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基礎建設、納入性發展與大湄公河次區域治理之 探析：以飲用水的公私協力為例

(Fundamental Infrastructure, Inclusive Development and Governance in the
Greater Mekong Sub-Region: Public/Private Partnerships in the Water
Sector)

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中文摘要

基礎建設在促進經濟成長和降低貧窮上扮演非常重要的角色。本文旨在透過大湄公河次區域內基礎建設中飲用水的例子，檢視採用公私協力的治理架構提供該項公共服務，是否能保證該地區達到納入性發展目標的最佳策略選擇。研究發現公私協力在其他基礎建設部門可能較為成功，但因飲用水具有滿足基本人權的公共財特性，較無法吸引私部門投資。同時也因治理和財務的問題，導致私部門提供飲用水常遭到合約中止或績效不佳的境況。相反地，柬埔寨和越南公用事業的改革，讓更多的窮人能獲得飲用水，並負擔得起水費，大大提高了納入性發展的目標。本文強調無論是由政府或私部門提供飲用水，治理問題是大湄公河次區域國家特別需要加強的議題。也就是說，這些國家必須完備法令規章等制度環境，才能提高基礎建設的覆蓋率。

Abstract

Infrastructure plays a crucial role in promoting economic growth and reducing poverty. This paper looks at the relationship between growth, basic infrastructure and inclusive development through examining the development and provision of infrastructure for water within the Greater Mekong Sub region (GMS). In particular, this paper examines the provision of water infrastructure through public-private partnerships (PPPs) in the region and asks whether this is the best strategy for ensuring inclusive development in the GMS. This paper finds that while PPPs may have been successful in other infrastructure sectors, the particular characteristics of the water sector have resulted in problems attracting and governing private sector involvement in the region. In addition, where PPPs have been undertaken, problems with governance and financing issues have resulted in contract termination or underperforming utilities. Conversely, reform of public utilities in Cambodia and Vietnam has resulted in increased access and affordability of water services for the poor thereby increasing inclusive development goals. Regardless of public or private provision, governance issues must be addressed, in particular, strengthening of institutional and regulatory frameworks.

(1) Introduction

While some Asian countries have achieved high economic growth over the last few decades, poverty still remains a massive problem for other countries in the region. In particular, countries in South-East Asia have been characterized by low growth, poor infrastructure and on-going problems related to the prevalence of endemic poverty. In an effort to deal with problems specific to the region, the Asian Development Bank encouraged the countries of Cambodia, the People's Republic of China (Yunnan province), Lao People's Democratic Republic, Myanmar, Thailand and Vietnam to join a regional initiative in 1992 which became known as the Greater Mekong Sub-region. (GMS) Through the creation of this regional initiative, the Asian Development Bank (ADB) and member states have attempted to implement and improve development strategies in the GMS. One of their stated development goals in the region is strengthening infrastructure linkages throughout the GMS with the twin goals of improving growth and aiding poverty reduction.

Figure 1.1 Greater Mekong Sub-region



Source: The GMS beyond Borders, 2004, p.4

Provision of infrastructure for water is a key part of this strategy. This paper focuses on the water sector in the GMS as it is felt that improving access to water is a fundamental human need and essential to improving the lives of the poor. Capacity-building in this sector is an essential task for GMS countries so that they can provide basic services to their people. Asia has the highest number of people unserved by either water or sanitation in the world with 715 million people having no access to safe drinking water.¹ This “gross under-provision of basic... [water] services”² has many knock-on effects primarily in the areas of health, education, hunger and poverty. Much illness in developing countries is linked to unclean water with water-related diseases responsible for high levels of child mortality.³ In addition, where there is no access to safe water, the poor are disadvantaged by either having to spend a large proportion of their time fetching water or a large percentage of their income buying water from private vendors. For these reasons the UN has declared access to water as not only a public good, but a human right. Equitable distribution of water is “fundamental to life and health... [with] everyone entitled to sufficient, affordable, physically accessible, safe and acceptable water...to prevent death by dehydration, reduce risk of water-borne disease and provide for consumption, cooking, personal and domestic hygiene needs.”⁴

Using a framework focusing on inclusive development will enable analysis of not only how access to water can improve the lives of the poor, but also how governance issues (such as improving institutional frameworks, finance, efficiency, tariffs and corruption) can be addressed in order to ensure pro-poor policies for basic infrastructure needs. Figure 1.2 following shows the links between infrastructure, poverty and growth. We can see that infrastructure provision not only depends on growth, but also leads to more growth. As economic growth occurs and service access improves, poverty is able to be reduced. “In sum, infrastructure both impacts directly on poverty through services and supports the process of growth on which much poverty reduction

¹ *Reclaiming Public Water In Asia, Essay collection presented by the Reclaiming Public Water Network, Nov. 2007, accessed September 27, 2009, www.focusnet.org*

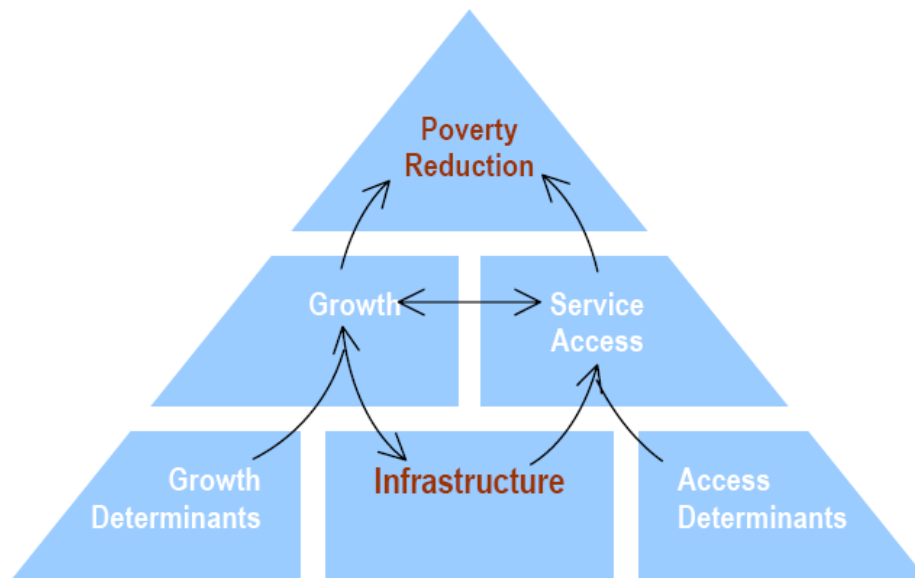
² Sawhney, *Building Supply Capacity for Environmental Services In Asia: The Role of Domestic and Trade Policies*, Issue Paper no. 5 (ICTSD, Geneva, 2007) p. vii

³ www.thewaterproject.org accessed September 27 2009

⁴ “UN Consecrates Water as Public Good, Human Right”. G, Capdevila, (Interpress, 28/11/02)

depends. And at its best, infrastructure draws poverty reduction, service provision and growth into a reinforcing cycle.”⁵

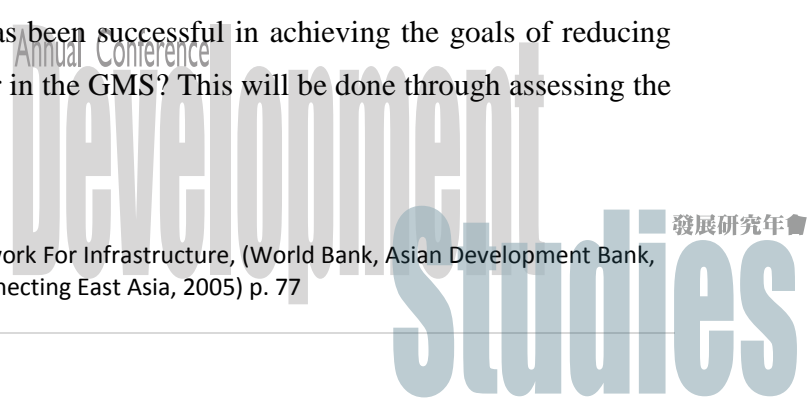
Figure 1.2 Linkages between Infrastructure, Poverty and Growth



Source: Connecting East Asia, p. 77

Providing safe, affordable access to clean water is an essential step in the development process. However, it is also extremely difficult for poorer countries to develop adequate water infrastructure. Large amounts of money are needed to improve facilities and in recent years, governments have increasingly turned to the private sector to provide funds, construction and operational expertise in the water sector. This paper will examine the appropriate roles of the public and private sectors in infrastructure provision of water services and asks which sector is best able to provide services to the poor. The use of public-private partnerships has been promoted by the ADB in the region but has been successful in achieving the goals of reducing poverty and improving the lives of the poor in the GMS? This will be done through assessing the

⁵ World Bank, Connecting East Asia: A New Framework For Infrastructure, (World Bank, Asian Development Bank, Japan Bank for International Co-operation Connecting East Asia, 2005) p. 77



current state of PPP projects in the water sector and analyzing these projects in light of the governance issues mentioned previously.

The GMS region faces many challenges in achieving poverty reduction. The region is home to approximately 325 million people with a land area of 2.6 million square kilometers.⁶ While the area is rich in natural resources, endowment varies across the region, as do levels of economic structure, terrain, culture, demography, ethnic composition, and levels of development. That said, common characteristics can also be found. Colonialism domination as well as regional domination by China (in the past and present) has played a strong part in the developmental process of countries in the region. In addition, the predominance of rural poor across the GMS eking out subsistence agricultural lifestyles has been noted.⁷ Focused development strategies have not altered the fact that the region's progress towards achieving poverty reduction continues to be slow. While countries such as Vietnam and China have achieved high growth rates in recent decades and achieved some poverty reduction, other countries in the region such as Myanmar, Laos PDR and Cambodia, have struggled to meet the needs of the poor due to lack of growth. Hence, Millennium Development Goals (MDGs), such as eradicating extreme poverty and hunger and achieving universal primary education remain unmet and poverty remains widespread with one in every five people in the region being affected. (Refer tables 1.1 and 1.2 following)

⁶ www.adb.org/GMS/ accessed 7/03/09

⁷ "The GMS Beyond Borders: Regional Cooperation Strategy and Program 2004-2008", (Asian Development Bank, 2004), accessed at <http://www.adb.org/GMS/default.asp>, 17/03/09

Table 1.1 Achievement of Millennium Development Goals 1 and 2 in the GMS

Item	Goal 1: Eradicate extreme poverty and hunger. Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day.				Halve, between 1990 and 2015, the proportion of people who suffer from hunger.		Goal 2: Achieve universal primary education. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.			
	Population Living Below \$1 a Day (%) ^a	Poverty Gap Ratio (%)	Share of Poorest 20% in National Income or Consumption (%)	Children Under Weight for Age (% Under Age 5)	Undernourished People (as % of Total Population)	Net Primary Enrolment Ratio (%)	Children Reaching Grade 5 (%)	Youth Literacy Rate (% Age 15–24)		
	1990–2001 ^a	1990–2001 ^b	1990–2001 ^{b,c}	1995–2001 ^b	1990/1992 ^d 1998/2000 ^e	1990–1991 ^{e,f} 2000–2001 ^{e,f}	1990–1991 ^g 1999–2000 ^g	1990	2001	
Cambodia	..	..	6.9	45	43 36	.. 95	.. 63	73.5	79.7
Yunnan Province in the PRC ¹	16.1	3.7	5.9	10	16 9	97 93 ^{h,i}	86 ..	95.3	97.9	
Lao PDR	26.3	6.3	7.6	40	29 24	.. 81	53 ..	70.1	78.6	
Myanmar	..	..	..	36	10 6	.. 83	.. ..	88.2	91.2
Thailand	<2	<0.5	6.1	19 ^b	28 18	.. 85 ^h	.. 97 ^{g,h}	98.1	99.0	
Viet Nam	17.7	3.3	8.0	33	27 18	.. 95	.. ..	94.1	95.4
Greater Mekong Subregion^m	..	..	6.9ⁿ	27	23 15	.. 89	.. ..	92.9	94.7
East Asia and the Pacific	..	..	..	..	.. ..	96 93	.. ..	95.1	97.4
Developing countries	..	..	..	..	21 18	80 82	.. ..	81.0	84.5

Source: GMS Beyond Borders, 2004, pp. 54-5

Table 1.2 Poverty Indicators: Incomes, Poverty & Distribution Indicators for GMS Countries (ADB 2006:3)

Year	Per Capita GDP (current international dollars)		Proportion of population below \$2 (PPP) per day (%)		Income ratio of highest 20% to lowest 20%		Gini Coefficient	
	2000	2006	1995	Latest	1995	Latest	1995	Latest
Cambodia	910	1633	76.5(1993)	61.7(2004)	5.2(1993)	7.0(2004)	0.318(1993)	0.381(2004)
PR.China	2362	4658	64.5(1993)	37.8(2004)	7.6(1993)	11.4(2004)	0.407(1993)	0.473(2004)
Lao PDR	1328	2032	90(1992)	74.4(2002)	4.3(1992)	5.4(2002)	0.304(1992)	0.347(2002)
Myanmar	464	--	--	--	--	--	--	--
Thailand	4952	7403	37.5(1992)	25.8(2002)	9.4(1992)	7.7(2002)	0.462(1992)	0.420(2002)
Vietnam	1416	2363	73.5(1993)	43.2(2004)	5.4(1993)	6.2(2004)	0.349(1993)	0.371(2004)

Source: Key Indicators for Asia and Pacific 2008, 39th Edition, (ADB, August 2008), p. 128,129

Economic growth occurring at different rates in GMS member countries (as shown by the growth of per capita GDP in table 1.2) has resulted in a variety of problems. There has been a focus on urban and industrial development in the region, despite the fact that “a large proportion of the GMS population —ranging from approximately 50 percent in Thailand to over 80 percent in other countries in the sub-region— is still engaged in low-earning agricultural activities in rural

areas”.⁸ This has led to the development of concentrated urban areas at the expense of rural areas, with the accompanying problems of the rapid increase of urban populations, changing demographic structures, income disparity, and increasing incidences of social exclusion and discrimination.⁹ Increasing pressure on water infrastructure in urban areas is accompanied by lack of access to clean water in isolated rural areas hampering growth.

Massive increases in levels of infrastructure spending are needed but how can poorer countries in the region raise capital for basic infrastructure, in particular in the water sector? The World Bank, Asian Development Bank and other international organizations continue to focus on private sector involvement as the way to improve quality and quantity of water services. The ADB in particular promotes public-private partnerships (PPPs) as the way forward for the provision of water services in the GMS however this approach has been criticized by those who call for other options including reform of existing public utilities. This paper will examine whether the public or private sector is better placed to provide safe, affordable services to the poor. Successful implementation of PPPs in developing countries such as those found in the GMS is difficult where there are differing levels of political will, budget allocations, ability to attract investment and governance capacity to follow through on policy commitments. Can PPPs in infrastructure, particularly for the water sector, be successful with the current state of governance, accountability and institutional environments in the region? This paper will examine the current state of infrastructure provision for the water sector in the GMS through the lens of inclusive development, concluding that successful reform of public water utilities is not only possible, but a viable way to ensure access to water for the poor.

This paper will begin by examining some of the issues surrounding the areas of inclusive development, governance and the private provision of infrastructure. The literature review will be followed by section three which will examine private provision of infrastructure in the water sector in the GMS. Section four will focus on a discussion of the main issues of the paper

⁸ Sciortino and Guest, *Regional Integration and Migration in the GMS: A Review (Draft)* (2006) at [apmm.usp.ac.fj/conferences/8thAPMRN conference/14.Rosalia%20GMS%20migration.pdf](http://apmm.usp.ac.fj/conferences/8thAPMRN%20conference/14.Rosalia%20GMS%20migration.pdf), p.4

⁹ Cook, “Structural Change, Growth and Poverty Reduction in Asia: Pathways to Inclusive Development”, *Development Policy Review*, 24, s1, (2006) pp. 51-80

(inclusive development, infrastructure and governance) as they affect the provision of water infrastructure in the GMS and this will be followed by the conclusion.

(2) Literature Review

Inclusive Development

Inclusive development is a concept that has been increasingly used in the area of development studies in recent years and refers to a development process that generates broad-based participation and more specifically reduces poverty and social exclusions.¹⁰ It can also be thought of as a way that the shared benefits of economic growth can be used to improve the incomes and lives of the poor, “enhancing their access to basic services...includ[ing] communities, [and] workers...in that growth process and bringing services to those that need them most.”¹¹ Other approaches have focused on development as a process of expanding real freedoms. Sen identifies freedom as the main objective of development and thus the removal of substantial unfreedoms (whether they be political, economic or social) as essential for development.¹²

There are many studies showing a strong relationship between economic growth and poverty reduction, but how can we ensure that the growth process is inclusive in terms of poverty income dimensions as well as non-income dimensions (such as water and sanitation)? Many commentators have commented that economic growth can easily lead to uneven distribution of the benefits of growth. (See Hubbard 2001, Cook 2006 etc) Thus government intervention strategies are needed to promote equality and empowerment of the poor ensuring quality of growth and inclusive development. Multi-dimensional policy initiatives must be focused on maintaining growth, more effective and focused public spending to improve services (including infrastructure) and the improvement of public sector institutional weakness.¹³ In addition governments can also target lagging regions, and focus on governance issues such as

¹⁰ Chatterjee “Asia-Pacific Infrastructure, Regional Cooperation and Poverty Reduction: Lessons from the Region”, (World Bank Paper no. 30769, 2004)

¹¹ “Connecting East Asia”, op. cit, p. 49

¹² Sen, *Development as Freedom*, (Alfred A. Knopf, New York, 1999) p. 1

¹³ Farrington, J and Robinson, M, “Introduction: Meeting Challenges to Growth and Poverty Reduction”, *Development Policy Review*, 24 (s1, 2006), pp. s3-12

transparency and accounting in public policy.¹⁴ Also, the economic and social changes that accompany rapid economic growth must also be dealt with, such as demographic changes, as well as increasing globalization and urbanization.

It is also important to recognize factors present in the GMS that can constrain growth and development. Scholars have examined financial, political, and geographic factors including but not limited to political and financial stability, demographic change, integration into the global economy, rural-urban transitions, social discrimination and inadequate infrastructure provision, all of which can constrain development. All of these factors are present in the GMS to varying degrees and must be taken into account when examining the success or otherwise of regional initiatives.

Infrastructure

It is well known that infrastructure can directly contribute to an economy's productive capacity. Chatterjee finds that infrastructure projects can significantly and directly assist in poverty reduction, stating "infrastructure has been...an important instrument for directly reducing poverty, in both its income and non-income dimensions... [as well as] an important element of regional cooperation efforts...to gain access to the economic mainstream and increase trade and incomes of the poor."¹⁵ We know that infrastructure plays a crucial role in providing the poor with better access to services, allowing them to participate in growth.¹⁶ In addition, infrastructure can support the processes of growth on which much poverty reduction depends as well as improving the lives and income opportunities of the poor through: improving access to education and health services; providing improved water and sanitation services; helping people to earn their livings; increasing inputs into production; improving productivity and the value of land for poor farmers and lowering costs, enlarging markets and facilitating trade.¹⁷

¹⁴ Ibid

¹⁵ Chatterjee, op. cit, 2004, p. 5

¹⁶ See Farrington and Robinson, op. cit, Ali and Yao, "Inclusive Growth for Sustainable Poverty Reduction in Developing Asia: The Enabling Role of Infrastructure Development", ERD Policy Brief no. 27, (ADB, May 2004) 發展研究年

¹⁷ "Connecting East Asia", op. cit, chapter 2

Governance

However, if the ultimate objective of development is to reduce poverty and bring about improvements in the lives of the poor, the provision of infrastructure must be done with care. Issues such as rapid urbanization, integration of lagging regions through infrastructure investment, balancing public and private investment and dealing with subsidy policies all need to be addressed.¹⁸ In addition, weak governance and limited government capacity and accountability will negatively impact policy implementation. Independent institutions, creating regulatory environments and accountability mechanisms, rule of law and citizen participation must be strived for to ensure that the poor also benefits from infrastructure provision. Thus Ali and Yao conclude that inclusive growth “calls for a right mix of incentives, institutions and infrastructure.”¹⁹

Private Sector Involvement in Infrastructure Provision

What are the roles of the public and private sectors in infrastructure development? Debate occurs over the different strengths in the provision of services offered by state, private sector and third sector (non-profit organizations). Generally in the twentieth century public provision of infrastructure through state monopolies tended to be the norm, due to concerns over the economic importance of essential services and the desire to look after the public interest and avoid private monopolies. This gave way to a change in attitude in recent decades about the provision of essential services with private infrastructure seen by many as the way to improve efficiency, innovation and services. At the forefront of this new model of infrastructure provision has been the World Bank, Asian Development Bank and other international multilateral agencies. However, this road has not been without problems – the Asian financial crisis, withdrawal of private investment, and several high-profile private infrastructure project collapses accompanied by increasing public opposition, has led to renewed debate about the appropriate roles of state versus market in the provision of infrastructure particularly for developing countries. (See Harris, 2003)

¹⁸ Farrington and Robinson, op. cit,

¹⁹ Ali and Yao, op. cit, p. 1

The World Bank policy stresses that “private initiative ... is key to promoting growth and poverty reduction”, seeking in this way to reduce drains on government expenditure from the operation of state monopolies and hence increase spending on pro-poor policies. However, this strategy has been challenged by those who question whether the poor is better served by private-sector investment. World Bank and ADB pro-privatization policies have been criticized as being detrimental to the poor, treating water as an economic, not public good, and being non-inclusive and non-transparent.²⁰ Bull and McNeil examine the role of the World Bank and private water companies, concluding that the experience in Latin America demonstrates “the difficulties in attracting private investment while at the same time pursuing improved services for the poor.”²¹ Harris ultimately concludes that the problems that have been made apparent in private schemes “will not be solved by a reversion to public ownership either” but rather future attempts must focus on the adoption of policies “that more fully address...the fundamental challenges inherent in infrastructure...if they are to improve and expand the provision of infrastructure services.”²²

At a time of increased reluctance of the private sector to invest in infrastructure projects in developing countries, Public Private Partnerships (hereafter PPPs) have increasingly been seen as the way to attract private investors.²³ They have been seen as a way to boost insufficient domestic public finances and official development aid (ODA) for the provision of infrastructure where government resources were inadequate and the quality and efficiency of services provided were poor.²⁴ While in general, PPPs can be thought of as cooperation between the government and private sector to provide essential services there are many different contested meanings to the term “public private partnership”. (see Guoruo and Linder 1999) When examining the plethora of different research traditions in the extensive literature concerning PPPs, it is useful to bear in mind the approach taken by Weihe Guoruo.²⁵ His detailed classification of the PPP

²⁰ “Reclaiming Public Water In Asia” op. cit

²¹ Bull and McNeil (Eds.) *Development Issues in Global Governance: Public-Private Partnership and Market Multilateralism*, (Routledge London, 2007) p. 142

²² Harris, *Private Participation in Infrastructure in Developing Countries: Trends, Impacts and Policy Lessons*, World Bank Working Paper no. 5, (World Bank, Washington D.C. 2003), p. 2

²³ Refer Noel and Brzeski, *Mobilizing Private Finance for Local Infrastructure in Europe and Central Asia: An Alternative Public Private Partnership Framework*, World Bank Working Paper no. 46, (World Bank, 2005)

²⁴ Pessoa, “Public-Private Partnerships in Developing Countries: Are Infrastructures Responding to the New ODA Strategy?” *Journal of International Development*, 20, (2008) pp. 311-325

²⁵ Weihe, Guoruo, “Ordering Disorder: On the Perplexities of the Partnership Literature”, *Australian Journal of Public Administration*, Vol. 67, No. 4 (2008), pp. 430-442

concept allows clear delineation between the four main approaches, namely (1) the urban regeneration approach, (2) the policy approach, (3) the infrastructure approach (4) the development approach. He uses this framework to examine the different formal structures, actors, context and project objectives of these groups. Of interest to us here are his conclusions regarding the infrastructure approach which focuses mainly on infrastructure projects “where private finance is typically involved and where different elements such as construction, maintenance and operation are integrated” and the development approach where development projects and programs are the focus where “third party international organizations act as PPP facilitators.”²⁶ Thus the definition of PPPs as used in this paper refers to “arrangements whereby private parties participate in, or provide support for, the provision of infrastructure and the delivery of public infrastructure-based services.”²⁷

Characteristics of PPPs as related to infrastructure provision include: private execution and financing of public investment, emphasis on service provision, and the transferring of significant risk from the government to the private sector. Thus these arrangements are attractive to governments as they are thought to achieve Value for Money (VfM) and deliver a better quality service for the same amount spent by the public sector. In addition, PPPs allow governments to increase infrastructure provision by moving investment off-budget and to accelerate projects that might get otherwise delayed.²⁸ Typical arrangements can include PPP alliances and mutual financial arrangements such as BOT (build-own-transfer), BOOT (build-own-operate-transfer) and sale-and-lease back arrangements. Issues focused on in the literature include the following: financing (raising financing for PPPs), ownership and contracting, risk transfer, efficiency (competition), tariffs and corruption.

Researchers are divided on the strengths and weaknesses of PPPs. Vaillancourt and Rosenace conclude that their weaknesses include problems in the areas of equity, access and democracy. In particular, regarding the implementation of PPPs in developing countries, there is a consensus that governance issues should be addressed prior to implementation, for example, establishing policy and legislative frameworks to enable successful partnerships and improving government

²⁶ Op. cit, p.432

²⁷ Grimsey and Lewis 2004 quoted in Guoro Weihe, p.432

²⁸ Public-private partnerships in Infrastructure, <http://go.worldbank.org/E787QINP90>, accessed 23/08/09

capacity.²⁹ Where public sector governance is weak (as is the case in many developing countries) there is increased need for regulatory and financial structures to deal with the many associated risks and ensuring that projects are “environmentally responsive, socially sensitive, economically viable, and politically feasible.”³⁰ Thus successful PPPs are those characterized by (1) contractible quality of services, (2) adequate risk transfer to the private sector, (3) competition or incentive-based regulation and (4) an appropriate institutional framework.³¹

(3) Private Sector Involvement in Water Infrastructure

The water sector has traditionally found it difficult to attract private investment compared to other infrastructure sectors. Between 1995 and 2004, water projects in developing countries attracted only five percent of investment commitments in infrastructure projects with private participation.³² This was due to a variety of issues, the most pressing being water’s status as a public good, which means that services provided at a reasonable cost for political reasons, must ultimately be funded by the consumer either through taxes or charges.³³ In addition to sociopolitical issues such as tariff levels and public opposition, contract disputes and financing problems are also common. Despite this, during the 1990s private sector involvement was hailed by many as the way for developing countries to solve problems in the provision of water services. However, after initial surges in foreign investment in water treatment and sanitation projects in developing countries, in particular Southeast Asia, in the wake of the Asian financial crisis of 1997 and failures in water sector projects, levels of investment and therefore confidence on the part of private investors decreased dramatically (see figure 1.2 following).

²⁹ Deloitte, *Closing the Infrastructure Gap: The Role of Public Private Partnerships* (Deloitte Research Study, 2006)

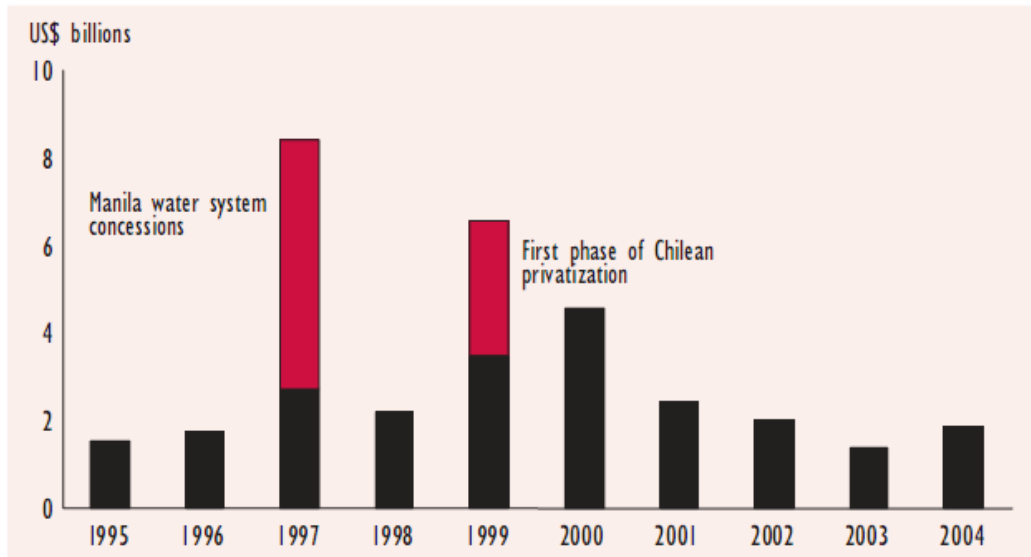
³⁰ Public-private partnerships in Infrastructure, <http://go.worldbank.org/E787QINP90>, accessed 23/08/09

³¹ IMF, *op. cit.*, p. 15

³² Izaguirre and Hunt, “Public Policy and the Private Sector: Private Water Projects”, Note no. 297, (The World Bank 發展研究年會 Group 2005), p.2

³³ Sawhney, *op. cit.*, p. 21

Figure 1.3 Investment Commitments in Water and Sewerage Projects with Private Participation in Developing Countries, 1995-2004



Note: Includes projects that reached financial closure in 1990-2004.
Source: Izaguirre and Hunt 2005, p. 3

Decline in overall investment has only been arrested by large-scale investment in fewer countries, mainly China, Chile and Mexico. Levels of cancellation of water projects in developing countries during this period (1990 to 2004) were high across the board, with twenty water projects being cancelled, representing 37 percent of investment commitments.³⁴ According to Sawhney, in Southeast Asia problems mainly occurred “with “take or pay” type of Build-Own-Operate systems where financially-constrained governments took on the commercial risk of investment in order to attract foreign investment. Since state departments in these countries are financially constrained to begin with, this resulted in early termination of contracts and the exodus of many multinationals from the region.”³⁵

So what does this mean for the GMS? Countries in the region are feeling the effect of private sector reluctance to invest in water infrastructure. Millennium Development Goals will not be met with the current shortfall in investment levels (5 billion US dollars in investment levels in

³⁴ Izaguirre and Hunt op. cit p. 2

³⁵ Sawhney op.cit p. 9

the water and sanitation services alone.³⁶) As can be seen by table 1.3 following, GMS countries are characterized by differing levels of access to safe water, with Laos only achieving 58% coverage in the year 2003. In addition it can be noted that urban areas consistently achieve much higher rates of access to water than rural areas and this is an on-going problem due to the high cost of providing access to water outside of city areas.

Table 1.3 Access to Improved Water Services in the GMS

	Cambodia	China	Lao PDR	Thailand	Vietnam
Access to improved water services (% of total population)	29 (1998)	75 (1998) --	50 (1998)	93 (1998)	41 (1998)
	44 (2003)		58 (2003)	93 (2003)	49 (2003)
Access to improved water services (% of urban population)	60 (1998)	95 (1998)	77 (1998)	99 (1998)	77 (1998)
	72 (2003)	--	85 (2003)	95 (2003)	76 (2003)
Access to improved water services (% of rural population)	24 (1998)	65 (1998)	45 (1998)	92 (1998)	29 (1998)
	40 (2003)	--	48 (2003)	91 (2003)	26 (2003)

Source: Connecting East Asia 2006, Appendix, pp A-7 and A-8

Private investment in water and sanitation has varied greatly between GMS countries over the last twenty years. From table 1.4 following we can see that China accounts for the majority of private investment with nearly 200 projects, Cambodia, Laos and Myanmar record no PPI projects between 1990 and 2006, while Thailand and Vietnam account for 16 projects with a combined investment level of 809 million US dollars. It should be noted that the most common forms of private sector involvement have been Greenfield and concession projects (56% and 38% respectively).

³⁶ Izaguirre and Hunt op. cit p. 2

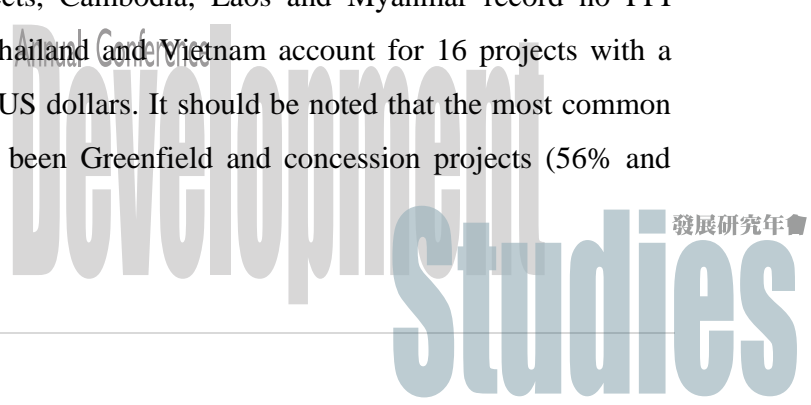


Table 1.4 Private Sector Projects and Investments in Water and Sanitation in the GMS
(1990-2006)

Country	Number of Projects 1990-2006	Investment (US millions)	Type of project
Cambodia	0	0	0
Laos	0	0	0
China	193	5505	Concession (71), Divestiture (3), Greenfield (112), Man/Lease Contract (7)
Vietnam	2	213	Greenfield (2)
Thailand	14	596	Concession (8), Divestiture (1), Greenfield (4), Man/Lease Contract (1)
Myanmar	0	0	0

Source: World Bank PPI database (ppi.worldbank.org accessed 01/09/09)

A common form of PPP in the GMS has been Build-Own-Transfer (BOT) arrangements or variations of these such as Rehabilitate-Own-Transfer for bulk-water supply protection and treatment and concession contracts that involve the private sector in the distribution of water to customers.³⁷ Divestitures and lease and management contracts are not frequently seen in the GMS. China and Vietnam have generally favored BOT arrangements for water provision where the private sector builds the facility and then eventually transfers it back to the government after an initial period of operation. Prior to 2002 in China, BOT arrangements “used for the bulk production and treatment of water supply which is then sold to the public water company for distribution to customers” was the only system allowed by law. In 2002, changes to the legislation allowed foreign capital to be involved in water pipe construction and direct water retailing. Thus companies could enter into concessions involving distribution and most contracts were joint ventures with provincial or municipal authorities. However, the majority of projects

³⁷ Castalia Strategic Advisors, “Sector Note on Water Supply and Sanitation for Infrastructure in East Asia and the Pacific Flagship” p. 89 (2004) <http://www.castalia.fr>.

have not been awarded based on competitive tender.³⁸ Thus China has been quick to involve the private sector in water supply, now being one of the biggest markets for private water investors.

Privatization has been heavily promoted in Thailand. In the aftermath of the 1997 Asian Financial Crisis, the IMF rescue package insisted on government cost-reduction policies, including the introduction of private sector concessions, leases and expanded joint-investment opportunities in state enterprises.³⁹ Thus the East Water Company was created as a private company in 1992 to take over operations of the Provincial Water Authority. Since then, the government has approved the Pathumthani-Rangsit Waterworks Project (2002) which would grant private companies full concession rights to produce, distribute, and maintain waterworks systems. It is expected that under this system, water prices would rise to meet the true cost of production, and concerns have been expressed about the ability of the poor to afford increased prices.

In addition there are a few examples of lease and management contracts such as Design-Build-Lease (DBL) contracts used in Cambodia and Vietnam which have been designed to encourage private sector expertise in the development and operation of systems but using public sector investment. Despite legislation allowing private sector investment in Vietnam in water supply, investment in the water sector has been slow.⁴⁰ Two projects with private sector involvement for supplying water to Ho Chi Minh City were cancelled with the government giving the reason as tariffs becoming too high because of imported know-how, equipment and materials.⁴¹ However, the government subsequently decided to go ahead with a BOO project for a new water treatment plant (Thu Duc) signing contracts in 2005 with a consortium of local companies and international contractors which also subsequently ran into difficulties. Little incentive exists for private investment in water supply in Vietnam with fixed tariffs, no independent regulatory framework, restrictive regulations and an unclear legal position.⁴²

³⁸ Castalia, op. cit, p. 92

³⁹ Water Democracy Asia, op. cit

⁴⁰ See Staykova, *Water Supply and Sanitation Strategy: Building on a Solid Foundation*, World Bank Working Paper 37189, (2006) p. 10, relevant legislation: 1999 Law on Enterprise, 1992 Foreign Investment Law

⁴¹ Staykova, op. cit, p. 10

⁴² Staykova, op. cit, p. 43

Cambodia has had a more difficult road with BOT and BOO contracts awarded without competitive tender and lacking many of the provisions for licensing, tariffs and service quality.⁴³ Despite governmental encouragement the participation of the private sector in water service provision has been very limited. Cambodia lacks a formal legal framework to govern private sector participation.⁴⁴ In addition, Cambodia's basic infrastructure suffered damage and neglect after years of war and upheaval and the government has struggled to provide services to its rapidly growing population. Thus it would appear that encouraging private investment in the water sector at present is a near impossible task.

(4) Discussion

Are PPPs the best way to fulfill the goals of inclusive development? Or can public utilities better provide access to water for the poor? In order to answer these questions we must first remind ourselves of the goals of inclusive development. As previously stated, inclusive development aims to increase broad-based participation through the reduction of poverty and social exclusions. A key component of this is enhancing access of the poor to basic services such as water. Adequate provision of water and other basic utilities contribute to the achievement of the Millennium Development Goals and also increase "positive externalities" such as increasing educational opportunities.⁴⁵ So what is the best way to increase the poor's access to services? We must bear in mind the particular problems of water provision in the GMS such as lack of access in urban slums as well as remote rural areas, low levels of initial access to water in general, as well as lack of capital, and weak institutional and regulatory frameworks. It will be seen that reform of existing public utilities is better able to fulfill the goals of inclusive development by providing affordable access to clean water for the poor in the GMS.

⁴³ Castalia, *op. cit.*, p. 92

⁴⁴ There is currently a draft Water Sector Regulatory Law and the proposed establishment of an independent regulatory body to regulate public and private sector service providers.

⁴⁵ "Equitable Access to Basic Utilities: Public versus Private Provision and Beyond", Poverty in Focus Paper no. 18, (August 2009, International Policy Centre for Inclusive Growth, Poverty Practice, Bureau for Development Policy, UNDP) p. 3

As has been seen, countries in the GMS, at varying levels of development and with different financing capabilities, have sought to engage the private sector in infrastructure provision for water supply with varying results. Factors which have inhibited the provision of water services (common to developing countries in general) include: large investment needs with low revenue bases, low level of tariffs resulting in lack of extra capital to expand services and the low purchasing power of the population.⁴⁶ The private sector has been reluctant to get involved in the water sector in the GMS (China aside) due to these kinds of challenges. In fact, PPPs have not been as effective as anticipated with only one in three of four countries of the poorest countries being successful in getting the private sector interested in participating in the financing of development of their infrastructure needs.⁴⁷ Thus the most fundamental problem with PPPs is the inability of GMS countries to attract private investment in the first place. This does not prevent the ADB from continuing to recommend PPPs as the way forward for provision of water services in the region, although there is now growing recognition by the ADB that GMS nations having difficulty attracting private sector funds must work first towards addressing underlying structural problems to entice such investment.

For countries that have attracted private investment through PPP projects, a major financing problem in the water sector has arisen over the issue of utility pricing, namely water tariffs. Under Build-Operate-Transfer (BOT) contracts, (where commonly a private company seeks to recoup the money it has invested to build a reservoir or treatment plant by operating the plant and selling the water to a water authority over a long timeframe) water authorities agree on set prices for water purchase thus ensuring the profit of the private company. Thus the higher the price at which the water is sold, the greater the company's profits and the greater the incentive for the company to fix the price as high as possible. Tactics such as corruption or exaggeration of the possible demand for water, or of construction costs are not unknown and this results in public authorities having to pay too much for their water, or undertaking to buy more water than needed.⁴⁸ For example, the contract of the Thu Duc treatment plant in Ho Chi Minh City, Vietnam, (built under a USD\$154m BOT contract from 1997 jointly by a French and a

⁴⁶ Staykova, op. cit, p. xii

⁴⁷ Estache, "PPI partnerships versus PPI Divorces in LDCs", World Bank Working Paper no. 3470, World Bank and ECARES, Jan 2005

⁴⁸ "Water Privatization and Restructuring in Asia-Pacific", Hall, Corral et. al, PSIRU, London, December 2004, p. 23

Malaysian company) was terminated in 2003 after disputes over contract interpretation. Under the contract, once operational, the plant would sell water at 20 cents per cubic meter, but consumers would be charged only 11 cents with the balance subsidized by the city council.⁴⁹ Subsequently, the Ho Chi Minh city council stated its intention to use a local company to complete the project to ensure equitable water prices.

Despite growing public opposition to tariff increases, ADB policies continue to stress the importance of increasing water rates to recover the full costs of providing a service from the customers. Higher tariffs, despite being a burden on the poor are hence seen as necessary to allow private companies to make reasonable profits as well as earn extra capital that can be used to improve services and provide pro-poor measures. While inadequate revenues result in decline of water assets, increasing tariffs is an unpopular move, one which politicians are generally unwilling to make, thus the issue of tariff increases under privatization is central to on-going problems in private sector implementation. Tariffs have proved the stumbling block to successful implementation in many developing countries, for example, Argentina, Bolivia, Senegal and Mali have all experienced contract termination of private concessionaries due to tariff disputes.⁵⁰

As we have seen in the GMS, Vietnam has experienced similar problems with PPP implementation due to tariff disputes, leading to the termination of two contracts for private water provision in Ho Chi Minh City. In addition, Thailand has also experienced project implementation problems due, in part, to tariffs. Privatization of the water sector was pushed in Thailand by the World Bank in the wake of the Asian Financial Crisis as evidenced by the on-going privatization of the Thai waterworks system. The establishment of the East Water Company (in 1992) and the Pathumthani Company in 1995 with plans for further extensive privatization of the water sector resulted in various contractual conflicts as well as accusations of rising water tariffs, lack of transparency and accountability.⁵¹ Thames Water's bulk water Pathumthani BOT project, while technically excellent was not financially satisfactory for the

⁴⁹ "Water Privatization and Restructuring in Asia-Pacific, op. cit, p. 23

⁵⁰ Equitable Access to Basic Utilities, op. cit, p. 4

⁵¹ "Privatization of Waterworks in Thailand", Chantawong, Khachasawat and Kittivejakul in Reclaiming Public Water for Asia, op. cit, pp. 59-61

Thai government or the Provincial Water Authority⁵² as it failed to provide the contracted number of connections. This was due to the large number of industries and residents who continued to use less expensive artesian well water rather than water supplied by Pathumthani at higher prices due to increasing tariffs.⁵³ Thus there is a conflict between the needs of the poor (for affordable water) and the private sector (to set tariffs to achieve full cost recovery and profit maximization). Even when service is improved under private sector provision, if the service provided is too expensive, the poor will seek other avenues for their water needs.

Connection to the water network is also an issue that needs addressing as the poor often cannot afford high connection fees. The private sector has little incentive to provide access to those who live either in slum areas with unclear property rights or remote rural areas. It is difficult for governments aiming to commercialize water resources and privatize water utilities to ensure that private companies are willing to provide services to the poor without foregoing profits. Specific provisions, such as subsidies, are necessary to encourage service provision for all as “the private sector [does not] automatically want to sell water to the greatest number of people. Understandably, [in many cases] private investors have established networks in the most densely populated urban and commercial neighborhoods, where the investment required is lowest and consumption is highest.”⁵⁴ In this kind of scenario, it is the poor who loses out.

So what are the effect on access and affordability of water for the poor with private provision? In many cases in developing countries, tariffs under private provision of water have risen to such an extent that the poor are unwilling or unable to pay higher costs. A common story is the one of Zambia where after commercialization of the water sector, seven-fold increases occurred in the cost of water resulting in urban households in extreme and moderate poverty unable to afford water.⁵⁵ This not only leads to hardship, but widespread public dissatisfaction. Subsidies are a

⁵² Thailand’s water system is managed by two bodies, the Municipal Water Authority and the Provincial Water Authority. The ADB itself states that PPPs are “not a universal solution to underlying sector investment and performance problems.”⁵²

⁵³ “Thailand’s Uncertain Future”, Global Water Intelligence, Vol. 2, Issue 3, March 2001

⁵⁴ Ibid, p.5

⁵⁵ According to the 5% benchmark (ration of household spending on water to household income). Dagdeviren and Hailu, “Tariff Hikes with Low Investment: The Story of the Urban Water Sector in Zambia”, One Pager no. 57 (IPC, June 2008)

common way for governments to bring down tariffs that have increased to enable cost-recovery by the private sector, but unless carefully targeted, subsidies often do not reach the poor. Subsidies must also be professionally administered thus the need to pay attention to government capacity as well as including regulators in design and implementation decisions.

The essential role of governments in PPPs is not only “to define the scope of business, specify priorities and outputs [but also to] set the tools (through contracts, regulatory agencies, laws, market tools etc)” otherwise quality and reliability may be compromised and PPPs may fail.⁵⁶ Thus improving institutional and regulatory frameworks prior to entering into agreements can help lessen transaction costs and risks. For example, in the GMS there are too many government agencies responsible for implementing and oversight of the water sector which leads to unclear allocation of roles and lack of ownership. The majority of countries in the GMS have no regulatory agency with sectoral responsibility for water. For example, Thailand, Vietnam China and Cambodia all lack dedicated regulatory agencies, with Cambodia’s urban water supply under the responsibility of the Ministry of Industry, Mines and Energy while rural water supply is handled by the Ministry of Rural Development. The establishment of regulatory and legislative frameworks would facilitate better oversight and accountability of the water sector and thus better success rates of PPPs.

The mixed nature of the agreement between the public and private sector needed in PPPs means that without a strong regulatory and legal framework corruption becomes a major factor impeding project success. What is lacking in GMS countries is strong government commitment to stamping out corruption and strengthening accountability mechanisms. Surveys of corruption in Cambodia and Thailand point to endemic and pervasive corruption throughout both societies. (see table 1.6 following) Despite high levels of corruption in Cambodia, no fully autonomous anti-corruption body exists and anti-corruption laws have still not been implemented. With weak separation of powers, weak law enforcement and lack of transparency, government interference

⁵⁶ Ouyahia, M.A. “PPPs for Funding Municipal Drinking Water Infrastructure: What are the Challenges?”, Discussion Paper, PRI Project, Govt. of Canada, May 2006, p. 10

in awarding of contracts is common.⁵⁷ Similarly high levels of corruption pervade Thai society and politics despite the establishment of laws and independent bodies to combat corruption. This is because the legislation and bodies are not sufficiently strong and are subject to political interference. The public contracting system is open to widespread corruption and many approved projects benefit politicians, businessmen and government officials more than the public. With underlying structural problems such as these, it is difficult for PPPs to be successfully implemented. Unless corruption is addressed, it is unlikely that contracts will be awarded in a fair and transparent manner.

Table 1.6 Perception of Institutions Affected by Corruption (1- not corrupt, 5- very corrupt)

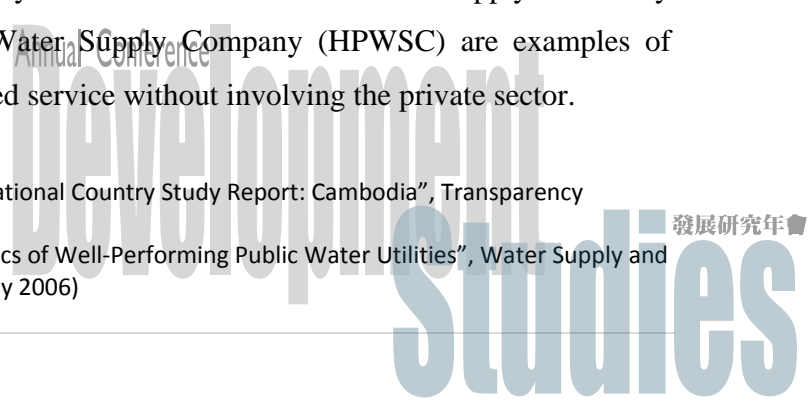
	Political Parties	Parliament/ Legislature	Business/ Private sector	Public Officials/ Civil Servants	Judiciary	Average
Cambodia	3.0	2.7	2.6	3.5	4.0	3.0
Thailand	4.1	3.1	3.2	3.6	2.8	3.3

Source: Transparency International, Global Corruption Barometer, 2009, p. 29

While private sector involvement has long been promoted by the ADB and World Bank as the best way to improve inefficient public provision of water, examination of successful examples of public provision of water in Cambodia and Vietnam show an alternate model. While many public utilities find themselves in a downward spiral because of weak performance incentives, the unwillingness of customers to pay cost-recovery tariffs, as well as insufficient funding and maintenance, turnarounds have been achieved in the public sector through focusing on greater accountability, performance and autonomy.⁵⁸ The Phnom Penh Water Supply Authority (PPSWA) and the Haiphong Provincial Water Supply Company (HPWSC) are examples of successful public utilities that have improved service without involving the private sector.

⁵⁷ "National Integrity Systems: Transparency International Country Study Report: Cambodia", Transparency International, 2006

⁵⁸ Baietti, Kingdom and van Ginneken "Characteristics of Well-Performing Public Water Utilities", Water Supply and Sanitation Working Notes, Note 9, (World Bank, May 2006)



In Cambodia, the PPSWA transformed itself from a badly-run, corrupt public utility into a highly regarded utility through a reform program funded by the World Bank, which resulted in about 750,000 people in Phnom Penh benefiting from an improved and more abundant water supply and less impact from flooding.⁵⁹ After the turmoil of the 1970s, Phnom Penh's water supply was in terrible shape and the performance of the PPWSA was lacking. However improvements in operational and sanitation policies as well as improvements in operational and financial performance changed it into an effective public sector water operator, both financially viable and well-performing.⁶⁰ After 1991, an institutional framework was created for water and sanitation supply, which included creation of legislation ensuring autonomy for the PPWSA as well as restructured water supply tariffs ensuring better implementation of the project. Initial changes included the replacement of corrupt bill collectors by an automated billing system, profit sharing systems to monitor corruption practices, the installation of meters for all connections and reductions in leakages through the introduction of new technology. In addition, a revolving fund was established to finance domestic connections to help the poor connect to the network. As a result connections in Phnom Penh increased from 10,777 in 1997 to 105,777 in 2004, which translates as the provision of 24-hour access to water for 750,000 residents. In addition, unaccounted water dropped from 57% in 1998 to 17% in 2003 and 6,708 connections were funded for the poor.⁶¹

While the PPSWA raised tariffs to achieve full cost recovery, tariffs are subsidized for the poor, Phnom Penh's experience with public utility water supply has shown that not only has access been improved, but also that costs can be kept down. For example, purchasing 7m³ from an independent seller costs a household in Phnom Penh US\$22.75 per month compared to purchasing water from the PPWSA at a cost of US\$0.91 per month. This results in a saving of US\$260 per year per household, which is a considerable sum.⁶² In addition as can be seen by the

⁵⁹ "Rehabilitating the Urban Water Sector in Cambodia, World Bank, (Water Supply and Sanitation Sector Board, 09/03/06)

⁶⁰ Ibid

⁶¹ Ibid

⁶² "From Bad Service to Outstanding Utility, Phnom Penh's Experience", in *Reclaiming Public Water for Asia*, op. cit, p.13

following table (Table 1.7) Phnom Penh has improved performance and in fact outperforms other private sector utilities in the Philippines.

In Vietnam, the experience of the HPWSC achieved turnaround through a ‘phuong’ model which focused on improvements in one ward at a time. Impetus for the reform (also aided by donor assistance) came in large part from a crisis in service delivery that led to riots and a fatality which resulted in the government reducing subsidies to allow the HPWSC more autonomy. As a result performance increased substantially, including the increase of metered connections between 1993 and 1999 from 0 to 81,000. Successful reform was due to a number of factors including the following: a new reform-minded managing director, use of the Phuong model, support from the owner, donor aid, staff training programs and autonomy from government interference.⁶³ As can be seen from Table 1.7 following, both utilities have improved performance, access and efficiency and compare favorably with private PSP concessions.

Table 1.7 Key Performance Data Summary of Water Utilities

	Water Supply Connections	Number of Employees	NRW %	Staff/1000 connections	Working Ratio	Service Coverage, Water Supply	Average domestic Tariff (nominal US\$/m ³)
PUBLIC UTILITY							
Haiphong	94,724	713 (2000)	70%	30 (1993)	0.82 (2000)	75% (2000)	0.18 (2000)
	(2000)	726 (2002)	(1993)	7.2 (2000)	0.62 (2002)	85% (2002)	0.18 (2002)
	131,136		44%	5.66 (2002)			
	(2002)		(2000)				
			32%				
			(2002)				

⁶³ “Characteristics of Well-Performing Water Utilities”, op. cit, p. 48

Phnom Penh	26,881 (1993) 147,000 (2006)	----	72% (1993) 6% (2006)	22 (1993) 4 (2006)	0.5 (1998) 0.3 (2003)	25% (1993) 90% (2006)	0.21 (1998) 0.25 (2003)
PSP concessions							
Jakarta			51	5.3 (2003)	0.8 (2003)		0.29 (2003)
Manila			62	5.6 (1998) 4.0 (2003)	1.2 (1998) 1.0 (2003)		0.12*(1998) 0.29*(2003)

- MWSI
- Source: Compiled from Connecting East Asia, ADB and World Bank

Conclusion

In recent years there has been an increasing tendency for governments to be attracted to public private partnerships (PPPs) in the provision of basic infrastructure services. However, while PPPs have been quite successful in some areas (namely telecommunications) they have not proved a panacea for the water sector. This relates to the specific challenges of the water sector as well as its nature as a public good. Hence the major problem facing GMS nations is their inability to attract any private investment for water infrastructure. This situation is likely to continue unless fundamental problems with weak institutional, regulatory and legal frameworks are addressed. Where PPP projects have been implemented in the region, (namely in China, Thailand and Vietnam) projects have been subject to cancellation and distress over tariffs and other issues. Thus this paper finds that private sector involvement in the new guise of PPPs in the water sector as encouraged by the World Bank and ADB do not prove a good model for the GMS. Insufficient data exists regarding on-going PPPs in the region regarding efficiency, access and affordability criteria and more research is needed in this area. However, it appears that without addressing issues of transparency, competition and accountability and pursuing careful pro-poor policies, PPPs will not provide the best model for providing access to water for the poor in the GMS.

We can see that many basic problems exist with the private provision of water services in the GMS. Until basic governance issues are dealt with and institutional frameworks are established, the water sector will continue to be troubled by lack of private investment. Thus most people in the region will continue to rely on public provision of water hence willingness to focus more on reform of existing public services may provide the solution. As has been shown, reform of public utilities in Cambodia and Vietnam has resulted in more effective performance and greater cost recovery enabling greater investment in water infrastructure. Greater coverage has been achieved without denying access to the poor. Thus multi-dimensional policy initiatives are needed to improve public utilities, maintain growth, as well as improve governance and institutional frameworks.

Continued enthusiasm for large-scale private sector participation in the water sector in the GMS seems unrealistic at the present time, given the reluctance of private investors. In the meantime other options must be considered, as exemplified by the outstanding performance of the public utility in Phnom Penh. In addition, work must continue to improve the regulatory environment, as well as improve business practices and legal and institutional frameworks in order to encourage private investment in the future. It must be acknowledged by donor agencies like the ADB that PPPs are not the only solution where underlying sector investment and performance problems are not dealt with. And it must also be kept in mind that if private participation is to occur, that special emphasis must be placed on provision of water services to the poor in order not to exacerbate existing divides between rich and poor.

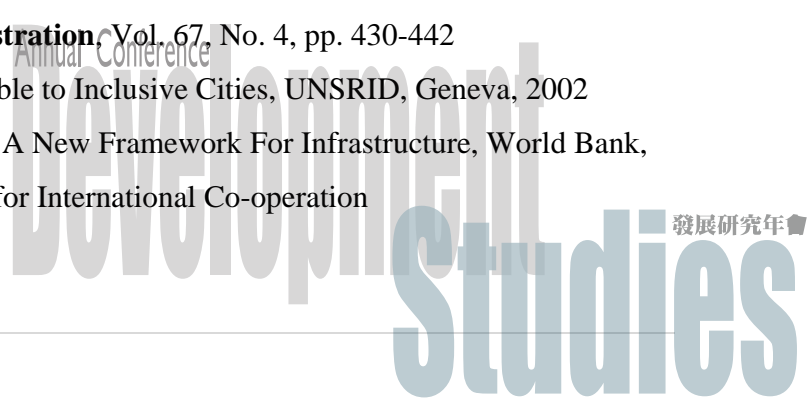


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