropower Research (IWHR). (2004). *Research on the Coordinated Development of Hydropower and National Economy*.

has about 22% of the world's population but only contains 6% of the world's freshwater, and it is one of countries with the least freshwater resources. By 2007 China's annual per capita freshwater availability was 2156 cubic meters, just barely passing the "water stress" line. China is now facing an unprecedented water crisis mainly due to a number of reasons.

1.1.1 The Causes of Water Degradation and Shortage

Population growth:

From 1978 to 2009, China's population increased from 960 million to 1.33 billion despite the stringent implementation of the one-child policy[2]. Some estimated that the urban water demands in China would increase by 70 to 100 percent by 2025 due to the growth of the urban population[3]. This growth not only causes a surge in domestic and industrial water consumption but also a huge increase in agricultural water consumption. Agricultural runoff is a major source of water pollution in China because of the uncontrolled use of synthetic fertilizers and pesticides. It causes water degradation in a number of ways, including eutrophication of surface waters, pollution of groundwater and streams and toxicity to wildlife species. Eutrophication is often caused by a high level of anthropogenic dispositions of nitrogen and phosphorus, causing algae blooms in freshwater lakes. It has deleterious effects on water quality because the enhanced algae growth leads to hypoxia, and dead algae also release toxins into the water.

2 National Bureau of Statistics of China. (25/02/2010). "National Economic and Social Development Statistical Release 2009" http://www.stats.gov.cn:82/tjgb/ndtjgb/qgndtjgb/t20100225_402622945.htm (Retrieved on 2010-10-30)

3 Devan, J., Negri, S., and Woetzel, J.R. (07/2008). "Meeting the challenges of China's growing cities". *The McKinsey Quarterly*.

⬆ Photo 1: Dianchi Lake in Kunming City of Yunnan Province is brimming with blue-green algae. (by Globalization Monitor)

⬆ Photo 2: In the past people used the water from Dianchi Lake for irrigation and drinking. (by Globalization Monitor)

Most of the groundwater reserves in China are being depleted at a rate much faster than they can be replenished. The overdrafting of groundwater not only causes the lowering of the water

table beyond the reach of the existing wells, but it also leads to the occurrence of subsidence. During the past decade, Shanghai and Tianjin have sunk by more than 6 feet because of the over-exploitation of groundwater[4].

Urbanization and Industrialization:

From 1999 to 2009, the percentage of people living in cities jumped from 30.9% to 46.6%[5]. In general, urbanization may enhance the overall efficiency of water usage, provided that the utility services, including water supply and waste water treatment, can catch up with the increase in urban population size. Unfortunately, that fails to happen in China. By 2006, only 56% of the domestic waste water was treated before discharge, and about 200 cities in China did not have any treatment for waste water at all[6]. Apart from the increasing demand, water pollution is also a crucial contributing factor to China's water shortage.

Even though China has many laws and strict regulations for the discharge of industrial waste water, local officials often fail to enforce them and factory owners do not like to comply with the laws. A survey conducted in 2005 showed that among the 509 studied cities, only 23% of the factories treated the sewage properly before discharging it[7]. Despite the steadily improving sewage treatment technology, industrial and domestic waste water is still constantly and severely polluting the water bodies in China.

4 Economy, E.C. (09/2007). "The Great Leap Backward?", *Foreign Affairs*. The Council on Foreign Relations, Inc.

5 National Bureau of Statistics of China. http://www.stats.gov.cn:82/tjgb/ (Retrieved on 2010-10-30)

6 Xie, J. (2009) *Addressing China's Water Scarcity: Recommendations for Selected Water Resource Management Issues*. The International Bank for Reconstruction and Development/ The World Bank.

7 Economy, E.C. (09/2007). "The Great Leap Backward?", *Foreign Affairs*. The Council on Foreign Relations, Inc.

According to the statistics in 2008 from China's Ministry of Environmental Protection, the overall water quality of the 200 surveyed rivers was indeed very bad: 24.2% of the water was classified as Grade IV-V (i.e. water only suitable for industrial use or irrigation), and 20.8% failed to meet the Grade V standard (i.e. water not suitable for any purpose)[8].

Dam building and river re-channeling

The building of dams in upstream areas for purposes like hydropower, irrigation and tourism leaves the people living downstream facing water shortage problems. For example, 267 dams were built upstream along the Guanting watershed near Beijing, and the water flow was artificially decreased to a critically low level, further intensifying the water shortage problem in Beijing. The diversion of water from its natural channels not only endangers the survival of many aquatic wildlife species, but also causes lots of disputes between the upstream and downstream areas. For instance, in order to development its tourism, the Tianjin government built a dam upstream of the Ju River in 2002, which resulted in a significant decrease of the water flow of Ju River to the Haizi reservoir of Beijing. Since Beijing has been suffering from a water shortage in recent years, the local government therefore requested the Tianjin government to dismantle the dam. However, Tianjin did not want to sacrifice its chance of economic development for nothing and asked for compensation from Beijing. Today, the dispute still remains unsolved because neither Tianjin nor Beijing wants to surrender[9].

Uneven distribution of water

8 China's Ministry of Environmental Protection. (2008) "Report On the State of the Environment In China 2008", http://english.mep.gov.cn/standards_reports/soe/soe2008/201002/t20100224_186070.htm (Retrieved in 2010-11-12)

9 Wang, J. (04/2010) "The overconsumption of resources in Chinese big cities". *Hong Kong Economic Journal Monthly*, Issue 379.

Zhu Zouyan, the former vice-chairman of China National Natural Foundation once said during an interview: "Often, the people were watching helplessly the Yellow River in north China running dry and their crops withering while their countrymen along the Yangtze River were fighting to save their homes and crops from sweeping floods"[10]. China is the third largest country in the world and covers a wide range of weather and geologic conditions. In general, the provinces in the north have much less water resources compared to those in the south. Nevertheless, the uneven distribution of water does not match with the distribution of China's population or agricultural productivity. This is reflected by the fact that, with 19.6% of the country's naturally available water resources, northern China has 46.5% of the population, 64.8% of arable lands and 45.2% of the country's GDP[11]. On top of this, the negative impacts of global climate change on the freshwater systems will further escalate China's water shortage.

1.1.2 The Motives for the Marketization of Urban Water Supply

Water shortage and degradation pose an enormous threat to the continuation of China's economic miracle and to public health and social stability. One of the dominating explanations for the water crisis is that the traditionally stated-monopolized water sector has failed to satisfy the requirements for the rapidly developing economy. For a long time, the central government focused mainly on developing the infrastructures and did not pay much attention to the management or the service quality of the water sector.

10 China Internet Information Center. (03/07/2001) "China Moves to End Water Crisis" http://china.org.cn/english/GS-e/8662.htm (Retrieved on 25/12/2010)

11 Xie, J. (2009) *Addressing China's Water Scarcity: Recommendations for Selected Water Resource Management Issues*. The International Bank for Reconstruction and Development/ The World Bank, p.10.

As one of the Chinese water experts puts it: "The common metaphor to describe the current system is 'nine dragons manage the water'. Within this system, there are overlaps and conflicts in responsibilities, as the boundaries between institutional jurisdictions are not always clear. This unwieldy system has increased the administrative cost for coordination among different institutions and affected the effectiveness of water management"[12]. There are many bureaus and departments involved in the management of the urban water sector, resulting in a highly fragmented and inefficient management system.

Apart from the inefficiency within the traditional operation mechanisms, the other problem faced by the China's urban water sector is the lack of capital and advanced technology. In a recent report investigating the development of China's urban water reform, the author suggested that, "[t]here is a general phenomenon of waste of resources and low efficiency when the state funding is the major financial source of the water sector", and "[t]he budget management is not monitored properly and thus cannot identify and correct the inappropriate uses of funding or wastes promptly"; therefore, "[t]he planning is unscientific, as well as building many facilities that are not operational"[13].

The underinvestment of China's water sector further contributes to the water shortage problem, as a huge amount of water is being wasted through leaky pipes each year. It is estimated that about 20% of the urban water is lost annually due to the leakage problem, but the replacement of the aged leaky pipes is often extremely slow because of the lack of capital.

12 Ibid, p.30.

13 China Huaya Water Industry Investment Preparation Group. (2007) *China Urban Water Industry: Reform and Development Report*, China Environmental Science, Beijing, p. 22.

Finally, the supporters of the marketization of the urban water supply strongly believe that by increasing water price, it could reduce the demand for and improve the efficiency of water use. They believe that the water tariffs in China should be raised to truly reflect the scarcity of water. In other words, instead of focusing on meeting the demand, the government should aggressively manage water demand through pricing.

The problems mentioned above (i.e. inefficient management, and the lack of capital and advanced technologies) have become the predominant arguments for supporting the marketization reform of China's urban water sector. As summarized by Dr. Tao Fu, one of the leading water experts in China, there are two major motives for the marketization reform:

"One is to attract investment, as the government alone cannot satisfy the demand created by the rapid urbanization; the other is to improve operational efficiency and service level of the water industry, and realize sustainable development of the sector.[14]"

1.2 Key Findings from the Previous Report

1.2.1 Background

In light of the internal pressure of capital shortage and the external pressure of globalization, the public sectors in China have experienced several stages of reform and undergone a certain degree of privatization. For example, the water sector in many big cities today is now being operated as joint ventures between local governments and transnational water corporations or local water companies. Due to lack of transparency and public participation,

14 Fu,T., Chang, M., and Zhong L. (2008) *Reform of China's Urban Water Sector*. IWA Publishing, p.34.

however, we have found that people were generally ignorant about the water management problems in China.

In 2009, we conducted 300 questionnaires with members of the general public in six cities in the southern region (including Shenzhen, Guangzhou and Dongguan in Guangdong province; Fuzhou, Xiamen and Quanzhou in Fujian province) to study the impacts of the privatization of water supply in mainland China. The survey was not carried out with randomized sampling, but purposive sampling. Most of our interviewees were grass-root people of the mainland China since we aimed to investigate how their lives were affected by the privatization.

The results were then published in early 2010[15], and they served as a pilot study to understand the water privatization issue in China, paving the way for further action including public education, networking, exchanges, lobbying and campaigning.

1.2.2 Four Stages of the Development of China's Urban Water Supply

Stage I: From 1949 to 1979

When China started to establish a socialist regime in 1949, it also established a Command economy characterized by the centralization of production, ownership and resource redistribution. At that time, the government was the main body responsible for the investment, construction and operation of public utilities. Urban water sectors were State-Owned-Enterprises (SOEs), and financial support came from the central government. In return, the profits made by the water entities were handed over to the central government for reallocation. Water supply services were

15 Chu, S. (04/2010) *The Reform of the Urban Water Supply in Southern China*. Globalization Monitor.

provided and managed as a form of social welfare, and so either cost little or were free of charge.

Stage II: From the early 1980s to mid-1990s

China started to experience rapid urbanization with an increasing demand for water supply and wastewater treatment infrastructures. The water supply plants and wastewater plants still enjoyed certain governmental subsidies. At that time, local governments built their water plants by taking inter-governmental loans, or taking loans from international financial organizations where the governments acted as guarantors and ownership of water plants belonged to the local governments. In 1994, the Urban Water Supply Regulation promulgated by the State Council stipulated that "urban household water tariffs should be set in accordance with the principle of cost recovery and trivial profit". The water tariff was subsequently raised substantially.

Stage III: From the mid-1990s to 2002

Industrialization and urbanization continued with severe water pollution problems. The demand for China's wastewater treatment infrastructure much exceeded supply. In order to solve the water pollution and capital shortage problems, the Chinese government started to introduce the Public-Private partnership (PPP) and the Build-Operate-Transfer (BOT) approach into the field of its urban water infrastructures. This was based on two policy papers issued by the Chinese government in the mid-1990s: The *Circular on Attracting Foreign Investment through BOT Approach*, and the *Circular on Major Issues of Approval Administration of the Franchise Pilot Projects with Foreign Investment*. Household water tariffs kept rising during this period, but wastewater treatment and water resource costs were not included as part of the water tariff.

Stage IV: From 2003 to the present

In December 2002, the Chinese government showed her determination regarding full scale water privatization by promulgating another policy paper, *Opinions on Accelerating the Marketization of Urban Utilities*. In this document the central government encourages local governments to open the doors of urban utilities to foreign and domestic private investors. It also states that the formerly state-monopolized sectors should open the market and introduce competition as a mechanism to improve their management. Both foreign and domestic water corporations participate actively in China's water supply and wastewater industries. The issue of the fixed investment return has been modified in the contracts, thus in most cases, private investors have to share the risks.

In addition, the water tariff reform with full-cost recovery has been promoted and part of the wastewater treatment costs has been included in the water bill in many cities. Household water tariffs are expected to go on rising because the extent of water commercialization is becoming greater and greater, together with the increasing wastewater treatment costs.

1.2.3 Study of the Six Cities

The tables below summarise the key findings of each of the studied cities from the previous report:

Table 1: A Summary of the Water Supply and Development Water Supply Companies in the Six Cities

Part I: Figures related to City Development and Water Supply Condition

	Guangdong Province			Fujian Province		
	SZ	**GZ**	**DG**	**FZ**	**XM**	**QZ**
Annual economic growth (%)	NA	10.0	22.0	10.8	11.1	17.6
Water resources per capita (m^3) (Note 2)	235	1,375	322	12,500	970	1,292
Tap water services coverage rate	> 99.0	NA	NA	NA	98.9	98.0
Wastewater treatment rate (%)	> 88.0	71.3	> 60.0	80.0	83.0	83.0
Household water fee in 2009 for consuming 25 m^3 of water (¥)	73.15	55.5	47.5	55.45	75	61.25
Practicing progressive water pricing	Yes	Not yet; starts in 2010	Yes	Yes	Yes	Not yet, but soon

Note 1: SZ – Shenzhen; GZ – Guangzhou; DG – Dongguan; FZ – Fuzhou; XM – Xiamen; QZ – Quanzhou.

Note 2: According to the standard defined by the UN, an annual water availability of 2,000 m^3 or less per capita is regarded as "Water Stress," where 1,000 m^3or less per capita is regarded as "Water Scarcity."

Note 3: These figures are up to the year of 2009, please refer to the text for accurate year of the figures for each city.

Part II: Water Supply Companies		
City	**Main Water Supply Company**	**Ownership and Years of Reform**
SZ	Shenzhen Water Group	o Transformed in 2001 o Veolia and Beijing Capital Group hold 45% of ownership in 2003 o Shenzhen government owns 55%
GZ	Guangzhou Water Supply Company	o State-owned water company o Guangzhou Water Investment Group was founded in 2008
DG	Dongguan Dongjiang Water Co. Ltd (DJWS)	o Did not have a main water supply company until 2002 o DJWS is a state-owned enterprise (SOE), established in 2002
FZ	Fuzhou Water Supply Co. Ltd.	o State-owned water company o Reform took place in 2008; the Fuzhou Water Investment and Development Co. Ltd. was founded o Is going to sell 49% to private investor; bidding procedure will be started in 2010
	Fuzhou Economic and Technological Development Zone (ETDZ) Water Company	o A former SOE; o In 2004, sold 72% to the China Water Co. Ltd. where Thames Water is a major shareholder, and set up a Joint Venture
XM	Xiamen Water Co. Ltd.	o A former SOE; transformed in 2003 o In 2004, transferred 45% of water supply and 55% of wastewater treatment to General Water China, a domestic private water company from Shanghai
QZ	Quanzhou Water Supply Co. Ltd.	o State-owned water company o Has 2 projects with private capital involvement o In 1994, formed a Cooperative Joint Venture with the South Asia Group, a HK company o In 2006, formed an Equity Joint Venture with another private investor

1.2.4 The Major Problems with the Urban Water Supply

Poor water quality

Of the 300 people we interviewed, on average, 77.7% said that they were "not comfortable" with the tap water quality, and the percentages were higher in the three cities in Guangdong than those in the Fujian province. We identified two major contributing factors for the poor water quality: i.) substandard water treatment; and ii.) secondary pollution.

Table 2: The Percentage of People Feeling "Not Comfortable" with the Quality of the Tap Water in the Six Cities

Province	City	Percentage
Guangdong Province	Shenzhen	88.3%
	Guangzhou	86.7%
	Dongguan	78.3%
Fujian Province	Fuzhou	80.0%
	Xiamen	56.7%
	Quanzhou	53.3%
Overall:		**77.7%**

Bottled water and water vending machines

The poor quality of tap water promotes the growth of bottled water and the water vending machine industries in China. There are usually different markets for tap water and bottled water; however, we found that many people we interviewed were forced to spend extra money on buying bottled water or water from vending machines because of the poor quality of tap water (See

Table 3).

Table 3: People's Consumption Patterns on Bottled Water and Vending Machine Water

	Overall (%)	SZ (%)	GZ (%)	DG (%)	FZ (%)	XM (%)	QZ (%)
Have you ever bought bottled water for home use?							
Often	37.7	41.7	38.4	55.0	23.3	26.7	33.3
Occasionally	25.0	26.7	23.3	20.0	15.0	43.3	36.7
Total:	**62.7**	68.4	61.7	75.0	38.3	70.0	70.0
What is the main reason for you to buy bottled water?							
Cheaper than tap water	0.0	0.0	0.0	0.0	0.0	0.0	0.0
More convenient	**53.0**	58.5	48.6	44.4	78.3	55.6	38.1
Better quality	**43.7**	41.5	48.6	48.9	21.7	44.4	52.4
Have you ever bought water from vending machines?							
Often	11.7	11.7	11.7	18.3	13.3	3.4	3.3
Occasionally	36.7	60.0	26.7	33.3	38.3	43.3	6.7
Total:	**48.3**	71.7	38.3	51.6	51.6	46.7	10.0#
What is the main reason for you to buy vending machine water?							
Cheaper than tap water	1.6	0.0	8.7 *	0.0	0.0	0.0	0.0
More convenient	**68.3**	79.1	56.5	61.3	61.3	92.9	33.3
Better quality	**29.7**	20.9	30.4	38.7	38.7	7.1	66.7

\# A lower percentage here because water vending machine in Quanzhou is not as common as in other cities

* Interviewees who live in urban village.

Water tariffs

We found that 10.3% of people thought water bills were a burden, while the majority, which counted for 66.3%, thought that their water bills were quite 'fair' (Table 4). However, we believe that these figures may not reflect a complete picture of the burden of water bills on our interviewees. This is because many of them have tried to save as much water as possible in their daily lives in order to keep their water bills at a minimum, and that is why water bills are not a burden to them. For instance, some families stopped using washing machines because they had found that the use of a washing machine cost a lot in both water and electricity bills. Another strategy for minimizing water bills is by reusing water. This was very common amongst our interviewees, especially those with lower incomes.

Table 4: Percentages Showing the Impacts of "Water Bills" and "Water Tariffs" on People's Incomes

Do you think the water bills are a burden to you?	**Burden**	**10.3 %**	Do you think the current water tariff is reasonable?	**Too high**	**43.0 %**
	Fair	66.3 %		Reasonable	54.3 %
	Not at all	21.7 %		Too low	1.3 %
	Missing	1.7 %		Missing	1.3 %
	Total	100 %		Total	100 %

Management and service quality

We identified another five major complaints people made about the management and services provided by the water firms:

I. No service at all: Most interviewees said, "I do not see any service they have provided to us." There is no other service provided by the water companies in addition to providing tap water. One interviewee shared her experience, "the

only service they provided is recording the meter readings, but sometimes they didn't come to record it but just give an estimation and sent us the bill."

II. Bureaucracy: A young man from Guangzhou says, "It is a tradition for the government to do nothing. When you complain, they won't do anything. They will wait for some time and see if you complain again or not. Sometimes the government treats you like a football and kicks you to this department and that department. It's just wasting your time. All they have done is, wait for you to forget this."

III. Abuse of power: When we asked a family in Fujian if their household water pipes have been improved in the past years, they reply, "Improved? Of course they have improved! The staff come to us every two or three years and told us that they were going to 'improve' our pipes for us. The pipes of our building have been changed 3 times in 10 years. And of course we have to pay for it and that's exactly what they want actually."

IV. Corruption: It is difficult for the general public to give examples with solid evidence, but they tend to think corruption is an open secret. A contract staff member of a water company in Guangzhou told us about his observation, "The officials receive year-end bonus every year, and they all carry travel bags to put the cash! Ninety percent of the managerial staff own private cars, the other 10% of staff do not have cars mainly because they are gamblers or big spenders."

V. Unemployment: Laying off staff is a common movement after a water firm is transformed into a profit making company, in the name of "downsizing the organization structure." According to the staff we interviewed, on average, their companies fired about one third of workforce after

becoming shareholding companies. A contract staff of a township water firm in Guangzhou told us that, a water firm next to his town had fired almost 80% of the staff after being purchased by a larger water firm, Panyu Water Co. Limited.

Governance system

Ambiguous division of administrative power and responsibility:

I. As we have mentioned earlier, there are many bureaus and departments involved in China's urban water supplies and water reform. As a result, there is no clear definition of their respective responsibilities and authorities, and this largely contributes to the problem of disorganized management and inefficiency which affects the quality of water supply, as well as results in wastes of resources. It is common that every department tries to run away from responsibilities when problems occur.

II. No transparency and low public participation:

III. The reform of the water supply is a long-term process and involves many stakeholders and procedures. However, most of our interviewees did not have a clue about what water reform or water marketization is. A public hearing is supposed to be held before the water companies change the water tariff but the usefulness of the hearings is doubtful since the attendees are invited by the government or water firms and there is usually only a few seats for the general public.

IV. Lack of monitoring mechanism and legislation:

V. After two decades of water marketization, capital constraint is no longer the main problem for China's water sector. In-

stead, the incomplete monitoring system and legal framework have become the main obstacles. The local governments do not realize that they have changed their role from service supplier to service regulator and observer after water privatization. Hence, it is a common phenomenon that local governments withdraw themselves completely from public utilities once the water supply has been privatized. The other thing is that the marketization reform of and the private participation in China's water sector are conducted under various governmental policy papers instead of specialized legislation.

Chapter 2
New Trends in China's Urban Water Reform

Water is the most critical resource issue of our lifetime and our children's lifetime. The health of our waters is the principal measure of how we live on the land.

---by Luna Leopold (1915-2006), a world leading hydrologist and geomorphologist

2.1 Updates for the Six Studied Cities

2.1.1 Shenzhen

Rapid expansion of Shenzhen Water Group

Shenzhen's water sector was among the first in China to begin the marketization reform. In 2003, Beijing Capital Group together with Veolia Water Investment Company acquired 45% of Shenzhen Water Group (SZWG). It remains the largest water project involving a foreign joint venture in China to date. During the marketization reform, SZWG devoted not only to the integration of the city's water supply, drainage and sewage treatment, but also to expanding its business throughout the country.

In 2005, SZWG established a new company---"Shenzhen Water Investment Company Limited" (SZWIC) with a state-owned

enterprise[1]. By 2007, this company had already invested in 17 water supply and waste water treatment projects in 7 provinces, including Shandong, Jiangsu, Zhejiang, Anhui, Jiangxi and Guangdong[2]. SZWG further integrated its business in Shenzhen by taking over China Merchants Shekou Industrial Zone Water Supply Limited Company this year, which was responsible for the water supply and drainage services for the 300,000 households in the Shekou Industrial Zone in Shenzhen[3].

Profit maximization? Cost recovery?

Being one of the ten cities in China with the most severe water shortage problem, water tariff increase is always a hot topic in Shenzhen. The last water tariff adjustment in Shenzhen was in 2004 and the comprehensive water price was increased from ¥1.96 / m^3 to ¥2.34 / m^3 (i.e. 19.2% increase). In January 2010, SZWG arranged a public hearing for the water tariff increase and 4 different proposals were put on the table. No matter which one was chosen, the minimum rate for residential consumers would be raised by over 30%, from ¥1.9/ m^3 to at least ¥2.5 / m^3[4]. After the hearing, there were lots of voices from the public challenging the proposed increase.

To summarize, there are at least four doubts in the public's mind:

1 Shenzhen Water Investment Co. Ltd. "Shareholders' Background" http://www.waterchina.com/swtz/catalog_7392.aspx (Retrieved on 25/11/2010)

2 People's Net. (08/07/2008) "Shenzhen Water: National Water Flagship to Create a World-Class SW Brand" http://ccnews.people.com.cn/BIG5/87473/124989/124999/7491772.html (Retrieved on 25/11/2010)

3 Shenzhen News. (22/12/2010) "Shenzhen Water Group Undertaking Shekou's Water Supply, Water Tariff Won't Change" http://news.sznews.com/content/2010-12/21/content_5190708.htm (Retrieved on 28/12/2010)

4 China News. (21/01/2010) "Shenzhen Water Tariff Public Hearing Today, Four Most Crucial Questions Raised by the Citizens Needed to be Answered" http://www.chinanews.com/cj/cj-gncj/news/2010/01-21/2083300.shtml (Retrieved on 25/11/2010)

1) Might the 30% increase of the minimum water rate be too high?

This is especially the case for the migrant workers who live in the urban villages since they are usually the ones with the lowest wages. Unlike the locals, migrant workers pay their water fees to their landlords. If the water price for local residents is increased to ¥2.5 / m^3, migrant workers will probably have to pay ¥7 to ¥9/ m^3.

2) Is foreign investment the cause of the frequent increase in the water tariff?

During the hearing an attendee raised a crucial question, "how could a water firm uphold its public welfare nature if there are foreign investments involved, and all it wants is to pursue a higher profit?" SZWG argued that they had to raise the price because the profit that they had been making so far was below the 6-8% allowable profit-to-asset ratio. SZWG's net profit in 2008 was 25.9 million RMB, which was about 0.84% of its total asset. Therefore it is not that the company is not making a profit, it is just that they want to make a greater profit.

3) Can the increase in water tariff promote water saving?

It seemed to some attendees that merely increasing the price would not be able to help conserve water.

4) Why does SZWG not present its financial report to public?

SWG claimed that they were going to have a deficit if the water price was not raised in time, but some attendees complained that SZWG's financial report was nowhere to be found. If cost recovery is the reason for the price increase, the water company should at least do a cost auditing and release its financial report to the public.

2.1.2 Guangzhou

The long-overdue pricing reform still has not been put into practice

In 2005, in order to promote water saving, Guangzhou Water Supply Company (GWSC) proposed to change the uniform pricing to progressive pricing scheme (aka increasing block-rate pricing) for both residential and non-residential water consumptions. The company also proposed a raise to the water price. What people were paying at the time was a uniform rate of ¥0.9/m³. Under the new proposal, the pricing scheme would have 3 prices for 3 different water consumption levels: ¥1.32/m³ (≤ 22 m3); ¥1.98/m³ (23-30 m3); ¥2.64/m³ (30 m3 ≥)[5]. The proposal was soon approved by the government.

All these were supposed to come into effect from January 1st 2006. However, all people have seen up until now is only a change to the water price without the progressive pricing. Some people got very angry about it for two major reasons. Firstly, many Guangzhou people agreed to the water price increase only because they thought that the progressive pricing scheme could help to change Guangzhou into a "water saving city"[6]. Secondly, an increase from ¥0.9 to ¥1.32/m³ was such a huge jump (46.6%) in such a short period of time.

GWSC said last year that the progressive pricing scheme would be in place before the 2010 Asian Games. The Games have already finished but the long-overdue pricing reform still has not

5 South Net. (24/12/2005) "Progressive Water Tariff Will be in Effect Staring Next Year" http://www.southcn.com/news/dishi/guangzhou/shizheng/200512240077.htm (Retrieved on 20/11/2010)

6 China Water Net. (05/01/2006) "Guangzhou Citizens Complaint about the Non-Progressive Price Increase" http://news.h2o-china.com/html/2006/01/440181136449320_1.shtml (Retrieved on 20/11/2010)

been implemented[7]. The company's explanation for the delay was that the "one-household-one-meter" program has not been finished and this is the prerequisite for progressive pricing[8].

Increase in waste water treatment fees

Since July 2009, the fee for domestic waste water treatment was raised from ¥ 0.63/m³ to ¥ 0.9/m³, which was a 42.8% increase. Again, the company explained that they have to increase the fee in order to promote the idea of water conservation among the citizens and to encourage the industries to reduce the amount of sewage by using more advanced technology.

2.1.3 Dongguan

Implementation of progressive pricing system for domestic water

Dongguan has just finished its water pricing system reform recently. Starting from October 2010, the water company of the city switched from uniform pricing to progressive pricing scheme9. The main reason for implementing progressive water pricing is to provide an additional incentive for water conservation. From now on, the more water one consumes the more one has to pay. Under the new pricing scheme, there are 3 different rates (the ratio: 1: 1.5: 2) for different consumption levels. These are shown in the table below.

7 Sina. (30/07/2009) "Progressive Pricing Will Come into Effect in Guangzhou before Asian Games" http://finance.sina.com.cn/china/dfjj/20090730/07286547615.shtml (Retrieved on 20/11/2010)

8 Xinhua Net. (29/07/2009) "Progressive Pricing Will be Implemented before Asian Game" http://big5.xinhuanet.com/gate/big5/news.xinhuanet.com/life/2009-07/29/content_11789843.htm (Retrieved on 20/11/2010)

9 Guangzhou Daily. (14/09/2010) "Guangzhou Dongguan: Progressive Water Pricing Will be Fully Implemented before October" http://www.gdwsa.cn/Price/News/3711.htm (20/11/2010)

Table 5: The New Progressive Water Pricing for Residential in Dongguan City			
Households with up to 4 persons		One-person households (applies to hostels, rental houses; or every extra family member in a household)	
Revised Proposal	Price (¥)	Revised Proposal	Price (¥)
≤ 22 m^3	Normal price	≤ 5 m^3	Normal price
22 m^3 - 30 m^3	Normal price x 1.5	5 m^3 - 6 m^3	Normal price x 1.5
30 m^3 ≥	Normal price x 2	6 m^3 ≥	Normal price x 2

Water tariff increase

November 17, 2010, the Dongguan government approved the request by the Dongguan Price Bureau to increase the water price[10]. According to Dongguan Dongjiang Water Company Limited (DJWC)'s recent announcement, the comprehensive water price[11] would increase from ¥0.985/m^3 to ¥1.15/m^3 immediately (i.e. 16.75% increase), and the water price would be further increased to ¥ 1.26/m^3 starting from March 1st, 2012. DJWC explained that the adjustment was much needed because the water resource fee charged by Guangdong province had been increased from 0.025 ¥/ m^3 to 0.12 ¥/ m^3 since April 2009, hugely increasing the company's operational costs.

In fact, most of the citizens in Dongguan were paying a much

10 Dongjiang Shui Wu Co. Ltd. (18/11/2010) "Water Price Increased Starting Next Month" http://www.djsw.com.cn/news/20101118/n4926630.html (23/11/2010)

11 This refers to the average water price for industrial and agricultural work units, the Party and governmental departments and local residents.

higher water price than ¥ 0.985/m³. The charging for water in Dongguan is extremely chaotic and un-standardized. People living in different areas of Dongguan are paying different water prices. The table below shows the actual rates and the impacts on people after the increases.

Unit: ¥ / m³

Table 6: Water Prices Charged by DJWC Before and After the Price Adjustment *

Town street	Comprehensive water price before adjustment	Residential water tariff		
		1st increase (Dec 1st, 2010)	2nd increase (March 1st, 2012)	% increase after the adjustment in 2012
Liaobu	1.55	1.65	1.70	9.7%
Dailong	1.63	1.65	1.70	4.3%
Dongkeng	1.59	1.65	1.70	6.9%
Dalingshan	1.56	1.65	1.70	9.0%
Hungmei	1.59	1.65	1.70	6.9%
Wangniudun	1.47	1.65	1.70	15.6%
Daojian	1.68	1.65	1.70	1.2%
Mayong	1.63	1.65	1.70	4.3%
Houjie	1.70	1.72	1.78	4.7%
Shatian	1.74	1.72	1.78	2.3%
Humen	1.65	1.72	1.78	7.9%
Changan	1.64	1.72	1.78	8.5%
Zhongtang	1.50	1.45	1.55	3.3%

* South Net. (23/11/2010) "Water Tariff Will Increase Next Month in 13 Street Districts in Dongguan, Water Tariff for Central District Will be Set Next Year" http://news.southcn.com/d/2010-11/23/content_17838418.htm (Retrieved on 23/12/2010)

As we can see, the percentage increase after the adjustment in 2012 will range from 1.2% to 15.6%. For some the increase might not affect their lives too much but for others the rapidly increasing water price might become a heavy burden. A public

hearing was held before the increase, and 17 out of the 32 attendees were consumers. 7 of the consumers expressed their disagreement towards the proposed increase because they thought that the water prices were already too expensive. For instance, during the hearing, a lady presented a pile of water bills she had received in the past 6 years, which showed that the water price had already been adjusted 5 times since 2004, increasing from ¥1.55/m³ to ¥2.15/m³[12]. In addition, the waste water treatment fee for domestic water in Dongguan, which is also a part of the water tariff, had been increased from ¥0.7/m³ to ¥0.75/m³ since December 1st, 2009[13].

2.1.4 Fuzhou

Increase in water tariff

Before September 2010 the minimum water price for residents under the progressive pricing scheme was ¥1.2/m³ and the waste water treatment fee was ¥0.85/m³. Nevertheless, the Fuzhou government approved the water price increase suggested by Fuzhou Water Company Limited on August 5th 2010. For the residential consumers, the price increase is divided into two stages. In the first stage, the price would be increased to ¥1.4/m³ starting from September 2010. In the second stage, the price would go up to ¥1.7/m³ beginning in September 2011. In order words, there would be an overall 41.7% increase in residential water price within two years[14].

12 GDCCT. (29/09/2010) "Public Hearing Held Yesterday in Dongguan, Over Half of the Consumer Representatives Opposed the Proposed Water Tariff Increase" http://www.gdcct.gov.cn/politics/guangdong/201009/t20100929_347305.html (Retrieved on 23/12/2010)

13 Dongjiang Shui Wu Co. Ltd. "Water Tariff and Waste Water Treatment Fee" http://www.djsw.com.cn/zfbz.html (Retrieved on 23/12/2010)

14 Fuzhou Water Co. Ltd. "Water Tariff" http://www.fzwater.com/companyopen/waterprice.aspx (Retrieved on 23/12/2010)

Some citizens of Fuzhou criticized the price rise, saying that "the water resources in Fuzhou are fairly abundant since Minjiang River is the largest water system in the province, and the water quality is pretty good…why is the company's operational cost still high? Can someone explain that?" Some said that, "they say the cost is high and the company is losing money all the time! Where does the high cost actually come from?[15]" In other words, for most people, whether or not the water company can present a clear and accurate financial or cost auditing report is the pre-requisite for any water tariff increase.

Equity transfer still yet to come

The Fuzhou government adopted the suggestion by the State-owned Assets Supervision and Administration Commission (SASAC) of Fuzhou to transfer a 49% of share of Fuzhou Water Co. Ltd to private investors in July 2008[16]. However, there has not been much progress with the transfer since then.

2.1.5 Xiamen

Xiamen is a city composed of islands and it has long been suffering from a serious water shortage problem. This is one of the reasons why Xiamen is among the first cities in the South to transform itself successfully into a water-saving city. There was a rumour in early October 2010 that the water tariff in Xiamen might soon increase due to the rising water resource price[17]. If the

15 Fujian China News. (16/12/2009) "Fujian Water Tariff Increases by 41.7%" http://www.fj.chinanews.com/news/2009/2009-12-16/71883.shtml (Retrieved on 23/12/2010)

16 China Water Net. (02/01/2009) "Fuzhou Water Undergoing Low-Profile Reform" http://news.h2o-china.com/market/watermarket/773511230889045_1.shtml (Retrieved on 23/12/2010)

17 China Water Net. (11/08/2010) "A Potential Change in Xiamen's Water Tariff" http://news.h2o-china.com/html/2010/08/671281491603_1.shtml (Retrieved on 23/12/2010)

price rise becomes real in the near future, the burden it creates for low income families would probably outweigh its positive effects in water saving. Since the amount of water consumed by ordinary households is very basic, the rise in the water price will not change their water consumption much.

2.1.6 Quanzhou

Poor water quality

Among the people who support the marketization reform in public utilities, there is a common belief that the water supply quality and efficiency can be improved by introducing foreign companies to China's water sector. However, this is obviously not the case in Quanzhou. Neither the cooperative joint venture (established in 1994) nor did the equity joint venture (established in 2006) of Quanzhou Water Supply Company Limited helped to increase the water supply services in Quanzhou.

Photo 3: Soy-sauce looking tap water coming from the tap of a Quanzhou household. (Source: http://fjnews.66163.com/Fujian_w/dskx/20081105/xs266323.html)

Quanzhou citizens have repeatedly reported to the media that the tap water they got looked like "soy sauce" (see picture above). In October 2008 people living in different areas of Quanzhou reported to a local newspaper that they found lots of precipitants and even a worm in the tap water[18].

18 Fujian Window. (05/11/2008) "Quanzhou: Tap Water Sometimes Looks Like Soy Sauce, Sometimes Looks Like Blood, Sometimes Even Has Worms" http://fjnews.66163.com/Fujian_w/dskx/20081105/xs266323.html (Retrieved on 23/12/2010)

Photo 4: Sometimes worms could be found in Quanzhou's tap water. (Source: same as above)

Photo 5: Some Quanzhou citizens had to filter the water with a towel. (Source: same as above)

Some said that they had been calling the water supply company about the poor water quality for half a year but the water still looked the same. The water was not suitable even for washing clothes so some people had to filter the water using things like towels. Up until recently, the water quality of Quanzhou still has not been improved. On April 2010, Quanzhou citizens reported to the media that they had soy-sauce-looking water coming out from the tap[19] (see picture below).

Photo 6: Another independent source also reported similar stories concerning the poor tap water quality in Quanzhou. (Source: http://www.qzwb.com/gb/content/2010-04/22/content_3317607.htm)

19 Quanzhou Net. (04/22/2010) "Sauce-Soy Looking Water Coming Out from Tap" http://www.qzwb.com/gb/content/2010-04/22/content_3317607.htm (Retrieved on 23/12/2010)

2.2 Map of China's Urban Water Supply Models

In this section we want to investigate the degree of privatization of China's urban water by mapping models of the provision of water supply in different cities throughout the country. The second purpose of this section is to identify the recent trends and characteristics of the urban water reform.

2.2.1 Method

Since the water supply system in China is extremely fragmented and therefore complicated, it would be very difficult for one to identify any significant trend without systematic grouping and simplification. Not only could each province have a completely different water supply system, but different cities in the same province could each have a different model as well. Even within a city it is not unusual to have one district's water supplied by a state-owned water plant, while in another district it is supplied by a privately-owned plant. For example, as a solely state-owned enterprise, Hangzhou Water Group Company Limited has 5 water plants but the concession right of one of the water plants was sold to a private company[20] for 30 years in 2000.

Having considered the complexity, we decided to simplify it by using the capital city of provinces or autonomous regions as an indicator. The most developed cities are usually the first to be targeted for marketization reform since the profitability of these cities' water companies are usually higher than the regular cities. Capital cities are generally more developed than regular cities, so the map generated by using the method might not be indicative of China as a whole. Nevertheless, the map gives us a sense for the overall trend of China's urban water supply.

20 Qianjiang Water Resources Development Company Limited

Despite the fact that waste water treatment is closely related to water supply, this map concentrates merely on water supply (including meter, pipeline and water plant). Waste water treatment is ignored here, even if a water company is involved in both water supply and waste water treatment. However, it is worth mentioning that the degree of foreign involvement is actually much higher in waste water treatment then in water supply. By 2007, the total direct or indirect involvement of foreign water corporations in China's waste water treatment projects was estimated to be 50 to 70%, while it was only 15 to 20% for the water supply projects[21]. We also ignore other businesses such as real estate, hotel, transportation, etc owned by the water companies, although it is quite common for a water company to have multiple businesses.

We focus on five types of reform models here, although types other than these five also exist[22]:

- Solely State-Owned (both the parent company and its subsidiaries): While the ownership of public utilities still belongs to the state, the utilities are reformed and operated using commercial principals.
- Stock Transfer: This refers to the shares of a water company (whether listed or unlisted) transferred by sale to other private companies or members of society.
- Foreign Joint Venture: An originally state-owned water company uses part of its assets to setup a joint venture company with foreign investors. The newly formed joint venture company can then partially or entirely operate the designated utility.

21 Ge, Y. and Wu, Y. J. (2008) *Are We Losing the Water? ---A Study and Reflection on China's Urban Water Privatization*, Xinjiang Conservation Fund, 2008.

22 Fu,T., Chang M. ,and Zhong L. (2008) *Reform of China's Urban Water Sector*, IWA Publishing, p.40.

- Local Joint Venture: Similar to foreign joint venture but this time the joint venture company is formed between the state-owned water company and local company.
- BOT/TOT: BOT stands for Build-Operate-Transfer, and TOT refers to Transfer-Operate-Transfer. In both cases the government still owns the pipelines and retains the right to collect fees, while the right to operate the water plants are shifted to a private company for a limited time (e.g. a 20-year term). BOT is mainly applied to new projects and TOT is applied to existing projects.

Figure 1: Map of China's Urban Water Supply Models

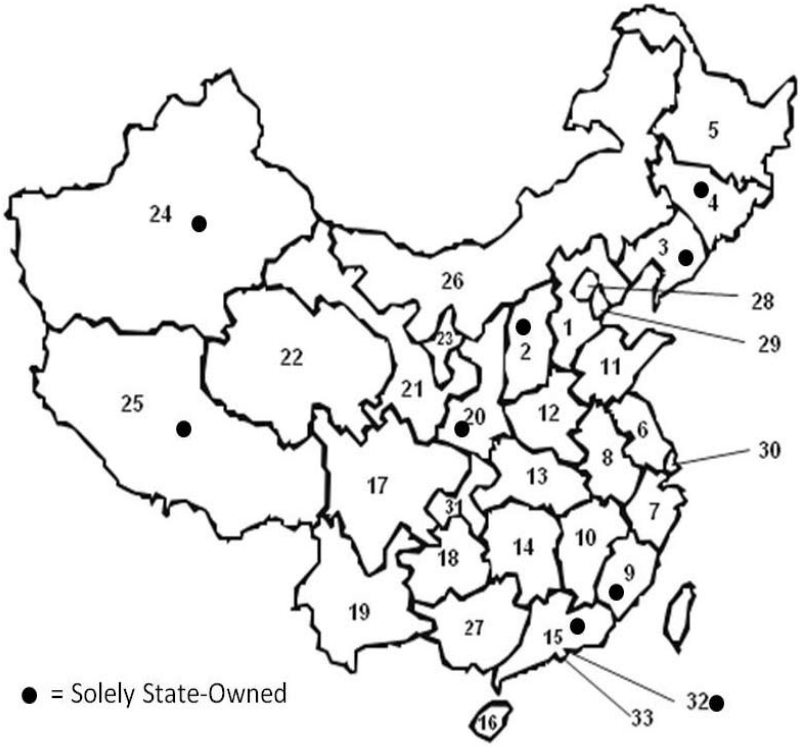


Table 7: Mapping the Models of China's Urban Water Supply Across the Country

# on Map	Province	Capital city	Water supply models				
			Non-WSO (Either Parent or Subsidiaries)				WSO [1] (Both parent and sub-sidiaries)
			Local joint venture and part-nership	Foreign joint venture and part-nership	BOT/ TOT	Stock transfer	
1	Hebei	Shijiaz-huang	√ (water plant)				
2	Shanxi	Taiyuan					√
3	Liaoning	Shenyang					√ [2]
4	Jilin	Changchun					√
5	Heilongji-ang	Harbin		√ (water plant)			
6	Jiangsu	Nanjing	√ (pipeline)				
7	Zhejiang	Hangzhou	√ (pipeline)	√ (water plant)			
8	Anhui	Hefei	√				

[1] WSO is the abbreviation for the term "Wholly State-Owned", whereas Non-WSO stands for "Non-Wholly State-Owned".

[2] Shenyang Tap Water Company is a very interesting sample. It once tried to privatize its water services through BOT, foreign joint venture and becoming a listed company but now it has switched back to wholly state-owned. We will discuss the case of Shenyang in greater detail later in this sector.

# on Map	Province	Capital city	Water supply models				
			Non-WSO (Either Parent or Subsidiaries)				WSO [1] (Both parent and sub-sidiaries)
			Local joint venture and part-nership	Foreign joint venture and part-nership	BOT/ TOT	Stock transfer	
9	Fujian	Fuzhou [3]		√ ETDZ [4]			
10	Jiangxi	Nanchang		√		√ (water plant)	
11	Shandong	Jinan		√ (water plant)			
12	Henan	Zhengzhou		√ (water plant)			
13	Hubei	Wuhan		√ (meter)		√ (water plant)	
14	Hunan	Changsha	√				
15	Guangdong	Guangzhou					√
16	Hainan	Haikou		√			
17	Sichuan	Chengdu			√ (BOT)	√	
18	Guizhou	Guiyang	√			√	
19	Yunnan	Kunming		√			

[3] It is reported that the Fuzhou government has formed a new company "Fuzhou Water Investment and Development Company Limited" in December 2008 with the aim to integrate the city's water supply, drainage and sewage treatment, and it planned to transfer 49% share of the company through bidding in the near future. (see: http://finance.sina.com.cn/china/dfjj/20081231/16105708159.shtml)

[4] This only applies to the Economic and Technological Development Zone (ETDZ) of Fuzhou.

# on Map	Province	Capital city	Water supply models				
			Non-WSO (Either Parent or Subsidiaries)				WSO [1] (Both parent and sub-sidiaries)
			Local joint venture and part-nership	Foreign joint venture and part-nership	BOT/ TOT	Stock transfer	
20	Shaanxi	Xi'an					√ [5]
21	Gansu	Lanzhou		√			
22	Qinghai	Xining				√	
Autonomous Regions							
23	Ningxia	Yinchuan	√			√ [6]	
24	Xinjiang	Ürümqi					√
25	Tibet	Lhasa					√
26	Inner Mongolia	Hohhot		√			
27	Guangxi	Nanning [7]	√				
Municipalities							
28	Beijing				√ (BOT)		
29	Tianjin			√		√	

[5] On June 2009, the Xi'an government announced its plan to change the city's water company into a listed company. (See: http://www.c-water.com.cn/news/nco/20090625/9865.html)

[6] The China Railway Group Limited was awarded a 49% share of Yinchuan Water Supply Company on August 25th, 2010. (See: http://biz.cn.yahoo.com/10-08-/136/y6e9.html)

[7] On 23rd July 2010, Guangxi Nanning Water Company Limited announced that it was preparing to become a listed public. (See: http://gxrb.gxnews.com.cn/html/2010-07/23/content_416201.htm)

# on Map	Province	Capital city	Water supply models				
			Non-WSO (Either Parent or Subsidiaries)				WSO [1] (Both parent and sub-sidiaries)
			Local joint venture and part-nership	Foreign joint venture and part-nership	BOT/ TOT	Stock transfer	
30	Shanghai [8]			√		√	
31	Chongqing			√		√	
Special Administrative Regions							
32	Hong Kong						√
33	Macau			√			
Percentage (out of 33)			24%	46%	7%	27%	24%

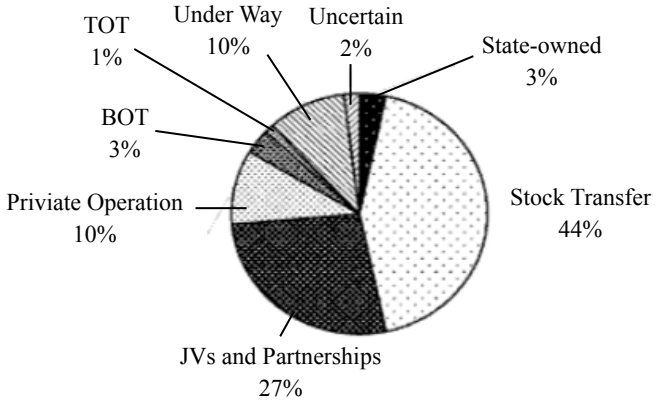
[8] In 2004, the Shanghai government terminated the BOT contract of the Da Chang Water Plant Project signed with Thames Water in 1996, which originally awarded Thames Water a 20-year service term.

2.2.2 Discussion

In terms of the water companies' financing, the overall degree of privatization among the cities concerned was very high. Only 24% of them were state-owned. Again, as we have mentioned above, this might not be representative of China at large because the cities here are all first-tier cities. Situations in the second-tier or third-tier cities might be different. Foreign Joint Venture (46%) was the most common model among the studied cities. Second to that was Stock Transfer; it was found to be 27%. Another survey assessing 152 water supply projects across the country suggested something different from our findings (See Figure 2)[23]:

23 Fu T., Chang M., and Zhong L. (2008) *Reform of China's Urban Water Sector*, IWA Publishing, pp.38-60.

Figure 2: Models of the Water Supply Privatization Projects



(Source: Tao Fu, Miao Chang,and Lijin Zhong, *Reform of China's Urban Water Sector*, IWA Publishing, 2008, p.44)

Stock Transfer (44%) was the most popular model for the water supply privatization projects and Joint Venture and Partnership is the second most popular choice. In the same study the authors also pointed out that cities in the middle and western areas had experienced a higher degree of privatization than the other regions due to inadequate capital for water supply infrastructures. Besides, water reforms had been evolving rapidly in the coastal cities. These cities served as pioneers for the marketization reform due to the fact that they were the first testing zones for the economic reform when China's Open Door Policy was implemented in 1979.

2.2.2.1 Integrating Water Supply, Drainage and Sewage Treatment

Acquisition and integration have become two main themes for the water industry of China today. In order to increase their shares in China's water market, there is a trend for water companies to integrate horizontally by merging with or buying up other similar

firms. Meanwhile, the water companies also tend to expand vertically along the supply chain by integrating water source water supply, drainage and sewage treatment together. For instance, the Fuzhou government recently established a new company called "Fuzhou Water Investment Development Co. Ltd." by uniting four stated-owned water companies, including Fuzhou Water Supply Company, Fuzhou City Spa Supply Company, Fuzhou Xiang Ban Waste Water Treatment Plant and Fuzhou Yang Li Waste Water Treatment, as a way to build[24] a "big and strong" (Zuo-qiang-zuo-da) local water firm.

2.2.2.2 The Rise of Local Water Giants

As a result of the increase of capital investment in China's water supply infrastructure, the need to attract foreign investment is slowly declining in many second-tier cities. At the beginning of the reform, China was challenged by a huge pressure to increase water supply and sewage treatment capacity in order to catch up with the rapid urbanization and industrialization, but there was a severe lack of funding to support the building of necessary infrastructures. However, the financial capability in many cities has been improved gradually over the past ten years and the need to attract foreign investment is now shrinking.

On the other hand, by making use of their governmental background, some big domestic water companies are expanding. This is reflected by the fact that more domestic water firms have moved up in ranking among their competitors in China's water industry. One of the advantages that the domestic water firms have over the transnational water firms is that most of them are state-owned shareholding companies or former state-owned enterprises. The management personnel of the reformed water companies are usually former government officials, and the Guanxi

24 China Water Net. (02/01/2009) "Fuzhou Water Undergoing Low-Profile Reform" http://news.h2o-china.com/market/watermarket/773511230889045_1.shtml (Retrieved on 23/12/2010)

(which means relationship in Chinese) they have with the local governments is proven to be beneficial for their expansion.

For example, Beijing Capital Company Limited is a publicly listed state-owned share holding company established in 1999. This domestic water corporation has been expanding very fast in recent years and now it has 27 water projects across the country (e.g. Shenzhen, Anhui, Hunan, etc.). Beijing Capital was ranked as the number one water company in the Top Ten of the Most Influential Water Companies in China for the past two years (see Table 8). In contrast, the rankings for some transnational water corporations, such as Veolia, have moved down.

Table 8: Top 10 of the Most Influential Water Companies in China [1]

Ranking	2009	2008	2007	2006
1	Beijing Capital Company Limited	Beijing Capital Company Limited	Veolia Water	Sino French Holdings
2	Beijing Water Enterprises Group Limited	Shenzhen Water Group	Golden State Environment Group Corporation	Veolia Water
3	Sound Group	Beijing Water Enterprises Group Limited	Sound Group	Beijing Capital Company Limited

[1] Once a year, the China Water Net, an authoritative information provider and serial events organizer in China's water sector, would organize voting among the general public and water experts in China to select the Top Ten water companies in China. The rankings in Table 1.8 were taken from the China Water's website (www.h2o-china.com)

Ranking	2009	2008	2007	2006
4	Sino French Water	China Water Investment Company Limited	Capital Environmental Protection	Sound Group
5	Veolia Water	Sound Group	Beijing Capital Company Limited	Golden State Environment Group Corporation
6	General Water of China	Veolia Water	Sino French Holdings	General Water China
7	China Water Investment Company Limited	Capital Environmental Protection	China Water Investment Company Limited	Shenzhen Water Investment Company Limited
8	Shenzhen Water Investment Company Limited	General Water China	Z.K.C. Environmental Group Company Limited	Capital Environmental Protection
9	Capital Environmental Protection	Golden State Environment Group Corporation	Tsinghua Tongfang Company Limited	Z.K.C. Environmental Group Company Limited
10	Chongqing Water Group Company Limited	Sino French Holdings	Sino French Holdings	Tsinghua Tongfang Company Limited

2.2.2.3 Transnational Water Corporations (TNCs) Losing Popularity

In 2007 Veolia successfully won bids in Lanzhou, Haikou and Tianjin, and the high premiums offered by the water giant brought a big shock to the water industry. Many people worried that the high premium would cause a rise in water tariffs. In one report, Mr. Li Zhendong, Chief of the Chinese Water Association said: "foreign investors offer high prices for water assets today may get multiple profits tomorrow. One achievement of this administration may become a severe hidden trouble for the next administrations, in the end this trouble will be passed over to people."[25]

At the same time, it also raised concern over the building of the "water empire" by the TNCs which might threaten China's water security. The skyrocketing water tariffs in Shanghai and Kunming after the acquisitions by Veolia also strengthened people's belief that the TNCs were not there for the improvement of China's water supply but purely for the sake of the lucrative profits. In 2008 there was a huge debate in the media and criticisms from the public that foreign investors were monopolizing and gambling with China's water industry[26]. This caused much concern from the central government and the local governments became very cautious and sensitive about the high-premium acquisition by the international water firms. No more high-premium acquisitions by TNCs can be seen among China's water companies after 2008.

25 Veolia Environment. (01/02/2009) "Mr. Jorge Mora: Facing the "Conspiracy Theory" http://founder.china.cn/weiliya/column/2009-02/01/content_2957225.htm (Retrieved on 23/12/2010)

26 People's Net. (03/11/2008) "Foreign Companies Gamble with China's Water, Water Tariff Going to Increase" http://energy.people.com.cn/GB/8271415.html (Retrieved on 23/12/2010)

Table 9: Water Projects Won by the TNCs with High Premiums [1]

Date	Project	TNCs	% of Shares	Floor price	Premium (billion)	Premium rate
2002.4	Shanghai Pudong	Veolia	50%			160%
2005.11	Kunming (Yunnan province)	Veolia + Citic Pacific	49%	0.78	1.0	30%
2006.9	Changshu, Suzhou (Jiangsu province)	Suez [2]	49%	0.31	0.60	95%
2007.1	Lanzhou (Gansu province)	Veolia	45%	0.4	1.57	390%
2007.3	Haikou (Hainan province)	Veolia	50%	0.31	0.95	>200%
2007.9	Tianjin	Veolia	49%	0.7	2.18	300%
2007.8	Yangzhou (Jiangsu province)	Suez *	49%	0.18	0.45[1]	250%

[1] Chu, S. (04/2010) *The Reform of the Urban Water Supply in Southern China*. Globalization Monitor, p.24.

[2] Suez Group mainly carries out its investment in China through its subsidiary company, Sino French Water, which is a partnership with the Hong Kong company, NWS Holding Limited (subsidiary company of the New World Development Company Limited).

Note 1: The industry was shocked by the price of 0.8 billion Suez offered in the tender. Further information disclosed that the real bidding price was 0.45 billion as Suez included its future investment of 0.4 billion in the tender.

Chapter 3
The Reform of Urban Water Supply in Kunming

In the past, there were lots of rivers in Kunming. We now have fewer rivers and less water, and I don't know what's happening.

--- By an 80 years old veteran living in Kunming

3.1 Introduction

3.1.1 Kunming City

Founded around 2300 years ago, Kunming is one of China's famous ancient cities. It is located on the Yunnan-Guizhou Plateau, with an average altitude 1900 meters above sea level. Being the capital of Yunnan Province, Kunming is also known as the "City of Eternal Spring" due to its mild climate[1], which is an ideal place for the growth of many different crops. The city is also the political, economic and cultural center of Yunnan. There are over 20 different ethnic groups living in Kunming today, including Han, Yi, Hui, Bai, Miao, Hani, Zhuang, Dai and Lisu, making it even more special for being China's cultural melting pot.

1 Its mean annual temperature is around 15°C.

⬆ Yunnan Province situated in the southwest region of China. The arrow in the above picture indicates the location of Kunming in Yunnan. (Source: [Left] http://globowines.files.wordpress.com/2009/06/yunnan_map.jpg. [Right] http://www.gynther.net/kunmingcity.php)

By the end of 2009, the city had about 5.29 million permanent residents of which over 50% of them come from the farming population. In 2009 Kunming's GDP was ¥180.8 billion with a 12.9% annual growth[2], accounting for 29.3% of the province's overall GDP[3]. The major industries of Kunming include power plants, cement, tobacco, synthetic fertilizers and water supply. The annual industrial growth of Kunming reached 9.7% last year, which equals to ¥63.2 billion. However, the economic achievement of Kunming does not come without a price.

Due to rapid urbanization and industrialization, water demand has grown significantly in Kunming for the past 30 years, caus-

2 Statistic Bureau of Kunming. (16/11/2010) "Kunming City Economic and Social Development Statistic Release 2009" http://tjj.km.gov.cn/structure/tjsjnr_193614_1.htm (Retrieved on 23/12/2010)

3 Kunming Info Harbour. (10/04/2010) "30% of Yunnan's GDP Contributed by Kunming City" http://news.kunming.cn/km-news/content/2010-04/10/content_2123171.htm (Retrieved on 23/12/2010)

ing a serious water shortage problem. Dianchi Lake is the 6th largest freshwater lake in China, and it used to be one of the major water sources in Kunming, nurturing the city for hundreds of years. However, since the 1970s, the water in Dianchi started to degrade due to agricultural runoff, domestic waste water and industrial discharge. By the mid 1990s, it had already been heavily polluted. The water of Dianchi is now classified as Grade V, meaning that it is no longer suitable for any use (see picture in Chapter 1).

Before the construction of the Zhangjiuhe Diversion Project in 1999[4]---a long distance water delivery system for drawing water from the Zhangjiuhe River to Kunming city---the annual per capita water resources of Kunming was merely 302 cubic meters, which fell much below the "water scarce" standard[5]. Because of the serious scarcity of water, Kunming started to import water from the Zhangjiuhe River through a 97.7-kilometer long tunnel. 11,756 people had to leave their homes because of the construction.

Thanks to the Zhangjiuhe Diversion Project, water started to be pumped to Kunming from 25th March, 2007. The city is now receiving 60,000 cubic meters of extra water every day. Even though it is still lower than the national average, the per capita water resource of Kunming today has increased to 1440 cubic meters.

4 Kunming City Government. (01/01/2010) "Overview of Kunming's Zhangjiuhe Diversion Project" http://www.km.gov.cn/structure/xwpdlm/zdxmxx_119849_1.htm (Retrieved on 23/12/2010)

5 According to the United Nations Development Program (UNDP) and the World Resources Institute (WRI), a region is classified as "water-stressed" if its annual per capita water availability is less than 2000 cubic meters, and if it is less than 1000 cubic meters, it is classified as "water-scarce".

3.1.2 Water Supply in Kunming

Kunming Water Supply Group (KWSG) was founded in 1915. It is a large scale state-owned water enterprise, which was formerly in charge of the management and development of Kunming's water supply services. In August 2004 an international bid was organized by the Kunming Municipality to allow international private water firms to acquire 49% of the shares of the resultant equity joint venture company, which would take over the right to operate the city's water supply services.

Veolia Water — a transnational water giant from France — won the bid in May 2006, by offering the municipal government ¥1.05 billion. Kunming Compangnie Generale des Eaux Water Supply Company Limited (Kunming CGE) was formed by Veolia Water-CGE together with its Hong Kong partner, CITIC Pacific Limited, and Ping An Insurance Group Company of China Limited. Kunming CGE, as a result, was awarded the contract to run the municipal water for 30 years[6].

Table 10: Water Tariff Adjustments in Kunming in Recent Years*

Effective date	Domestic water price (¥)	Wastewater treatment fee (¥)	Total Price (¥)	Percentage increase compared to 2002
2009-06-01	2.45	1.00	3.45	91.7%
2007-07-01	2.45	0.75	3.20	77.8%
2006-01-01	2.05	0.75	2.80	55.6%
2002-04-01	---	---	1.80	---

* Yunnan Provincial Government. (28/03/2007) "Residential Water Tariff Increased to 3.2 RMB per Cubic Meter Starting from July 1st" http://www.yn.gov.cn/yunnan, china/74043329217560576/20070328/1147238.html (Retrieved on 22/12/2010)

6 Kunming Water Supply Group. "Introduction to Kunming Water Supply Group" http://www.ynwater.com/kmsc/index.asp (Retrieved on 22/12/2010)

3.1.3 Survey Objectives

The aim of the research was to further investigate the impacts of the urban water supply reform on the general public in southern China. We chose Kunming as an example since the city's water supply system had recently been transformed from state-owned enterprise to foreign equity joint venture. The followings are the three major aspects that we focus on:

- The transparency and the degree of public participation throughout the reform.
- The impacts of the marketization reform on people's daily lives, including water quality, water tariff and water conservation, management and service quality and governance.
- People's expectations of the water supply system.

3.1.4 Methodology

Four different districts within Kunming, including Wuhua District, Xishan District, Guandu District and Panlong District, were chosen for comparisons. Our fieldwork included observation, in-depth interviews and questionnaires. By the end of our 10-day research trip, a total of 50 questionnaires were successfully collected and 4 in-depth interviews were done.

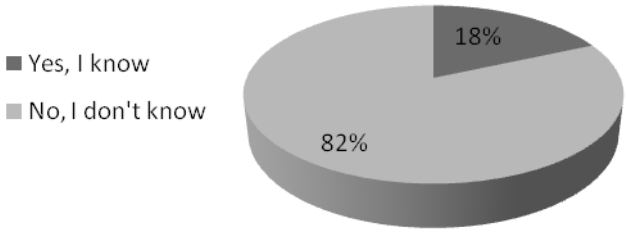
It should be noted that our survey was not carried out with random sampling. Since we aimed to study the impacts of urban water supply reform from a grassroots perspective, purposive sampling method was adopted. A sample of the questionnaire can be found in Appendix A.

3.2 Results and Analyses

3.2.1 Transparency and Public Participation

The results of the survey showed that the overall transparency and public participation were very low in Kunming's water supply reform. Only 18% of our interviewees knew that there are foreign investments involved in China's water supply (see Figure 3), although from 1994 to 2008 the six most active and powerful water transnational water firms---Veolia Water, Sino-French Water (Suez), HK & China Gas, Golden State, The China Water Company Limited (now owned by Sembcrop), and Western Water Group--- had achieved 53 contracts for China's urban water supply projects, accounting for 8% of the country's water supply capacity[7].

Figure 3: Do you know that there are foreign investments involved in China's water supply?



When asked if they had heard about the marketization reform in Kunming's water supply, only 21% of the people said that they have learnt about the process, while the majority either said they knew little or had never heard about it (See Table 11). Furthermore, over half of the people we interviewed told us that they

7 China City Water. (07/04/2009) "Research Report on the Market Acquisition by Foreign Water Companies" http://www.chinacitywater.org/zwdt/swyw/68747.shtml (Retrieved on 12/12/2010)

did not know the ownership of the Kunming's water supply company. Among those who said they knew the ownership of the city's water supply company, 80.9% of them (i.e. of the 42% who said they knew) gave the wrong answer and said that it is state-owned. What this means is that, despite being the major stakeholder, the general public was not consulted by the government during the process of the reform.

Table 11: People's Understanding Towards the Marketization Reform of Kunming's Water Supply

Have you heard that Kunming's water supply has experienced marketization reform?		
		Percentage
I have never heard of it		23%
I have heard but do not know much about it		56%
Do you know the ownership of Kunming's water supply company? If yes, do you know which one?		
No		58%
Yes	State-owned	34%
	State Shareholding	2%
	Foreign Investment	0%
	Foreign Joint Venture	4%
	Local Private Investment	2%
	Others	0%

Supporters of the marketization reform often believe that the introduction of foreign investments can create a more open and democratic culture within China's water sectors. This is indeed far from the reality. The foreign investors care more about maximizing their profits than bringing democracy to the water supply industry. As shown in Table 10, the water tariff in Kunming has increased by 91.7% since the city's water supply was taken over by Veolia 4 years ago. Unfortunately, the closed culture of the

water company still has not been improved by foreign involvement, considering 50% of our interviewees said they had never received any information from the company at all, and 64% of them felt that they did not have enough channels to express their opinions regarding the city's water supply.

According to the *Administrative Regulation on Urban Water Supply Pricing*, a policy paper issued by the Ministry of Construction in 1998, a public hearing is required before the resetting of the water tariff8; however, 72% of the interviewees did not know about this. There are two possible explanations for such phenomenon: 1) People are generally indifferent toward the city's water supply; 2) People are not given the opportunities or not properly informed about the decision-making process. Our results show that the latter is the answer because more than half of the people we interviewed told us that they would like to participate in monitoring the water supply company if they were given the opportunities (see Table 12).

8 This policy paper was introduced in 1998 and provides a legal basis for water supply pricing in China. As it is summarized by Jian Xie, the regulation states that: "(a) the general principles for setting water tariffs are "cost recovery, reasonable profit, water conservation and social equity;" (b) municipalities are responsible for approving water tariffs; (c) tariffs should cover operation and maintenance, depreciation, and interest costs; (d) tariffs should allow for an 8 to 10 percent return on the net value of fixed assets, depending on the sources of funds; (e) tariffs should be appropriate to local characteristics and social affordability; (f) municipalities should gradually adopt a two-part tariff consisting of a fixed demand charge and a volumetric charge or increasing block tariffs (IBT), where the first block should meet the basic living needs of residents; and (g) public hearings and notice should be conducted in the process of setting water tariffs." (Xie, J. (2009) Addressing China's Water Scarcity: Recommendations for Selected Water Resource Management Issues, The International Bank for Reconstruction and Development/ The World Bank, p.84)

Table 12: The Degree of Transparency and Public Participation of Kunming's Water Supply

Do you think there is enough information provided to you regarding water supply?	
Sufficient	10%
Insufficient	26%
Never receive any information	50%
No opinion	14%
Do you think that people have enough channels to express their opinions regarding water supply?	
Yes	12%
No	64%
No opinion	24%
If channels are available, are you willing to participate in monitoring the water supply company?	
Yes	56%
No	18%
I am not very concerned	8%
Undecided	18%
Do you know there is a public hearing before the resetting of the water tariff?	
Yes, I know	28%
No, I do not know	72%

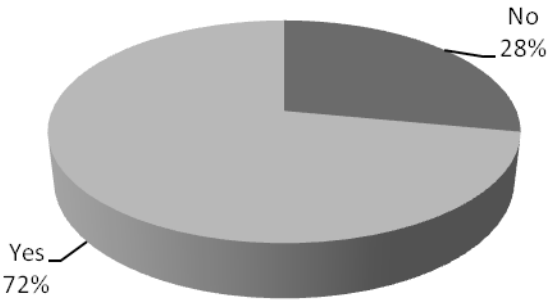
3.2.2 The Impacts of the Marketization Reform

3.2.2.1 Water Quality

Seemingly, the quality of Kunming's tap water is significantly better than that of the six cities we studied previously. The percentage of people who felt uncomfortable with the tap water quality was found to be 77.7% on average (ranging from 53.3%

to 88.3%) in the six cities[9], while only 28% of the people in Kunming we interviewed said the same (see Figure 4). The difference between Kunming and the six cities can be explained by the fact that Kunming is populated less heavily by polluting industries than the six cites, which are among the Pearl River Delta Region.

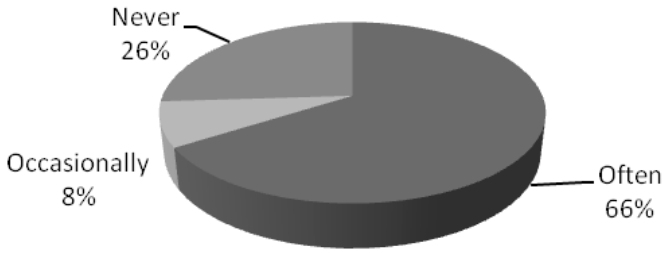
Figure 4: Do you feel comfortable with the quality of the tap water?



Despite the majority of people being satisfied with the quality of the tap water, 66% of the interviewees said that they often purchased bottled water for home use (see Figure 5). The result is a little puzzling because it does not match with the people's response towards the tap water quality. If the majority of people feel truly confident with the tap water quality, they would be less willing to spend extra money on buying bottled water for daily consumption. Furthermore, when asked about the reasons why they go for bottled water, 64.9% of the people said that it was because of its better quality. In short, more information and a greater sampling size are needed before we further analyse the discrepancy between these two contradicting pieces of information. Our rough guess for now is that people's confidence towards Kunming's tap water quality might be overestimated.

9 Chu, S. (04/2010) *The Reform of the Urban Water Supply in Southern China*, Globalization Monitor, p.54.

Figure 5: Do you purchase battled water for home use?



3.2.2.2 Water Tariff and Water Conservation

Many water experts in China like to advocate the idea that we can promote water-saving or more effective use of water by increasing the water tariff. To investigate the effects of the increase of water tariff on people's water consumption behaviours, we asked our interviewees to compare their current water consumption level to that in the past when the water tariff was much cheaper. 82% of the people said that they used more or less the same amount of water before and after the water tariff increase, while 12% of the people used less water after the increase.

Almost all the people we interviewed had already developed practices for water saving, and reusing water was one of the most popular water-saving strategies adopted by Kunming's citizens. Therefore, raising water tariff alone might not be an effective way to conserve Kunming's water because most people have already tried very hard to use water sparingly. What people are using now is close to the minimum required to fulfill basic needs.

According to our survey result, 35% of the people thought that the current water tariff was already too high. Even if rising water tariffs could help to save a certain amount of water, we should

not forget that it is more important for a sane society to ensure the equity of water resources. Therefore, it is the government's responsibility to make sure that the increase in water tariff would not create a heavy burden on low-income families (see Table 13).

Table 13: Questions Related to People's Opinions of Water Tariff and Their Water-Saving Habits

Do you think the current water tariff is reasonable?	
Too cheap	4%
Reasonable	61%
Too expensive	35%
Compare to the old days when the water tariff was cheaper, do you think your water consumption has changed now?	
Use less water now	12%
Use more or less the same amount of water	82%
Use more water now	6%
If the water tariff keeps on increasing, would that change your water consumption?	
Would use significantly less water	6%
Would use a bit less, but more or less the same	28%
No change	66%
Have you developed any water-saving practice?	
Yes	98%
No	2%
Do you reuse water in daily life?	
Yes, often	86%
Yes, occasionally	4%
Never	10%

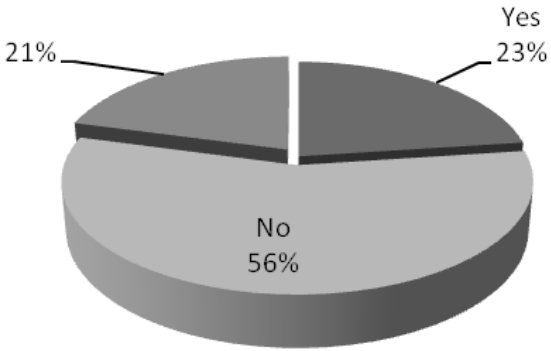
3.2.2.3 Management and Service Quality

In general, the majority of our interviewees were happy with the water company's services. Only 34% of them thought that there were problems related to the company's services and their complaints can be summarized into four major areas:

- Bureaucracy
- No service
- Poor water quality
- Frequent water suspensions

An important question we need to answer is whether the marketization reform of Kunming's water supply has improved the service quality of the water company. It is clearly shown by the survey result that only 23% of the people thought the service quality had been improved after the reform (see Figure 6). The following conversations are excerpts from the in-depth interviews. They serve as examples of how the local people perceive the services offered by the water company in Kunming.

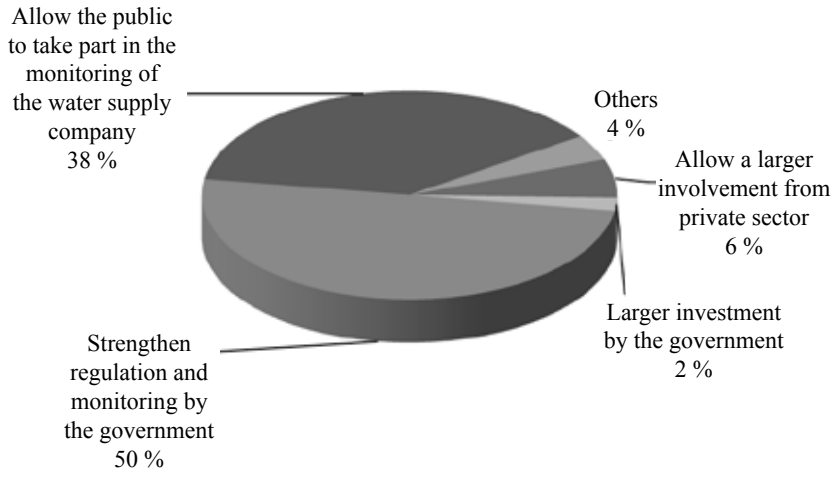
Figure 6: Do you think the water supply services have been improved after marketization reform?



3.2.2.4 Governance System

As indicated above, the marketization reform of the water supply does not necessarily improve its service quality. In many cases, a good governance system is more important than marketization in terms of constructing a better water supply system. Most of our interviewees believed that strengthening the government's regulation and monitoring of the water supply company, as well as allowing the public to participate in the monitoring, could effectively improve the service quality of the water company (Figure 7).

Figure 7: Which of the following do you think can effectively improve the quality of water supply servies?



3.3 People's expectations on the water supply system

Conversation 1

GM: Should water be regarded as a commodity for making profit or as welfare for the people?

Y001: Water should be regarded as public welfare for the people. People would be happy to see that a water company serves the people (wei renmin fuwu). Water shouldn't be treated as a commodity, that's not good.

Conversation 2

GM: According to the "Administrative Regulation on Urban Water Supply Pricing", apart from cost recovery, a water company is also allowed to profit from the provision of water supply services. What do you think about that?

Y017: I disagree. I think the state should consider the overall income of its people. Now the prices for water, electricity and groceries have increased…not long ago the potatoes we love to eat were ¥ 1/kg, and now they are ¥ 5/kg, the price has increased by 5 times! So I think the state should provide water as welfare and should not charge its people for profit. Even if the profit is necessary, it should be subsidized by the state.

Conservation 3

GM: According to the "Administrative Regulation on Urban Water Supply Pricing", apart from cost recovery, a water company is also allowed to profit from the provision of water supply services. What do you think about that?

Y036: I agree there should be some profit, but the profit should be used for the purpose of environmental protection. This is what's called "From the people, giving back to people". However, the government should regulate those profits strictly. Now we handed the water company to the foreign investors and let them earn the money, while the government keeps on investing money in environmental protection. Who knows what's the trick behind all this?

GM: Do you agree to have a state-owned water company transformed into publicly listed companies?

Y036: Actually, I agree. If the water company becomes a listed company, it may improve its management, and there will be more capital available for the water sector. But what I'm afraid of is that the capital gathered from the listing is not used for the development of the water company but is used for personal interests instead.

GM: Should water be regarded as a commodity for making profit or as welfare for the people?

Y036: I think the answer should lie somewhere in the middle…it can't be defined easily. Lots of water might be wasted if it's treated as welfare; however, water is still a common good in the end, so it should not be treated as a commodity.

Based on their opinions concerning Kunming's water supply, we classify our interviewees into three major categories: the older generation, the younger generation, and people with low incomes.

For the older generation, their awareness of water conservation was generally high probably because many of them had been through the difficult times (e.g. Second Sino-Japanese War, Chinese Civil War and Cultural Revolution). Besides, many of them had developed the practice of reusing water and they had already been using the minimum amount of water. Therefore, the increase in water tariff would do little to change their water consumption. Since water concerns people's livelihoods, they thought that the water supply company should not be handed over to foreign or listed company to manage.

The second group is the younger generation and they represented the new thoughts in society. A fair number of them believed that the involvement of foreign investors in China's water supply could improve the service quality of the water supply company, but at the same time they pointed out that the government should strengthen its monitoring of the water company in order to prevent corruption. They also recognized the importance of water conversation but for different reasons from the older generation; they tended to save water for the sake of environmental protection. They also strongly opposed the raising of water tariffs because they thought the current living expenses were already very high.

The third group consists of people with low incomes, especially migrant workers who lived in the urban villages. The water bills for these people were usually the most expensive. Unlike most of the locals, migrant workers pay the water fees to their landlords. The fee for hot water was round ¥ 8 to ¥ 10 per cubic meter, and the fee for cold water was around ¥ 6 to ¥ 8 per cubic meter. In most cases, the charges for the water were considered a heavy burden for them. A young couple that we visited in one of the urban villages only drank from bottled water because they did not trust the quality of tap water. For bottled water alone, they

had to spend over ¥ 50 a month. Together with charges for the tap water, they had to spend about 8 to 10% of their total income on water. Since these people are not permanent residents of the city, they do not have a say in the process of marketization reform nor do they have the right to attend the public hearings before the resetting of the water tariff.

Table 14: People's expectation towards the operational system of water supply

Which of the followings do you think is the most appropriate operational system for water supply?	
State-owned	58%
Owned by foreign private investors	0%
Owned by domestic private investors	6%
Joint Ventures	12%
Others	24%

Regarding to the question of the most appropriate operation system for water supply, "state-owned" was the most popular answer (i.e. 58%), and second to this was "Others" (see Table 14). Among the ones who chose "Others" as the answer, most of them said that good quality and affordable water were what really mattered to them and they cared less about who ran the water company.

Chapter 4
Problems with the Marketization Reform in China and Alternatives

Water flows from high in the mountains
Water runs deep in the Earth
Miraculously, water comes to us,
And sustains all life.

---by Thich Nhat Hanh from Present Moment Wonderful Moment: Mindfulness Verses for Daily Living

Since 2002, China has experienced a rapid marketization reform in its public utilities. Many of the formerly state-owned water companies have already been transformed according to commercial principles. Some had part of their shares sold to foreign investors and some became a joint venture. What we really want to find out is whether all these changes contribute to a better water supply system in China. The information that we got from the surveys, in-depth interviews, academic research papers and media reports shows us that the answer is negative. The following are the problems that we have identified.

4.1 Problems with the Marketization Reform

4.1.1 The Broken Promises of Water Privatization

As we have mentioned in Chapter 1, attracting more investments for the infrastructure of the water supply system and improving the technology and service quality were two major motives be-

hind the reform. Nevertheless, after nearly 20 years of the marketization reform of water utilities, these goals are still far from reach. The marketization reform does attract some private investors (both foreign and local) to the water industry, but this does not lead to more money or efforts being spent on building a better water supply system for the people. Over half of the people we interviewed in Kunming said that they did not see any improvement regarding the water supply services after the marketization reform (see Chapter 3). The major complaints that they had toward the water company included bureaucracy, no service, poor water quality and frequent service suspension. Besides, 210,000 cubic meters of drinking water in Kunming was wasted last year due to broken or leaky pipes, which the water company failed to repair[1]. Seemingly, not much of the ¥1.05 billion offered by Veolia for buying the 49% shares of Kunming's water company has actually been spent on improving the city's water supply. On the contrary, some people suspected that the high-premium offered by the foreign investor was the reason for the frequent increase in water tariff.

The transfer of state-owned assets to the private sector might, in the short term, increase the cash flow of a local government, but this does not seem to benefit the development of the city's water supply in the long run. In a recent news article it is reported that: "one reason why the local governments are so eager to sell the water companies is that the SOEs have suffered from heavy financial losses, the other is that they can generate a generous sum of money from the sale….the Lanzhou water supply project was sold to the foreign investor for 1.7 billion RMB, the local government took 1.2 billion RMB from it…but the money was spent on other purposes instead of improving the water supply sector, it's

1 China National Radio. (07/01/2010) "21,000 Cubic Meter Water Lost in Kunming in 2009 due to Frequent Damage of Water Pipes" http://news.china.com/zh_cn/domestic/945/20100107/15767528.html (Retrieved on 23/12/2010)

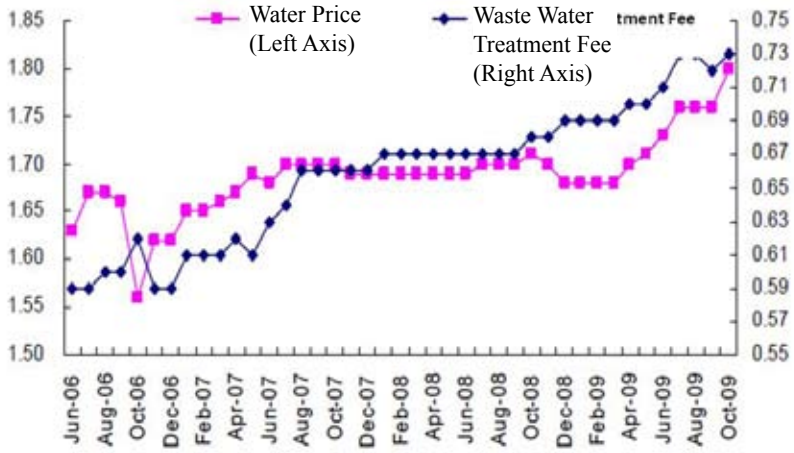
only good for the government itself.[2]"

4.1.2 Overemphasizing Market Forces to the Neglect of the Essentiality of Water

Supporters of the privatization of water often suggest that turning water into a commodity could promote water saving and thus solve China's water shortage problem. Indeed, this serves as a big excuse for corporations to make profits for themselves from water, instead of promoting water conservation. Most of our interviewees responded that an increase in the water tariff would not change their water consumptions. Water is essential to life and should be regarded as a human right. Those who promote the notion for commercializing water neglect the fact that water is a common good which belongs to every human being. A responsible government should always put its people before profit. What we see happening in China right now is that the government is trying to shed its responsibility for providing clean, sufficient and affordable water to its people. Water tariff in urban China has skyrocketed in the past decade (See Figure 8), and for the low-income families, water is becoming more and more unaffordable.

2 People's Net. (07/06/2009) "Foreign Water Corps' High Premiums Targeted at Xian Water, Citizens Might Have to Pay for in the End" http://mnc.people.com.cn/GB/126636/9426245.html (Retrieved on 11/12/2010)

Figure 8: The Trend of Water Tariff Increase in 36 Large to Medium Size Cities[3]



4.1.3 A Reform without Sufficient Deliberation

Since the promulgation of *Opinions on Accelerating the Marketization of Urban Utilities* in 2002, the door to China's public water sector is wide open to the market. The overall development of the marketization process can pretty well be summarized by the Chinese proverb "crossing-the-river-by-touching-the-stones", which means going down a path without knowing where it is going. A reform without enough deliberation often results in failure.

A famous example would be the privatization of Shenyang's water supply. In 1995, the Shenyang government signed a contract selling 50% shares of its No. 8 Water Plant to Sino French Water Supply Company, allowing the latter to operate the plant for 30 years with guaranteed returns and to sell all the treated

3 Guosen H&S Investment Co. Ltd. (2010) "An In-depth Study of China's Water Industry" http://www.dubaogao.com/stock_142591.html (Retrieved on 02.12.2010)

water to the Shenyang Tap Water General Company (SOE) at a fixed price. The government then bought back the entire stake from Sino French and terminated the contract in 1999 due to the heavy financial burden created by the fixed return agreed on the contract. The Shenyang government then tried another way to finance its water supply sector by establishing the Shenyang Development Group in 1999, which was formed by packing several stated-owned water plants and other SOEs together. Later, a subsidiary company called "Shenyang Utility Development Company, under the Shenyang Development Group, was listed in the Hong Kong Stock Exchange Market. Again, it failed. In 2002, the municipal government had to repurchase a 99.37% stake from Shenyang Utility Development Company in order to regain control over the city's water plants. The above story is just one of many.

Another problem with the reform is about the monitoring issue. Many government officials did not realize that their role has been changed from service supplier to service regulator after the privatization reform. In our previous report, we have already pointed out that many local governments simply withdrew themselves completely once the water supply was privatized, without establishing a proper monitoring system to ensure that water supply services were up to standard.

4.1.4 Marketization Vs. Market Mechanisms

In some cases, the failure of the reform is caused by the failure of the decision makers to distinguish between "*Marketization*" and "*Market Mechanisms*". The two terms are closely related, but they have fundamental differences. According to Dr. Lee Zhi-Hui, a Chinese water expert, marketization emphasizes 1) the diversification of investors and operators and improving a company's performance through external competition in the market; 2) the division of the water supply chain, e.g. separating the

operation of pipelines from the water plants. On the other hand, the introduction of market mechanisms emphasizes 1) the unity and inseparability of a water company's assets and its operation, improving a company's performance through internal transformation in the premise of unified management; 2) protecting the unity of the supply chain, and smoothing out all the conflicts and inefficiency of a water company through internal integration[4]. In other words, the introduction of market mechanisms suggests that the government should take the initiative role in improving the water supply services, while the marketization of the water supply means leaving everything to the market to decide.

The marketization of China's urban water supply is such a rapid process. Without enough knowledge and research, many local government officials were unable to tell the differences between the two terms, and they just acted according to some vague understanding of market practices. Marketization requires a government to hand over its control of a public utility to the market, including its investment, operation system and setting of service price. However, this might not be applicable for a utility with a public welfare nature. The problems resulting from the marketization of the water supply include a substantial increase in the water tariff which may place a heavy burden on the public, the government's role of offering public service being questioned by the public, and loss of governmental power to influence the provision of water to the people.

4.1.5 Low Transparency and Public Participation

Water is a common good and everyone is entitled to have a say in the water supply services. Based on our findings, however,

4 Li, C.W. "Discuss 'Marketization' VS 'Introduction of Market Mechanism' in Water Reform" http://www.yangtzeforum.com/detail/20091026/119464.asp (Retrieved on 23/12/2010)

overall transparency and public participation in China's urban water reform are very low. In general, most citizens in China have never heard about the reform, and many of them think that their cities' water companies are still owned by the state. Low transparency usually indicates low accountability. For instance, many water companies tend to use "increased operational cost" as an excuse when they ask for an increase in water tariff, but they never present to the public the cost audit reports. Besides, even though a public hearing is required before the resetting of the water tariff, usually less than a half of the attendees come from the consumer side. The *Measures for Hearing on Government Price Decisions* released in 2002 by National Development and Reform Commission allows the local governments to decide the member composition of the public hearings, and the general public only acquires less than 50% of the seats in most cases. Therefore the voice of the consumers is often very small.

4.2 Alternatives

4.2.1 Learning from the Error

At the beginning of the reform, the water supply systems in many Chinese cities (especially the 2nd and 3rd tier cities) lacked the funding and resources to meet the growth of urbanization and industrialization. As a result, many local governments took the easy way out by signing some unequal contracts (i.e. high fixed return rates and extremely long concession terms) with or selling part of the assets of the state-owned water companies to private investors. However, that does not bring us a better water supply system. Previous experience also tells us that, when a privatized water company runs into trouble, it is always the government in concern (i.e. using tax players' money) which bears the responsibility to save or subsidize it. At the end of the day, if anything

goes wrong in the water supply system, it is the people who suffer. As is shown in the previous chapter, most people believe that the quality of water supply services can be best improved through strengthening the government's role on monitoring and regulation (see Figure 7). Moreover, they also choose "state-owned" (see Table 14) as the most appropriate operational system for water supply. People know best what is good for them and their communities, so we think it is now time for the government to listen to the people.

4.2.2 New Wave of Re-nationalization

The world is already brimming with examples of failed water privatization. In Bolivia, Argentina, India, the Philippines, Vietnam and the United States, there have been lots of documented cases of failed privatization projects in water supply and sanitation (See Appendix II). Meanwhile, the growing number of cases of re-nationalizing water utilities over the world offers hope of reversing the trend of water privatization. In 2004, new laws were passed in Uruguay and the Netherlands to make water privatization illegal, which "outlaw not only the sale of water systems but also the delegating of the operation of water supply to private companies.[5]" The city of Paris announced that it would overturn water privatisation and re-municipalise its water utility in 2008, saying the city would not extend its contracts with Suez and Veolia starting from December 31st, 2009[6]. What is more, the EU also announced recently its offer of a 40-million-euro fund to support cooperation between public water companies in Europe,

5 Public Services International Research Unit. (29/01/2010) "Making Water Privatization Illegal ---New Laws in Netherland and Uruguay" http://www.psiru.org/reports/2004-11-W-crim.doc (Retrieved on 30/10/2010)

6 Godoy, J. (30/06/2010) "Is the Water Privatisation Trend Ending?" AlterNet. http://www.alternet.org/water/89982/ (Retrieved on 14/12/2010)

Africa, the Caribbean and the Pacific countries[7].

Water is the essence of life. It is a government's responsibility to provide its people with safe, sufficient and affordable water. Therefore, it is against human rights to treat water as a commodity or to trade it for the sake of profit. We hope that the Chinese government can learn from the failures of water privatization and correct itself by putting privatized water services back into public hands.

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7 Godoy, J. (28/01/2010) "Privatised Services Back in Public Hands" Inter Press Services. http://ipsnews.net/news.asp?idnews=50135 (Retrieved on 13/12/2010)

Appendix 1

Countries with IMF-imposed water privatization and cost recovery policies

Country	IMF Program	Loan Condition	Summary of Policy
ANGOLA	Staff-monitored program	Structural benchmark: Adjust electricity and water tariffs in accordance with formulas agreed with the World Bank. Reduce accounts receivables of the water and electricity companies to one month of sales revenue	Adjust water tariffs periodically to recover costs, including a reasonable return on capital.
BENIN	Poverty Reduction and Growth Facility (PRGF)	Other measure: After the revision of regulatory framework, the government expects to complete the privatization before the end of the third quarter of 2001	Privatize the water and electric power distribution company (SBEE)
GUINEA-BISSAU	Emergency Post-Conflict policy	Structural benchmark: Transfer of electricity and water management to private company	Transfer of electricity and water management to private company

Country	IMF Program	Loan Condition	Summary of Policy
HONDURAS	Poverty Reduction and Growth Facility (PRGF)	Other measure: Approve framework law for the water and sewage sector by December 2000	To facilitate private concessions in the provision of water and sewage services, approve the framework law by December 2000.
NICARAGUA	Poverty Reduction and Growth Facility (PRGF)	Structural benchmark: Continue adjusting water and sewage tariffs by 1.5% a month. Offer concession for private management of regional water and sewage subsystems in Leon, Chinandega, Matagalpa, and Jinotega.	Adjust water and sewage tariffs to achieve cost recovery and offer concession for private management in key regions.
NIGER	Poverty Reduction and Growth Facility (PRGF)	Other measure: Divestment of key public enterprises, including the water company, SNE.	Privatization of the four largest government enterprises (water, telecommunication, electricity & petroleum) have been agreed with the World Bank with the proceeds going directly to pay Niger's debt.

Country	IMF Program	Loan Condition	Summary of Policy
PANAMA	Stand-By Arrangement	Structural benchmark: Complete plan to overhaul IDAAN's (state-owned water company) billing and accounting systems, allow to contract with private sector operators, determine need for tariff increase and possible rate differentiation among clients.	Overhaul the water company's billing and accounting systems, allow it to contract with private sector operators, review the tariff structure.
RWANDA	Poverty Reduction and Growth Facility (PRGF)	Structural benchmark: Put the water and electricity company (Electrogaz) under private management by June 2001.	The water and electricity company (Electrogaz) will be put under private management as a prelude to its privatization.

Country	IMF Program	Loan Condition	Summary of Policy
SAO TOME AND PRINCIPE	Poverty Reduction and Growth Facility (PRGF)	Structural benchmark: The new adjustment mechanism for public water and electricity rates will be brought into operation by decree. The price structure will cover all production and distribution costs as well as the margin of the water and electricity company. The accounts will balance consumption and resources without recourse to government subsidies.	In May 2000, the government conducted a study of alternatives for the future of the water and electricity company (restructuring, leasing, concession or full privatization), with assistance from the World Bank. By December 2000, it will select one of the options and adopt a financial restructuring plan, and strengthen the revenue collection procedures.
SENEGAL	Poverty Reduction and Growth Facility (PRGF)	Other measure: Regulatory agency for the urban water sector will be created by end-2000. Transfer the recurrent costs of water pumping and distribution equipment to the communities. Increase the involvement of private sector operators.	Encourage the involvement of private sector operators in the water sector. Assess the possibility of private sector operation and financing of the infrastructure required to meet Dakar's long-term water needs.

Country	IMF Program	Loan Condition	Summary of Policy
TANZANIA	Poverty Reduction and Growth Facility (PRGF)	Condition for HIPC debt relief: Assign the assets of Dar es Salaam Water and Sewage Authority (DAWASA) to private management companies.	Assign the assets of Dar es Salaam Water and Sewage Authority (DAWASA) to private management companies.
YEMEN	Poverty Reduction and Growth Facility (PRGF)	Structural benchmark: Implement adjustments in water, wastewater, and electricity tariffs to provide for full cost recovery.	Implement formulas for automatic adjustments in tariff rates to ensure full pass through of product prices and full cost recovery; establish regional water authorities with private sector participation and independence to set regional tariff structures.

Source: Letters of Intent and Memoranda of Economic and Financial Policies prepared by government authorities with the staffs of the International Monetary Fund and World Bank. The documents are made available at the IMF website: www.imf.org.

Appendix 2

List of Failed Privatisation Projects in Water Supply and Sanitation*

(*Source: Manthan Adhyayan Kendra (http://www.manthan-india.org/IMG/pdf/List_of_Failed_Privatisation_Projects_in_Water_Supply_and_Sanitation-Dec_2010.pdf)

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
1	BA Province	Argentina	1999	2002	Azurix, Enron subsidiary	Frequent price increases, poor service quality, failure to honour Contractual commitments, financial problems.	Termination of privatization, Government decision.
2	Buenos Aires City	Argentina	1994	2005	Suez water, Aguas de Barcelonas	Company asked for huge tariff increase to compensate devaluation of currency. Price hikes were not allowed.	Privatization was terminated, Company exited and filed for compensation in ICSID.
3	Santa Fe Province	Argentina	1998	2006	Suez water, Aguas Provinciales de Santa Fe	Contract failed after 8 years, due to pressure from the resident groups. Private company accused of breaking its contractual obligations like maintenance, water quality parameters, etc.	Private Operator dissolved the company, water services returned to public control.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
4	Tucuman	Argentina	1994	1998	Vivendi Environment	Severe tariff hikes, intense public protests.	Privatisation was terminated after it became an issue in the state elections. Company filed for compensation in ICSID, lost then re-filed the claims.
5	Belize	Belize		2005	Biwater/ Cascal	Unjustified price increases by private operator.	Belize repurchased Cascal's shares in the water company.
6	Cochabamba	Bolivia	1999	2000	International Water Ltd., Bechtel	Drastic increase in water tariffs, intense public protests.	Termination of privatization, Government decision.
7	EL Alto and La Paz	Bolivia	1997	2005	Suez Water, Aguas del Illimani	Private operator refused to extend potable water supply to the poor areas of the city, peaceful but huge uprising and demonstrations by the people.	Supreme Decree by the Government cancelling the contract with the company.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
8	Halifax	Canada	2002	2003	Suez	Private corporation refused to take responsibility for failing to meet environmental standards of the contract, also effective grassroots campaigning by citizens and environmentalist groups.	Cancellation of sewage treatment contract.
9	Hamilton	Canada	1994	2004	AWS/RWE Thames	Municipal council voted to take back operation of city water and wastewater plants after the contract term ended.	Operations to be handled by the municipal body.
10	Toronto	Canada	2002	---	---	Huge public protests and campaigning against privatization efforts.	Rejection of proposals, City Council decision.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
11	Vancouver	Canada		2001	Bechtel , Vivendi and two other companies were short listed for this project.	Huge public protests and campaigning against privatization efforts.	Uncertainties about the impact of free trade agreements resulted in cancellation of project. The study conducted by Dominion Securities concluded that cost savings would be “minimal.” Judged against the risks from trade agreements identified by opponents, the benefits were ultimately deemed by the Greater Vancouver Regional District (GVRD’s) water committee to be marginal.
12	Da Chang, Shanghai	China	1997	2004	Thames Water	Ended concession when government cancelled guaranteed rate of return.	Private company withdrew.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
13	Xian Water	China		2001	Veolia's subsidiary, Berlinwasser	Ended concession when government cancelled guaranteed rate of return.	Terminated, Sold to Municipality.
14	Shenyang	China	1996	1999	Sino-French Water Company	High price of bulk water, huge losses to state owned company due to high guaranteed returns, failure of concession contract.	Contract terminated, re-sold to the State owned company.
15	Shantou	China	---	2002	Cheung Kong Infrastructure	Company exited in dispute over contract terms.	Privatisation terminated.
16	Calama	Chile		2006	Biwater / Cascal		Company's contract to build the waste water treatment plant terminated.
17	Bogota	Columbia	1994	---	---	City refused World Bank money due to privatisation conditionality.	Water Utility remains in Public Sector.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
18	Quito	Ecuador		2007	Biwater	Strong Public protests against privatisation and outcry for public sector reforms.Strong Public	Mayor of the city announced the cancellation of the privatisation project.
19	Castres	France	1991	2003	Lyonnaise des Eaux (today part of the Suez TNC)	Strong Public pressure against privatisation and outcry for public sector reforms.	Town council broke the 30 year concession contract with the Lyonnaise.
20	Grenoble	France	1987	2001	Suez	Bribery scandal, public protests.	Termination of Privatization, Municipal decision during election.
21	Varages	France	1990	2002	A Subsidiary of Suez	Public complaints against rising water prices, quality deterioration, network problems	Water Contract not renewed with the company, municipality has taken over water supply.
22	Ghana	Ghana		2005	Biwater	Severe Public backlash against private management of water supply.	Private company pulled out.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
23	Conakry	Guinea		1999	SAUR	Unacceptably high water prices over the 10 year period of the contract.	Government declined to renew the contract.
24	Potsdam	Germany	1998	2000	Eurawasser - Suez-Lyonnaise des Eaux and Thyssen	Unjustified price increases by private operator.	Termination of Privatization, Municipal body's decision.
25	Munich	Germany	---	1998	---	---	Rejection of Proposals Municipal decision.
26	Honduras	Honduras	---	1995	---	Intense Public Protests.	Rejection of proposals Government decision.
27	Debrecen	Hungary	---	1995	---	---	Rejection of proposals Municipal decision
28	Pecs	Hungary	1995	2009	Suez Environnement	Water was becoming too expensive.	The Pécs municipality decided to take back the management of its water services from Suez.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
29	Bangalore	India	2001	---	Biwater	Very high cost of water, assured off-take from the company.	Bulk water supply contract from Cauvery river cancelled.
30	Delhi	India	---	2006	---	Intense public protests expose of contractual terms favouring private companies.	Privatisation stalled.
31	Sangli-Miraj	India		2002		Intense public protests during the bidding process.	Privatisation process cancelled.
32	Pekanbaru	Indonesia		2002	Biwater	Private Operator failed to secure investment for the 30 year concession contract.	Private company withdrew.
33	Nairobi	Kenya	1999	2001	Vivendi / Tandiran Information Systems Sereuca Space	Severe price hikes, huge job cuts, guaranteed profits, no competitive bidding process.	Privatisation cancelled.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
34	Kelantan Waters	Malaysia	1996	1999	Thames Water	Poor services provided by private company, huge debts, low number of connections, high amount of non-revenue water.	Contract terminated, State government bought back the stake from private company.
35	Indah Water	Malaysia	1997	1997	United Utilities	Private operator exited, eventually contract failed.	Terminated, nationalised.
36	Mali	Mali	2000	2005	SAUR	Contract failed after 5 years, due to high price increases. Private company accused of breaking its contractual obligations.	Private operator withdrew from the contract.
37	Baguio	Philippines		1997	Biwater	Private Operator asked for price rises immediately after being awarded the project.	Project cancelled.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
38	Manila –West	Philip-pines	1997	2003	Maynilad Water Services Inc. - consortium of Suez & Benpres Holdings	Price hikes, failure to extend water connections to poor areas, no investments, in-crease in tariffs, non-fulfilment of other contrac-tual obligations.	Public utility MWSS has had to take back the water ser-vices, includ-ing liabilities created by the private compa-nies.
39	Puerto Rico	Puerto Rico	1995	2003	A Vivendi subsidiary - Autoridad de Acueductos y Alcantaril-lados de Puerto Rico	Problems in service delivery, non-fulfilment of contrac-tual obligations, violations of environmental laws.	Termination of Privatisation Government Decision.
40	Poznan	Poland	---	2002	---	---	Rejection of proposals Municipal deci-sion.
41	Lodz	Poland	1993	1995	Vivendi's engineering subsidiary OTV	Problems in terms of costs and failures, work was done late and uneconomically, deadlines not kept, construc-tion work was not finished on time.	City Council terminated construction contract for sewerage treat-ment plant.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
42	Nkonkobe	South Africa	1999	2002	Suez	Popular protests due to disconnection, price hikes.	Termination of Privatization Court ruling.
43	Malmo	Sweden	---	1995	---	---	Rejection of proposals Municipal decision.
44	Dar es Salaam	Tanzania	2003	2006	City Water, Subsidiary of Biwater	Erratic water supplies, acute water shortages, failure to provide clean water to poor communities.	Contract Terminated, Government Decision.
45	Bangkok	Thailand	1993	1997	United Utilities	Private company found that it could not continue with the sewerage treatment plant construction contract, Government claimed that company is not fulfilling contractual obligations.	Company abandoned contract, it continues to pursue for claims for compensation.
46	All	Trinidad	1994	1999	---	Failure to fulfil contractual obligations.	Termination of Privatization Government decision.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
47	Antalya	Turkey	1997	2002	Lyonnaise des Eaux/ Enka	Failure to fulfil contractual obligations. Company wanted to increase rates further even though when the prices had already risen by 130%. The company also failed to invest what was promised.	The Municipal council rejected company's demand to raise prices, the company pulled out mid way into the 10 year contract.
48	Atlanta	USA	1999	2003	United Water – Suez Subsidiary	Higher water rates, deteriorating quality, failure to make investments.	Termination of privatization, Municipal decision
49	Birmingham	USA	---	2000	---	---	Termination of privatization, Municipal Body decision.
50	New Orleans	USA	2002	---	A subsidiary of Veolia Environment	Campaign by a coalition of labour, environmental groups, churches and citizen activists.	Rejection of private bids by city's Sewerage & Water Board.

Sr. No.	Place	Country	Year		Company Involved	Reasons for Rejection	Result
			Started	Ended			
51	Stockton	USA	2003	2006	RWE-Thames Water/ OMI	Rising water prices, maintenance tasks backlogged, rising unaccounted for water, environmental concerns.	County Court cancelled the contract.
52	All	Uruguay	1993	2004	---	Increased water tariffs, new law by plebiscite making water a fundamental right.	Citizens voted water as a human right in a national referendum.
53	Thu Duc, Ho Chi Minh City	Vietnam	1997	2003	Suez-Degremont	Company exited in dispute over contract terms.	Contract terminated.
54	Harare	Zimbabwe		1999	Biwater	Irregularities in contract negotiations.	Private company pulled out.

Explanatory Note - Only projects that have failed have been included here. Projects which are facing serious problems or opposition are not in this list if they are ongoing.

Source - The list of failed projects has been compiled from various sources including PSIRU, Public Citizen, Food and Water Watch reports, website- http://www.remunicipalisation.org, and others.

China's Water Crisis and the Privatization of Urban Water in Kunming

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