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國際學碩士學位論文

**A Study on Good Governance in Cambodia:
Water Supply of Phnom Penh**

프놈펜, 캄보디아 식수 공급 사례를 통한 굿 거버넌스 연구

2014年 8月

서울대학교國際大學院
國際學科國際協力專攻

金 娟珠

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A Study on Good Governance in Cambodia: Water Supply of Phnom Penh

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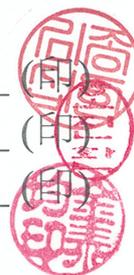
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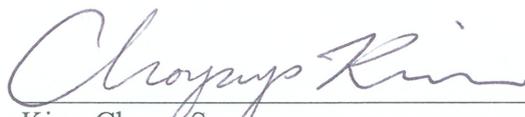
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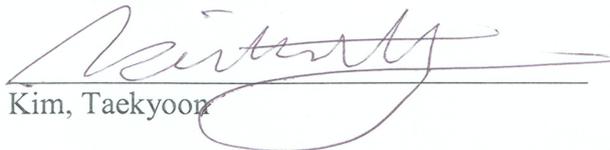
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ABSTRACT

The thesis explores the reasons of why despite institutional reform of Phnom Penh Water Supply Authority (PPWSA), the urban poor have to no option but to rely on private water vendors who charge water fee up to ten times more than that of PPWSA state water. The paper hypothesizes that involved actors and choices of these actors within the decision-making process negatively affects the water governance of Phnom Penh. This paper attempts to analyze who the set of actors are (domestic and non-domestic), actor interaction, and interaction outcome in accordance with the institutional analysis and development framework devised by Elinor Ostrom.

The paper's findings are the following: (i) there are five actors within the drinking water governance of Phnom Penh; (ii) these actors' are situated in an environment which restrain their decision making power; and (iii) this interaction of actors and institutions lead to corruption, transparency, accountability, inclusiveness, and participation problems which negatively affect the water governance.

The paper concludes this lack of governance is one of the core reasons why poor households in urban Phnom Penh still lack water connection. As a response to this situation, the paper recommends institutions to increase NGOs as watchdogs and mediators to monitor and evaluate the actors.

Key Words: Water Supply, Governance, Institution, Actor, Rational Choice Institutionalism, Phnom Penh Water Supply Authority, Decision Making

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LIST OF ABBREVIATIONS

Asian Development Bank	ADB
Cambodia People's Party	CPP
Cambodia Water Supply Association	CWSA
French Development Agency	AFD
Freshwater Action Network	FAN
Gender and Water Alliance	GWA
Global Water Partnership	GWP
Japanese International Cooperation Agency	JICA
International Organizations	IO
Ministry of Industry, Mines and Energy	MIME
Ministry of Industry and Handicrafts	MIH
Ministry of Interior	MOI
Ministry of Mines and Energy	MOME
Municipality of Phnom Penh	MPP
Nongovernmental Organizations	NGO
Non-Revenue Water	NRW
Organization for Economic Co-operation Development	OECD
Phnom Penh Water Supply Authority	PPWSA
Price Water Coopers	PWC
Rational Choice Institutionalism	RCI
Royal Government of Cambodia	RGC
Royal University of Phnom Penh	RUPP
Teang Tnaut Organization	TTO
United Nations Development Programme	UNDP
United Nations Transitional Authority in Cambodia	UNTAC
Urban Poor Woman Development	UPWD
World Bank	WB
Water Governance Facility	WGF
World Water Council	WWC

I. INTRODUCTION

Despite its reputation for lavishing tourist attractions, Jakarta has the one of the weakest water supply and sanitation sectors in Asia. The officials state household connections range from 46% to 56% whereas unofficial state only 25% of the true population is being served (Bakker and Kooy et al., 2008). According to Bakker and Kooy (2008), “Jakarta’s water supply system has been highly fragmented since its inception: access to a household network connection has been strongly differentiated economically (i.e. poverty is correlated with lack of access to a household connection, with the use of alternative sources, with low levels of water consumption, and with spending higher proportions of household income on water supplies) and spatially (i.e. those lacking access are concentrated in specific districts of the city, and within lower income areas in neighborhoods across the city).” Scholars such as Bakker and Kooy (2008) have concluded the lack of good governance of both public and private suppliers as its core reasons of water sector failure, as the government systematically prioritized water coverage to the rich and high income of European residents at the expense of the poor and low-income families. This is a typical example showing the lack of participation of smaller and weak political actors (poor) in the decision making process of the water sector which lead to poor governance.

Near Jakarta is Phnom Penh, the capital of Cambodia, known for its success of good governance in the water supply and sanitation sector. During the Khmer Rouge Regime in 1970s and up to the early 1990s, Cambodia’s water sector faced severe problems similar to those of other East Asian developing countries. The Phnom Penh Water Supply Authority (PPWSA), sole authority providing drinking water to the Phnom Penh residents, was in a state of chaos; the water loss was high, water fees were not properly collected, in addition to unplanned and poorly managed water utilities, the country was facing increasing urban

population and high amounts of government corruption. The Phnom Penh Water Supply Authority was bankrupt and the attempt to revive the water sector was at stake as Cambodia was under strong international trade sanctions until the United Nations Transitional Authority in Cambodia (UNTAC) established the Royal Government of Cambodia (RGC) in 1993. With the new government and full support of Prime Minister Hun Sen, the water supply and sanitation sector has gone through major reconstruction; the government received large amounts of international aid amounting up to 233,000,000 US dollars from the World Bank (WB), Asian Development Bank (ADB), Japanese International Cooperation Agency (JICA), French Development Agency (AFD) and etc., in forms of grants and loans to reform construction, structure, management and maintenance of the water sector. Over the course of 15 years, Phnom Penh has increased its coverage to 557% with an annual water production of 437% (Das, Chan, Visoth, et al., 2010). According to Ek Sonn Chan, former director of Phnom Penh Water Supply Authority, the success of water reform was due to the commitment towards tackling government corruption, by making all government officials and political class to pay their unpaid bills (mostly politicians, civil servants, relatives of the royal family etc.), and by giving high incentives and disincentives to the workers. The organization structure, management process, water bill collection system, water leakage problems all went through various steps of reforms to increase efficiency and effectiveness to provide clean water for all (Chan, 2009).

1. Research Question

As we have seen above, Jakarta and Phnom Penh show contradicting results from the governance of water supply and sanitation. Due to failure of governance, Jakarta is facing a vicious cycle providing water supply only to the rich at the expense of the poor whereas

Phnom Penh's water supply and sanitation is improving by day with increasing connection coverage to its poor. Internationally and domestically, Phnom Penh has been noted for good governance and leadership promoting safe and clean water to its people. Ek Sonn Chan exclaims the water tariff of Phnom Penh is one of the lowest in the Asian countries and is proud to state even the poorest families are able to receive water supply as the PPWSA gives 30% to 100% connection fee subsidies (Chan, 2009). PPWSA has received the Stockholm Water Industry Awards and is now an example of good governance for water supply for cities in Cambodia and developing countries. The former director general and international literature encourage other water authorities to follow the path of PPWSA in tackling corruption and to become independent from political and government influence. The Asian Development Bank (2006) states 100% of the urban population and 90% of the peri-urban population of Phnom Penh have connection coverage. With evidence from literatures and government reports, we can safely conclude Phnom Penh residents are now well connected to water supply.

This, however, is not the reality of Phnom Penh's urban poor. After numerous fieldworks in Phnom Penh villages, I have witnessed many communes and villages that have little for no water connection. If PPWSA had eradicated corruption and provided water connection subsidies, why do households in Phnom Penh still illegally connect for water connections? Why do the majority of the households in the slum and poor urban areas still rely on private vendors who charge water fees up to ten times more than that of state water? It is understandable peri-urban areas and outskirts of Phnom Penh lack water supply as distribution of infrastructures (i.e. lack of roads and treatment facilities) are still in progress. However, there are communes and villages even in the core urban areas near the market and the railways of Phnom Penh that do not have water connection from the public PPWSA despite the existence of main pipelines and water facilities adjacent to the neighborhoods. If

the water system is truly well maintained by “good governance” why haven’t these low-income households been able to voice out their problems? Why haven’t they been able to receive connection subsidies? In general, what problems are occurring in the overall water governance of Phnom Penh? Therefore, this thesis attempts to breakdown the actors and influencing institutions that take part in the decision-making process and hope to analyze what specific problems, whether it be operation or public policy problems, that have been negatively affecting the poor. Based on the analysis of the institutions and actors decision-making process, this thesis will verify the existence of good governance in the water sector of Phnom Penh. The paper uses various international reports and government documents to provide overall literature of governance in addition to stakeholder and household interviews to understand the reality of water governance. The research question is as follows: “What problems of the decision-making process are preventing the urban poor to benefit from good governance of Phnom Penh Water Supply Authority (PPWSA)?”

2. Hypothesis

Phnom Penh Water Authority has been autonomous since 1996. The autonomy was one of the first in Cambodia and has been appraised for its independency from the government and political party. Therefore, PPWSA highly promotes and values the freedom of its own decision-making and policies. However, the current Cambodian culture is still heavily based on a top-down approach with much government bureau and political party intervention. In addition, the international organizations still heavily frame and influence the decision making of poor countries such as Cambodia. In this paper, the government bureau and political party are domestic institutions and the international organizations are referred to as non-domestic institutions. With these circumstances, this paper hypothesizes based on the new

institutionalism theory, more specifically rational choice institutionalism- the actors within the water governance are restrained to take specific decisions that prevent the poor from water supply.

3. Reason of Choice and Significance

Since the late 1990s, international scholars and organizations have always praised Phnom Penh's Water Supply Authority for its good governance. Many journals engage in topics of why PPWSA was a success –mostly in terms of efficiency- and why it should be used as an example for other countries. Most journals base this argument drawn from the evidence of increased water revenues, decreased water loss, and good water tariffs. On paper, the PPWSA's policies are solid and poor-targeted; however, the reality of Phnom Penh is different. This paper is significant as it looks in to the reasons of this gap shedding light on what problems are present in actor decision-making.

Currently the PPWSA is increasing its ownership and administrative control to the remaining cities of Cambodia. PPWSA has complete ownership of the PURSAT Water Supply Authority in the Pursat Province; provides technical assistance and knowledge sharing with other water authorities in seven cities through JICA (Interview with External Bank, personal communication, April 2014). Therefore, it is important to deconstruct the decision-making process to share what factors in the decision making process are recommendable to other cities and what factors may need improvement.

4. Methodology

This thesis uses a qualitative methodology to understand the water governance of Phnom Penh's drinking water. With this research, it attempts to unravel the decision-making gaps of institutions and actors in understanding why the poor villages of Phnom Penh still lack water supply from PPWSA. The literature review consists of (i) relationship of water, poverty and Phnom Penh; (ii) governance and development; and (iii) Phnom Penh Water Supply Authority before and after the institutional reform. With understanding of the overall background, the paper uses the rational choice institutionalism theory to base its ground on using the Institutional Analysis and Development Framework devised by Elinor Ostrom. The paper attempts to use the framework on (i) analysis on actor situation; (ii) analysis on interaction; and (iii) analysis on the outcomes. Evidence will be drawn from government papers, Phnom Penh Water Supply Authority documents, international organizations reports, and field interviews with key stakeholders. Stakeholder interviews include Phnom Penh Water Supply Authority (PPWSA), World Bank (WB), Asian Development Bank (ADB), Japanese International Cooperation Agency (JICA), professors at the Royal University of Phnom Penh (RUPP), former consultants (Cambodia Water Supply Association), NGOs (Teang Tnaut Organization, Urban Poor Woman Development), research institutions (Cambodia Development Research Institute) and most importantly commune chiefs and low-income residents of eight communities in Phnom Penh city. World Bank, Asian Development Bank, JICA were specifically chosen as they participated in the establishment of PPWSA and are currently conducting international development projects for increasing coverage of water supply, technical and administrative support and sustainability of the water sector.

Interviews were conducted with commune chiefs and residents of eight communities in the urban Phnom Penh area. The field sites were chosen from the help and guidance of Mr. Vin Spoann (Professor, Environmental Studies Department of Royal University of Phnom Penh), Mr. Kob Math (Analyst, Asian Development Bank), Mr. Meng Cheang (Technical Manager,

Teang Tnaut Organization), Mr. Thy Vichith (Urban Woman Poor Development). The interviews with the commune chiefs and residents were conducted from April 21st to April 29th 2014 from 9:00 am to 6:00 pm. Interviewees were selected randomly and conducted in Khmer language. Two researchers at the department of Environmental Science at Royal University of Phnom Penh provided translations from Khmer to English. The commune chiefs were asked specifically to understand the general situation of water supply in the community and the residents were chosen randomly. Most of the interviewees were women as the interviews were conducted during the day time; most men were either working or did not handle family matters such as utility bills. The names of the villages, commune chiefs (former and present) and residents were asked to be omitted in paper in accordance with the code of ethics and the fear of political retaliation from higher authorities as they deal with sensitive political matters. The field research is comprised of a mixture of surveys and in depth interviews targeting the urban poor and slum areas in the city. Among the eight communities, three villages are chosen as case studies.

II. LITERATURE REVIEW

1. Water, Poverty, and Phnom Penh

Water and poverty are interlinked with many economic, social, environmental, and political backgrounds such as high connection and tariff fees, government's corruption, chemical contamination, and low capacity of public and private suppliers (McIntosh, 2003). Many developing countries are more affected as the poor lack safe drinking water, are more prone

to water related diseases and are more affected by environmental and financial based conflicts such as water pricing (UNDP, 2004). As a response, target ten¹ and eleven² of the Millennium Declaration was adopted with a purpose to improve water supply and sanitation of almost a billion people in developing countries (UN Habitat, 2003). Target ten and eleven specifically relate with cities that have increasing population such as Phnom Penh. Despite the country's abundant water supply from Mekong River, Bassac River and Tonle Sap Lake, current situations of rural-urban migration, weak infrastructure, and tenuous economy make MDG target 10 and 11 more challenging (Heinonen, 2005). Presently the slum population of Phnom Penh has increased in the previous years as shown in the figure below.

	Year 1998	Year 1999		Year 2002		
	Total Pop.	Total (est.)	Urban Poor	Total(est.)	Urban Poor	Urban Poverty
5%growth	999,800	1,049,790	207,150	1,157,400	228,400	19.7%
8%growth	999,800	1,079,790	207,150	1,224,480	241,600	19.7%

Table 1. Population of Phnom Penh, including urban poor

Source: Government of Cambodia 2000, Squatter and Urban Poor Federation 1999, Fallavier 2003)

Presently in Phnom Penh, over 30% of the 1.3 million populations live without adequate housing and basic service (Heinonen, 2005). Migrants settle in places near their workplace such as the market, factories, and next to the train stations earning a daily average of UD 3.5 dollars per household (Fallavier, 2003). In 1999, local NGOs had surveyed about 173,000 persons living in low-income settlements (Fallavier, 2003). In addition, a large number of low income families- up to 20%- have not been counted as members of the communities; this would account a number of (est.) 35,000 people of invisible poor who are not counted in the

¹ Target 10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

² Target 11. Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers

consensus for a figure of 207,150 in 1999 (Royal Government of Cambodia, 2000). These neighborhoods are socially, economically, and politically disadvantaged with lack of basic infrastructure, land ownership, health care, education and etc.

In many Asian cities, including Phnom Penh, urbanization makes urban water management one top priorities (Das, Chan, Visoth, et al., 2010). According to the United Nations “the right to water is indispensable for leading a life in human dignity” and “a prerequisite for the realization of other human rights.” Cambodia’s National Water Strategy and Policies states that every Cambodian should have safe water and sanitation by 2025 (Bridges, 2007). To provide water supply, governance is a major obstacle for many developing countries as they have weak ownership, capacity, empowerment of locals, and high corruption. Without proper governance, water problems especially take advantage of the poor leading a vicious cycle. The United Nations Development Programme (2004) states, “the water crisis that humankind is facing today is largely of our own making” and “water challenges are not from the natural limitations of water supply of the lack of financing and appropriate technologies (though these are serious constraints), but rather from profound failures in water governance, i.e., the ways in which individuals and societies had assigned value to, made decisions about, and assigned the water resources available to them.”

2. Governance and Development

Depending on the how much effective and efficient governance a country has, the economic, social and environmental outcome of development varies; thus, governance is important for developing countries because poverty reduction is brought by “a stable and just social order founded on clear institutional rules and effective and equitable markets” (Rodgers and Hall, 2003). A strong causation from better governance to better development outcomes such as

higher per capita incomes, lower infant mortality and higher literacy rates is well noted among researchers (Kaufmann et al., 1999). “Distributed governance (Kooiman, 1993)” among the public, private, and civil society is expected to bring more competition, more accountable public administrations and more transparent processes that address corruption (Rodgers and Hall, 2003). Thus, international institutions and multilateral donors are increasingly basing their loans and grants upon how much good and distributed governance is being seen in the recipient countries. For example, the Urban Water Supply Project initiated by the World Bank was to increase its governance and water supply of Phnom Penh. As one of its primary objectives, the World Bank (Project Completion Report, 2004) insisted water management reforms in an attempt to “create institutions that could maintain and expand service in an efficient, equitable, and sustainable manner, consistent with public demands.” Scholars, donors and policy makers have agreed the improvement of water governance is the key to solving the water crisis in development countries (Rodgers and Hall 2003; Biswas and Tortajada 2010; Global Water Partnership 2000; OECD 2011). To increase governance, it is important to eliminate corruption and increase the participation of stakeholders in order to ensure a more effective and efficient water supply. However, Cambodia has been a country known for its high level of corruption, with a CPI score of 2.1, the 151st in the overall ranking³. Thus, it is even a more remarkable change for the Phnom Penh Water Supply to be an international example of water development for developing countries.

A. Definition and Types of Governance

Then what is governance? According to the United Nations Development Programme (2000), governance is termed as “the exercise of economic, political and administrative authority to a

³ Corruption Index CPI 2006 Regional Results: Asia Pacific, Transparency International, 2006.

mange a country's affairs at all levels... it comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences.” Although dependent on the economic, cultural and political norms of a country, the traditional actor of governance has been confined to the state giving governments the sole responsibility to create frameworks that mediate and incorporate different and diverse interests of stakeholders. In previous political science literature, governance was referred to how much the government was able to effectively enforce political decisions through the bureaucracy and government branches with a top down control (Tropp, 2007). Until the 1990s, the State has been primarily responsible for allocating resources, defining goals, setting priorities, and steering the society (Rodgers and Hall, 2003). However, at the beginning of the 21st century, government functions and influence have become limited and a proliferation of non-informal authorities such as the business sector, NGOs, civil society, United Nations (UN), World Bank (WB), and the Asian Development Bank (ADB) have begun to take the place of governments to influence and steer society. The need for a more collective action than the mere existence of the government is based on the democratic political behavior that the players of the government are ‘self-seeking,’ ‘opportunistic,’ and ‘single minded seekers of re-election’ and thus must be constrained in a either electoral, constitutional, legal or etc., method to prevent any possibility of exploitative and short term interests leading to corruption (Rodgers and Hall, 2003). The complexity and changing environment limit the state to solve the societal problems due to various financial, social and environmental constraints which trigger state to adapt and change its governance to ‘distributed governance (Kooiman, 1993),’ allowing more informal institutions to participate in the decision making process. Thus, “the State’s role of “directing” and “steering” society is being challenged by cohesive networks (civil society, private sector), and global networks (international organizations and non-governmental

organizations) with these same entities also supporting the State in its aims to develop society (Rodgers and Hall, 2003).” These new networks and entities promote different and diverse interests at urban, rural, international, national, and local levels. The new modern concept of governance now is viewed as a process of interaction through a collective action, to promote informal and formal relationships of between the private and public sectors, civil society and citizens. Governance is an evolving concept with a network of relationships between the public, private, civil society, and citizens sectors that enable us to analyze how these different entities look for networks and solutions to solve their affairs (Franks and Cleaver, 2007). Thus, “current discussions typically revolve around concepts such as dialogue, participation, negotiation, networking and partnership (Rodgers and Hall, 2003).” Therefore, governance today is a collective action of different participating actors regardless of their political, economic, and social status. For more information of traditional and the changed emphasis of the current new governance please look at the table below.

Table 2. Old and New Forms of Governance
 Source: Stockholm International Water Institute, Tropp 2007

Old Governance Emphasis	New Governance Emphasis
Emphasizes the government and bureaucracy	Civil society and markets The government and bureaucracy are still important entities but with reduced authority
Political power monopoly	Co-steering
Steering	Diversity of actors and power diffusion
Hierarchical control	Horizontally shared control
Enforcement of rules and regulations	Inter-organizational relations and coordination Decentralization/bottom up management
Control	Formal and informal institutions
Top-down management	Co-governing (distributed governance)
Formal Institutions	Network governance
Inter-governmental relations	Process of orientation
	Expansion of voluntary exchange, self-governance and market mechanism
	Dialogue and partnership
	Participation and Negotiation

B. Governance and Development

Depending on the how much effective and efficient governance a country has, the economic, social and environmental outcome of development varies; thus, governance is important for developing countries because poverty reduction is brought by “a stable and just social order founded on clear institutional rules and effective and equitable markets” (Rodgers and Hall, 2003). A strong causation from better governance to better development outcomes such as higher per capita incomes, lower infant mortality and higher literacy rates is well noted among researchers (Kaufmann et al., 1999). “Distributed governance (Kooiman, 1993)” among the public, private, and civil society is expected to bring more competition, more accountable public administrations and more transparent processes that address corruption (Rodgers and Hall, 2003). Thus, international institutions and multilateral donors are increasingly basing their loans and grants upon how much good and distributed governance is being seen in the recipient countries. For example, the Urban Water Supply Project initiated by the World Bank was to increase its governance and water supply of Phnom Penh. As one of its primary objectives, the World Bank (Project Completion Report, 2004) insisted water management reforms in an attempt to “create institutions that could maintain and expand service in an efficient, equitable, and sustainable manner, consistent with public demands.” Scholars, donors and policy makers have agreed the improvement of water governance is the key to solving the water crisis in development countries (Rodgers and Hall 2003; Biswas and Tortajada 2010; Global Water Partnership 2000; OECD 2011). To increase governance, it is important to eliminate corruption and increase the participation of actors in order to ensure a more effective and efficient water supply. However, Cambodia has been a country known for

its high level of corruption, with a CPI score of 2.1, the 151st in the overall ranking⁴. Thus, it is even a more remarkable change for the Phnom Penh Water Supply to be an international example of water development for developing countries.

C. Water Governance

For our research, water governance should not be confused with water management, although many institutions and scholars use it interchangeably. The former refers to “a process that promotes the coordinated development and management of water, land and related resources to maximize economic and social welfare in an equitable manner without comprising the sustainability of vital ecosystems and the environment” whereas the latter refers to the overall context where this management can be implemented (Jacobson et al., 2013).” In prior years, most discussions of the water sector surrounded the sustainable water management and integrated water resources management, which have not been successful in making a long-term impact on the water sector (Biswas and Tortajada, 2005). According to Biswas and Tortajada, the era of water management has come to an end by national water institutions and international organizations, as it was not able to implement this concept anywhere for macro- or meso-scale water policies and programme of projects (Biswas, 2004, 2008). The current trend of literature has been clearly standing out to replace the water management to water governance but there has been no clear definition and scope of water governance as it operates on different and many levels (Tortajada, 2010).

The mostly used and recognized definition is by the Global Water Partnership (2002), referring water governance as “the range of political, social, economic, and administrative systems that are in place to develop and manage water resources, and the delivery of water

⁴ Corruption Index CPI 2006 Regional Results: Asia Pacific, Transparency International, 2006.

services, at different levels of society” (Rodgers and Hall, 2003). Others such as the OECD define water governance as “the set of systems that control decision making with regard to water resources development and management.” The UNDP (Jacobson et al., 2013) defines it as “the principles such as equity and efficiency in water resource and service allocation and distribution, water administration based on catchments, the need for integrated water management approaches and the need to balance water use between socio-economic activities and ecosystems.” Wiek and Larson (2012) refer to “a systematic perspective, a governance focus on social actors, a transparent and accessible discourse on values and goals, and a comprehensive perspective on water sustainability.” Overall, water governance is concerned with “political, social and economic organizations and institutions (and their relationships), which are important for water development (Rodgers and Hall, 2003) and is important to “govern water wisely to ensure governance, so that the involvement of the public and the interests of all stakeholders are included in the management of water resources (The Hague Ministerial Declaration, 2000).” For our paper, we will use the definition provided by Tropp (2007), who refers to water governance as “evolution of formal and informal networks, partnerships, and joint-decision making processes including dialogue and negotiated outcomes as mechanisms for steering water governance.”

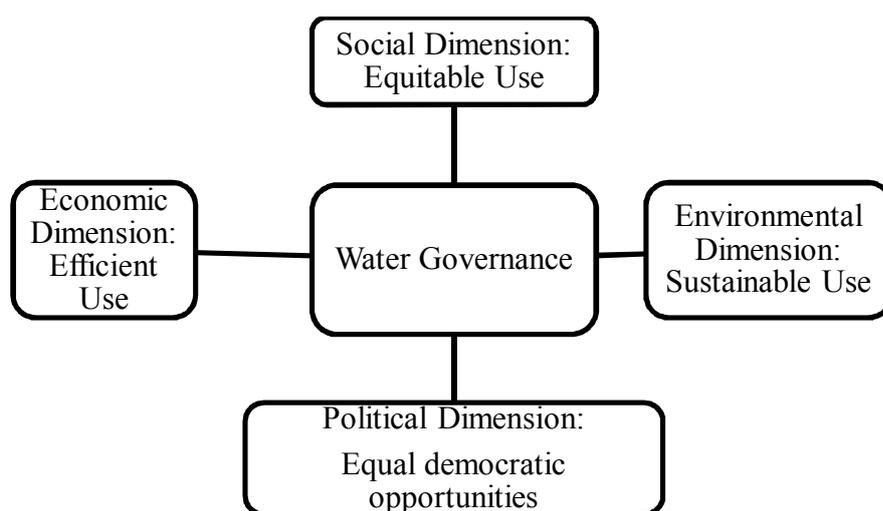
These principles and the importance of water governance are not well-adopted or understood in developing countries. Thus, global efforts through international conferences and increasing amounts of development aid with governance as conditionality is going to the water supply and sanitation sector. The 2000 Second Water Forum, 2001 Bonn International Conference on Freshwater, 2002 WSSD, 2005 13th Session on the Commission of Sustainable Development have all proved water governance to be a critical factor for achieving the water-related Millennium Development Goals. Global efforts have been shown through the establishment of international water alliances such as the Global Water Partnership (GWP),

World Water Council (WWC), Gender and Water Alliance (GWA), Freshwater Action Network (FAN), and etc. However, despite these efforts of increasing awareness, promoting advocacy, designing pilot programs, transferring knowledge and building capacity, the current commitments and results of improving water governance in the water sector is insufficient (Tropp, 2007).

Prior to analyzing water governance, understanding the four complex dimensions of the water sector is needed. There are four complex dimensions are as follows according to the UNDP (Tropp, 2006):

1. *Social dimension*, which focuses on equity of access to and use of water resources. This includes issues such as the equitable distribution of water resources and services among various social and economic groups and its effects on society
2. *Economic dimension*, which highlights efficiency in water allocation and use.
3. *Political dimension*, which focuses on providing stakeholders with equal rights and opportunities to take part in various decision making processes
4. *Environmental dimension*, which emphasizes sustainable use of water and related ecosystem services.

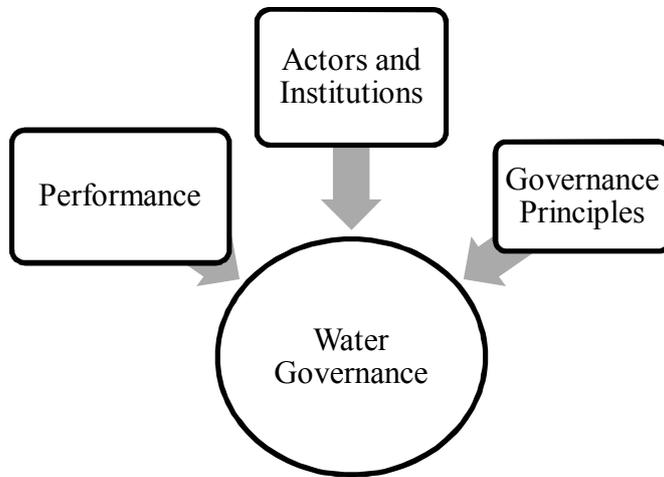
Figure 1. The Four Dimensions of Water Governance
Source: UNESCO, Tropp, H. 2006



D. Assessing Water Governance

As recent trends in tackling corruption and importance of good governance grow, the assessment of water governance has become a necessity for developing countries. This is because the decision-making authority is often distorted and monopoly is common in the water sector (Jacobson et al., 2013). The lack of transparency in decision-making process of the public and private sectors create a risk of corrupt practices and as a result, increased emphasis on strengthening capacity of citizen, civil society, and local government is advised. Currently, many countries are going through reforms to increase accountability and transparency of the water sector. However, the reform process has been slow due to many undermining factors such as the domination of specific interests of stakeholders (Jacobson et al., 2013). Therefore, many international organizations and water alliances are developing frameworks and schemes to “to assess the water governance to i) compare the state of water governance in different countries, ii) benchmark the performance of lower-level entities, iii) diagnose existing problems, iv) review and identify trends and potential gaps, and v) bridging the supply and demand of governance (Jacobson et al., 2013).” According to the *User’s Guide on Assessing Water Governance*, a collaboration of United Nations Development Programme, Water Governance Facility, Stockholm International Water Institute, and Water Integrity Network have created a framework to identify and evaluate the water governance. Of the three components, this paper will focus on the research on particular pillar- institutions and actors.

Figure 2. The Three Components of Governance Assessment
Source: United Nations Development Program, Oslo Governance Centre



E. Governance Failure

As research on governance grows, many international institutions have focused on what factors promote the failure of governance. World Bank (1992) notes the causes of poor governance is from the poor management in the economic, human and institutional development. It is said poverty and weak institutions are barriers to increasing governance performance; in particular, the World Bank puts high concentration of political power and corruption as “damaging” causes for poor development.

According to Global Water Partnership (2002), “poor governance leads to increased political and social risk, institutional failure and rigidity and a deterioration in the capacity to cope with shared problems...poor governance is a barrier to development and hurts the poor through both economic and non-economic channels, making them more vulnerable and unable to adapt to changes... therefore structural and institutional reforms are needed to turn poor governance into more effective governance, including measures such as accountability in the use of public funds, building capacity for better policy formulation, implementation,

and enforcement mechanisms... this includes a more inclusive process where civil society and private sector have clear roles to play with shared responsibilities on the basis of public private partnerships.”

Scholars Karen Bakker and Michelle Kooy (2008) note the failure of governance overlaps with the capability approach of Amartya Sen as it provides a meaning of why different individuals are able to “differentially mobilize specific commodities to achieve certain functionings.” Sen’s ‘capability set’ is useful for understanding governance failure as the individual’s ability to achieve desired functionings, in this case such as receiving adequate water supply without discrimination or having self-respect due to active participation in community decision making (Bakker and Kooy et al., 2008). This capability set gives evidence for exogenous factors to affect the capability set of individuals.

3. Cambodia and Phnom Penh Water Supply Authority Before 1993

PPWSA was established in 1959 and for the following thirty-five years, it had been providing 150,000 cubic meters a day with a supply network of 282 kilometers (Das, Chan, Visoth, et al., 2010). However, the political instability of the country had completely destroyed the water facilities as the Khmer Rouge regime eliminated skilled employees who were working at the facilities and distribution process. When the PPWSA was operational in 1979, the country and PPWSA was poverty stricken with only 45% of the original capacity producing 65,000 cubic meters per day (Das, Chan, Visoth, et al., 2010). Many of the reasons for this were lack of electricity, funds, qualified personnel, and the high level of corruption at the government level taking advantage of the poor (Das, Chan, Visoth, et al., 2010). The pressure of the piped water from the treatment plants reached only a few meters and had worsened as the public took control and made thousands of unauthorized and illegal connections (Chan,

2009). About 26,880 customers were registered with less than 40% paying the bills; in 1993, the city was serving less than 20% of the population with non-revenue water exceeding 70UD dollars with a total revenue covering about 50% of the operational expenditures (Chan, 2009). However, from 1993, a new director named Ek Sonn Chan had been appointed which transformed the PPWSA by “good governance” (Das, Chan, Visoth, et al., 2010).

The director had tackled corruption by increasing transparency of the water collecting and distribution process, investing in the staff by giving incentives and higher salaries than those of the other ministry workers, changing the distribution process targeting the poor, increased tariffs and making all users pay regardless of their political status and etc. Overall, the PPWSA had increased good governance to tackle corruption was by increasing transparency, accountability, responsiveness, effectiveness and efficiency, equality, participation, and inclusiveness and following the rule of law.

4. Decoding Phnom Penh Water Supply Authority’s Governance after 1993

A. Transparency

Before 1993, there was no performance and progress report on a regular basis. The new reform now requires the administrative council to review the results and priorities, which are then submitted to the director general (Das, Chan, Visoth, et al., 2010). An international and independent auditor known as Price Water Coopers (PWC) audits the financial accounts and procedures every year to check if any misused financial resources and the operating revenues. The financial reports are open to the public and are easily accessible through the PPWSA site.

B. Accountability

The department had no accountability measures prior to 1993. Currently, each department has its own planning and accountability process. Each department has the responsibility of drafting its own guides, monitoring and reporting system, and implementation process (Das, Chan, Visoth, et al., 2010). Those who are in charge of the implementation are directly accountable for their performance and this is reported to the director of the line. The head and members of the PPWSA Board conduct the overall inspection.

C. Responsiveness

To respond to the 30-50 complaints every day, the PPWSA established the NAVISON (Das, et al., 2010). This is a customer database, a survey launched to understand and research the people's water situation so they would be able to respond in a more efficient manner to the problems of the people. In addition, an awareness campaign was held for the PPWSA and the people to directly interact and increase awareness of the information of connection, non-payment bills, water tariffs, subsidies and the penalty system.

D. Effectiveness and Efficiency

Before 1993, there was no collected information of the customers. To increase the effectiveness and efficiency of the system, Ek Sonn Chan had updated the customer information, adopted a 100% metered policy and introduced incentives and penalties to the workers. The incentive policy had created a competition among the departments of PPWSA and had given strong motivations for the people to follow and comply with the new rules

(Nhean Tola, personal communication, April 30th, 2014). By 2008, Ek Sonn Chan had increased the salaries to 200 US dollars compared to the 20 US dollars wages they had been receiving in 1993. The salary is much higher than those other government officials in addition to the establishment of the retirement system for the employees, first of its kind in Cambodia.

The reduction of the water losses were also tackled efficiently as Ek Sonn Chan invested in investigating leakages of main pipes to reduce illegal connections. All deteriorated pipes and facilities were heavily invested by the JICA's funding.

E. Equality and Inclusiveness

“Making Everyone Pay” is the new motto of PPWSA. Before the reform, 72% of the water usage was not paid, this included politicians, army officers, government employees, and PPWSA member staffs (Das et al., 2010). Illegal connections were common and the fee amounted up to 1000 US dollars per connection. During the reform, Prime Minister Hun Sen had initiated the policy and encouraged everyone to pay water bills. This created uproar to the middle and upper class of society with strong rebellions and protests. As the customer information was collected, anyone who did not pay his or her tariff was cut off automatically.

F. Participation

PPWSA had not included any participation of the people prior to 1993, giving complete control of PPWSA officials to decision-making. However, with the renovation, the PPWSA encouraged the community participation before main pipelines were distributed. The officials informed and consulted with new communities to create short, medium and long-term

planning for the authority. In addition, the top down management was changed to a more horizontal management allowing the participation of staff and giving the lower workers more leverage and power over their own working environment.

G. Rule of Law

The PPWSA was a department of the Municipality of Phnom Penh and its jurisdiction was under the supervision of the Ministry of Interior (Das, Chan, Visoth, et al., 2010). The PPWSA was granted full financial autonomy in 1997 under the 1996 decree, Law on the General Status of Public Enterprises (No. 0696/13). According to the decree (Das, Chan, Visoth, et al., 2010):

- PPWSA must organize, manage, and operate all its activities independently in accordance with commercial business requirements (Article 4)
- PPWSA could have an independent salary and incentive package for its staff subject to approval by its Board of Directors (Article 101)
- The General Director has the authority to hire and dismiss staff (Article 14)
- The General Director must submit to the Board of Directors an annual plan each year before the 1st year of October each year, which must include the following (Article 20):
 - Investment and financing plans
 - Operational budget
 - Price of water and other services to ensure that total revenue can adequately cover its operational expenses
 - State financial report through subsidies to PPWSA in case of losses in its public services delivery

H. Finance

With the help of international donors, the PPWSA had introduced a three-step tariff increase over the period of seven years (Das, Chan, Visoth, et al., 2010). This tariff increase was initially proposed by the ADB in accordance with the first Socio-economic Development Plan (1996-2000). The tariff structure was differentiated in to three categories according to

the customer's water usage, domestic, commercial, and government. Please look at the table below.

Table 3. Changes in Water Tariffs in Phnom Penh
Source: Phnom Penh Water Supply

Until 1983:	Free water for every household
1984:	166 riels/ m ³ (domestic and commercial)
1993-June 1994:	166 riels/ m ³ (domestic) 515 riels/ m ³ (industrial)
July 1994- May 1997:	250 riels/ m ³ (domestic) 700 riels/ m ³ (industrial)
June 1997:	Block tariff rates were introduced. All connections were metered. Domestic tariffs (m ³ /month) 0-15: 300 riels 16-30: 620 riels 31-100: 940 riels >100: 1,260 riels Industrial tariff (m ³ /month) 0-100: 940 riels 101-200: 1,260 riels 201-500: 1,580 riels >500: 1,900 riels Governmental Institutions (m ³ /month) Flat rate: 940 riels
2001-Current:	Domestic tariffs (m ³ /month) 0-15: 550 riels 16-30: 770 riels 31-100: 1010 riels >100: 1,270 riels Industrial tariff (m ³ /month) 0-100: 950 riels 101-200: 1,150 riels 201-500: 1,350 riels >500: 1,450 riels Governmental Institutions (m ³ /month) Flat rate: 1,030 riels

III. ANALYTICAL FRAMEWORK

1. Rational Choice Institutionalism

Rational choice institutionalism (RCI) is one of the three main theories –rational choice, historical, sociological- under the new institutionalism theory, which stresses in to understanding the importance of institutions affecting the actors in the political landscape. According to Bell (2002), examining institutions matter because “they are seen as shaping and constraining political behavior and decision-making and even the perceptions and powers of political actors in a wide range of ways.” Institutions are defined as shown in the following table:

Table 4. Definition of Institutions

Scholars	Definition of Institution
Bell (2002)	‘established law, custom, and practice’
Levi (1990)	‘the most effective institutional arrangements incorporate a normative system of informal and formal internalized rules’
North (1990)	‘any form of constraint that human beings devise to shape action’
Hall (1986)	‘the formal rules and compliance procedures, and standard operating practices that structure relationship between the individuals in various in the polity and economy’
March and Olsen (1989)	‘collections of interrelated rules and routines that define appropriate actions in terms of relations between roles and situations. The process involves determining what the situation is, what role is being fulfilled, and what the obligation of that role in that situation is’
Shepsle (2005)	‘a script that names the <i>actors</i> , their respective <i>behavioral repertoires</i> (or strategies), the <i>sequence</i> in which the actors choose from them, the <i>information</i> they possess when they make their selection, and the <i>outcome</i> resulting from the combination of their actor choices’

Institutions are therefore, informal and formal ways that constrain, shape and influence the actions of actors. In rational choice institutionalism, there is an assumption that all actors are rational (Bell 2002, Shepsle 2005; North 1990). The motives of the actors are intrinsically selfish, attempting to maximize their self-interests (Bell, 2002) therefore behave “entirely

instrumentally (Hall and Taylor, 1996).” Constraints can be seen in the form of structured and non-structured, the former refers to party systems, rules of the electoral competition, government bureaucracies, constitutions, trade corporations, unions, and international organizations such as the United Nations, World Bank and etc., (Bell, 2002; Sheplse 2005); the latter refers to norms, coordination activity, cooperative arrangements, and collective action. (Sheplse, 2005).

In this paper, the definition of Elinor Ostrom’s institution will be used. Ostrom broadly defines institutions as the “prescriptions that humans use to organize all forms of repetitive and structured interactions including those with families, associations, governments at all scales” and the “individuals interacting within rule-structured situations face choices regarding the actions and strategies they take, leading to the consequences for themselves and for others (Ostrom, 2005).”

RCI has been a dominant theory in explaining the reasons and actions of why political individuals in a political setting. This has been widely adopted to understand the institutional mechanisms which examine how “principals can monitor and enforce compliance on their agents (Hall and Taylor, 1996).”

2. Institutional Analysis and Development Framework

This paper will use the most recent Institutional Analysis and Development Framework devised by Ostrom (2011). The overall framework and the internal framework of the action situation are shown in the figures below. A key part of the framework is the “identification of an action situation and resulting patterns of interactions and outcomes, and evaluating these outcomes (Ostrom, 2011).” Thus, this paper will focus on analyzing the action situation, interactions and evaluating the outcomes of those interactions. Despite the attempts of

scholars to differentiate the actors and the actor situation, Ostrom points it is not possible to distinguish the difference between the actors and the situation (Ostrom, 2011).

Ostrom defines action situation as the “social spaces where individuals interact, exchange goods and services, solve problems, dominate one another, or fight (among the many things that individuals do in action situations (Ostrom, 2011).” The actors in the framework refer to a “single individual or as a group functioning as a corporate actor (Ostrom, 2011). This thesis will conduct the institutional analysis based on the assumption that the actors have all information needed to make decisions.

Scholar E. Ostrom points out there are three possible problems- operational, policy decisions, and constitutional- that can be identified from the framework. The first problem deals with the operational tier where “actors interact in light of the incentives they have to generate outcomes directly in the world” whereas the policy problems refer to “decision makers repeatedly having to make policy decisions within the constraints of a set of collective choice of rules (Ostrom 2011).” The constitutional problem points out the problem of “where decisions are made about who is eligible to participate in the policy making and about the rules that will be used to undertake policymaking (Ostrom, 2011).”

Exogenous variables

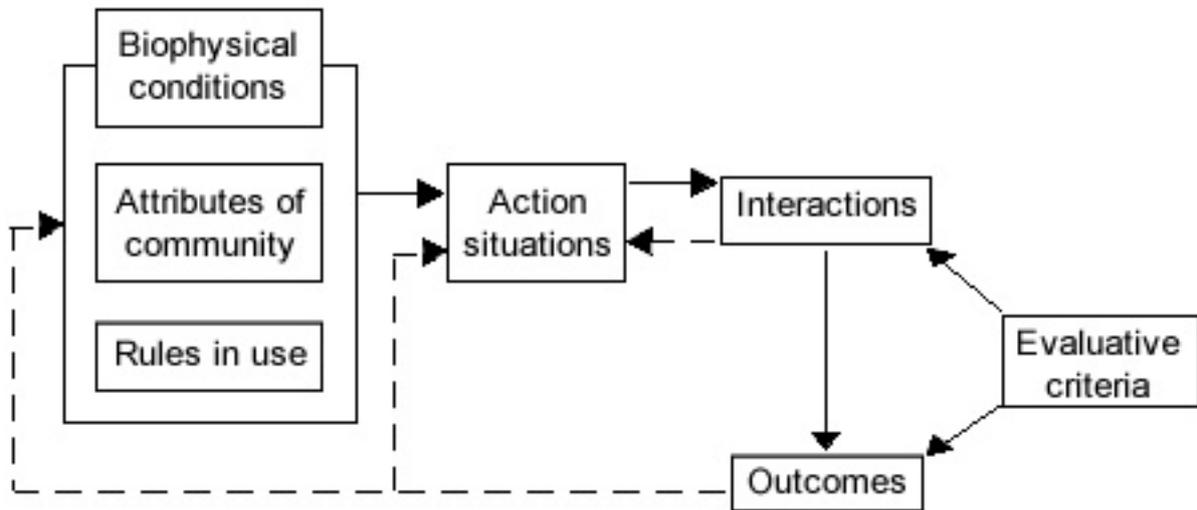


Figure 3. A Framework for Institutional Analysis
 Source: Adapted from E. Ostrom (2005, p.15)

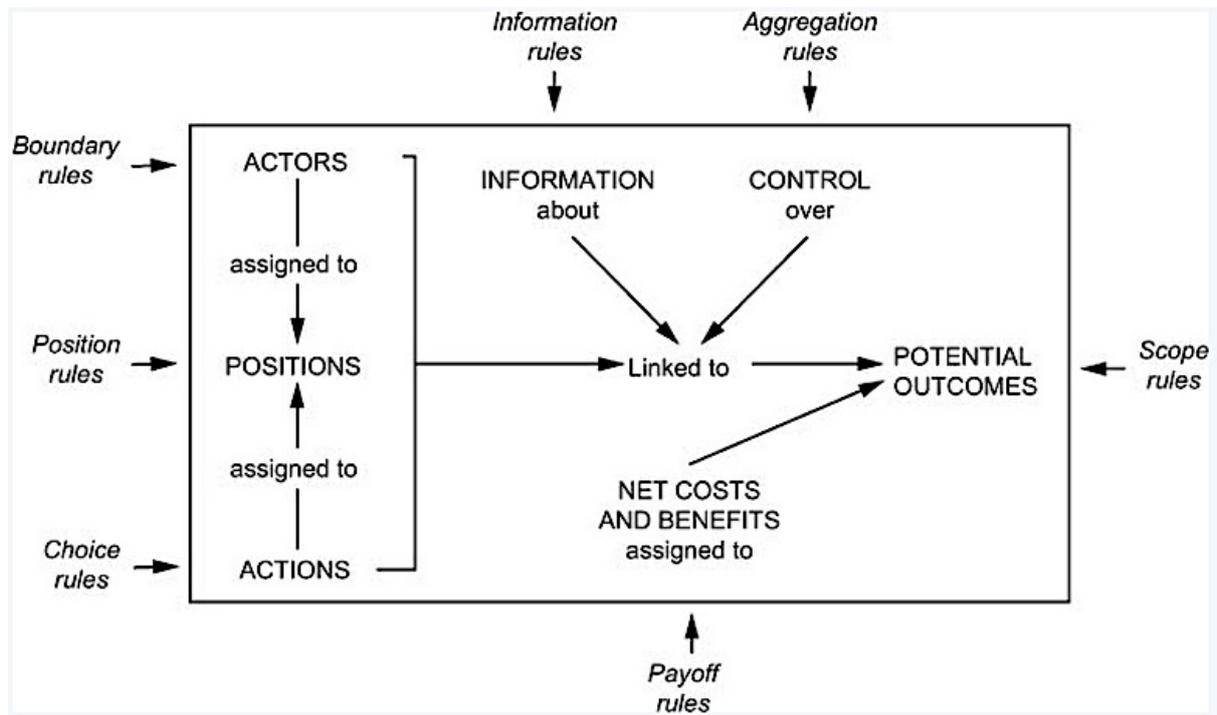


Figure 4. The Internal Structure of an Action Situation
 Source: Adapted from E. Ostrom (2005, pg.33)

In this paper, the main focus will be to identify the action situation and interaction, and evaluate the interaction findings. The analysis of the action situation will be (i) identifying the set of actors; (ii) the level of control each participants has over choice; (iii) the information available to participants about the structure of the action situation. The interactions of the actors will be analyzed based on the evidence drawn from stakeholder and household interviews. The evaluation of the interactions will be based on the criteria of whether the participants have decision-making power and whether their actions have a negative affect on the poor households to get water supply.

IV. CASE STUDY

1. Village Case A



Picture 1. Interview Site A

This commune is near the Sovanna Market in the middle of urban Phnom Penh with a population of 280 households. Only one household located in the middle of the commune is directly connected to the PPWSA water supply. This household belongs to the commune leader who earns about 5 US dollars per day for a household of six people. He has paid a connection fee of 500 US dollars without any subsidy from the PPWSA. The leader was not aware of the connection fee subsidy and has stated there was no local authority informing him of the subsidy application. The water fee directly connected from the PPWSA is 800 riels per cubic meter. With this water, he privately sells his water to other households in the community. Those that are able to pay the connection fee of 60 US dollars (excluding the materials needed for the actual connection) to the commune leader are allowed to connect from the commune leader's house. Those who are not able to pay the connection fee are able to buy a water container of 2L for 250 riels. The commune chief has experienced problems with pipe eruption and metering and has complained to the PPWSA multiple times with no solution or any promise for resolution.

Households that are able to connect water have a daily income of US 2.5 dollars for an average of 5 people in each household. They pay the commune chief 1 US dollar per cubic meter to the commune leader. These households have constantly complained to the leader of meter problems, as it tends to fluctuate from ten cubic meters to twenty cubic meters per month. This amounts up to 10-20 dollars per month for a household who earns around 50 US dollars per month. However, the commune leader has not checked the meters and threatens to cut off the water supplies. Households that do not have water pipe connection in their houses must buy the water from the commune chief for 250 riels per container. At an average, one household uses about 6 containers per day amounting up to 1500 riels for water everyday. The commune chief plans to increase the fee of containers to 500 riels per container and this is an increasing concern for many poor households in the neighborhood. One of the

households that buy containers from the commune chief had visited the PPWSA office and asked for direct connection. The household was rejected with no clear reason.

In 2002, a French organization had given connection subsidies for the poor to apply for PPWSA water pipe connections. During the process, the French organization had negotiated with only the commune chief and had entrusted him with all the money in a hope that he would allocate the money accordingly. Afterwards, when the organization had conducted an impact analysis, the organization had found out the money had not been distributed to the poor and was used by the commune chief. With this incident, the organization gathered the people and the commune chief informing of the corruption and gave the leader a warning letter. However, the commune chief ignored the warning letter and was not given any disincentives. The people had gathered and complained to the chief but was threatened that their water would be cut off and had been told the chief was ‘pro-Cambodian People’s Party.’ The people and the commune chief are not in good terms and the people are afraid of speaking out their problem. All of the interviewees stated “it doesn’t matter what problem you have, there is no use talking with or relying on the commune chief. He is not one of us.” With no luck and afraid of rejection, the people of this village still suffer from adequate water supply up to this day.

2. Village Case B



Picture 2. Interview Site B

This community resides near the Bassac River in a white building adjacent to a government building. This building was built before the Khmer Rouge by a famous architect but was abandoned after the following dictatorship. By the early 1990s, the people had returned to the city and have been occupying for the past 20 years. Currently, the building is run down, with no proper utilities (electricity, water supply, etc.) and the government has been planning to tear down the building to build roads and canals in accordance with the Phnom Penh Master Plan 2020. The building will be torn down as soon as all the residents accept to move out. However, most of the residents are not able to live a sustainable livelihood with the small compensation the government plans to give and even if the sum was high, the new settlement residence would be too far from the work place leading to increased transportation costs and time loss. As a result, most residents are hesitating to move. In 2000, all residents in low-

income slum areas were officially termed as “illegal,” “temporary,” and “archaist” residents (Fallavier, 2003) and are very cautious with any outside contact. Therefore, the community and local government officials are not in good terms so the environment of the community has become very tense. A security guard (elected by the people of the commune) patrols the community and alerts the people if any government related officials are seen in the area. Prior to conducting interviews, my translators and I had to explain the commune chief, security guard, and the residents that we were not affiliated with Cambodian Peoples Party nor the government and that we have no intention of using the obtain information for any political purposes.

According to the commune chief, the exact number of residents is not known; over 330 households reside in the building and about less than 90 households have direct water supply contract with the PPWSA. Many buy water from private vendors (mostly neighbors) or share a bill. No one has ever received any PPWSA connection subsidy and there are no national or international NGOs that assist this community. The commune chief explains the original private vendors who provided the water (before the PPWSA started to provide connections) were driven out as the Mayor asked the PPWSA to stop all private vendors and provide public water utilities. When the PPWSA started to provide connections, the right side of the building were not able to receive any connection from the PPWSA. According to the PPWSA, the right side is too close to the government building and therefore are not able to lay pipes underground. There has been no resolution for the residents who live on the right side; the private vendors are gone and they were left alone to solve this problem by themselves.

Households that have direct connection with the PPWSA mostly reside on the first floor. These people have a higher income compared to those living on the higher floors, as most have shops such as selling food and beauty salons on the ground floor. These directly connected households paid an average of 320 US dollars for the connection fee to the

PPWSA. Households living on the right side of higher floors that cannot pay the PPWSA connection fee have no other option but to pay connection fees to the house owners on the first floor so they can connect small pipes to their households. Since there is only one meter at the first floor for the original owner and all the connected households, the house owners at the ground floor have complete control over the water fees of each household. This has caused confusion and problems for many residents. For example, one interviewee exclaimed she pays over 3,000 for per cubic meter while other connected households pay 2500 riels per cubic meter and when she complained to the owner, she was threatened with a gun and was told to never bring up any problems again. She was not able to receive any help from the commune chief, as the commune leader was close with the ground floor houses.

One interviewee who was aware of PPWSA's connection subsidy stated his house was not able to receive a 'poor identification' from the commune chief and therefore, was not able to prove his state of poverty. He had no option but to buy water from the first floor and this had cost him US 30 dollars for connection fee and 4.5 US dollars monthly for water fee. This household has a family of two with an average income of 4.5 US dollars per day. A household living on the left side of the upper floors was able to directly connect to the PPWSA water supply with a connection fee of US 200 dollars with no subsidy. However, when he was not able to pay his water bill of 2500 riels and was asked to pay a fine of 60,000 riels in the following month. The household believed this was unfair but had not brought this to the commune chief or the PPWSA authority because he expected there would be no resolution. Even those living on the ground floors that have direct connection have problems with water supply. Many have noticed meter problems and have asked the PPWSA to come and check; according to the owners, PPWSA staff did not come to inspect the problem and feels the household is being "cheated" by the officials.

When asked whether the households were willing to apply for PPWSA subsidy, all of the interviewees showed negative signs that they would be excluded from the benefits due to i) the commune chief would issue a poverty card for their households ii) the government would not be willing to provide any benefits for illegal residents and iii) the PPWSA does not directly solve their problems but through the commune chief when issues arise. In general, many households feel there is no need to complain, as their issues were and are never heard.

3. Village Case C



Picture 3. Interview Site C

The third village is a cluster of many communities living on the railroads of Phnom Penh. The railway was built during the French Indochina era but was deteriorated during the civil war. Like case B, the people of the community have been living on the railway for 15 years but currently face evacuation problems as the government is trying to rehabilitate the railway with funds from the Asian Development Bank. Therefore, these communes are also having

problems with the government for resettlement issues. There are four communes residing on the railway and each of the commune chiefs and security guards have short range radios (walkie-talkies) to communicate with each other in regards to any unwanted political strikes and movements.

According to the households who have asked the PPWSA for direct connections, the reply was clear: the PPWSA is not willing to have direct connections because the investment to lay main pipes and the middle pipe lines is larger than the actual profits they will receive from these poor, low-income households. Houses that relatively near the main pipe lines are able to connect to the PPWSA but would need the confirmation from the commune chief that the household was living in the area more than five years and recognition that the household is too poor to apply for the connection fee. However, the village chief did not allow this and the people had no choice but to buy from private vendors, which sell the water at a higher rate than the public water tariff of 550 Riel per cubic meter.

Unless the household is a private vendor, most normal households buy water at tariff rate of 2500 Riel per cubic meter. A former chief of the commune has informed this situation to the PPWSA. And despite constant applications for connections to the PPWSA, each complaint was turned down with a threat to the former commune chief that he will be imprisoned if there is another complaint. It is said, the village leader is pro-government and does not come to the communes to interact with the household unless he has to collect money from the people. The current village leader is does not live in the neighborhood with the other residents. According to the former chief, the current chief had applied to the PPWSA connections and only his relatives and friends were recognized as poor and received connections with subsidy. There is a village meeting that requires all commune chiefs to come but this former commune chief has neither been called nor was allowed to join the meeting when he contacted the village leader.

Private vendors living in the commune were interviewed. The private vendors in this town are well off but are not in good terms with the people. One household was on a vast amount of land, owning a coffee/bar shop, tennis court, and a tennis pool. Poor households that buy from this rich house explained the water was expensive and the owner wanted to increase the fees because the minimum wage of factory workers has increased. However, when the rich house was interviewed, the owner denied of selling water to any other household.

One poor household was able to pay for the connection fee by borrowing money from neighbors. This household has constant problems with the meter and sometimes the water does not come out for two-three days. The household had repeatedly told the PPWSA officials but instead of solving the issue, the PPWSA had cut water off. This household has never spoken their problems out loud again.

V. ANALYSIS

1. Analysis on Action Situation

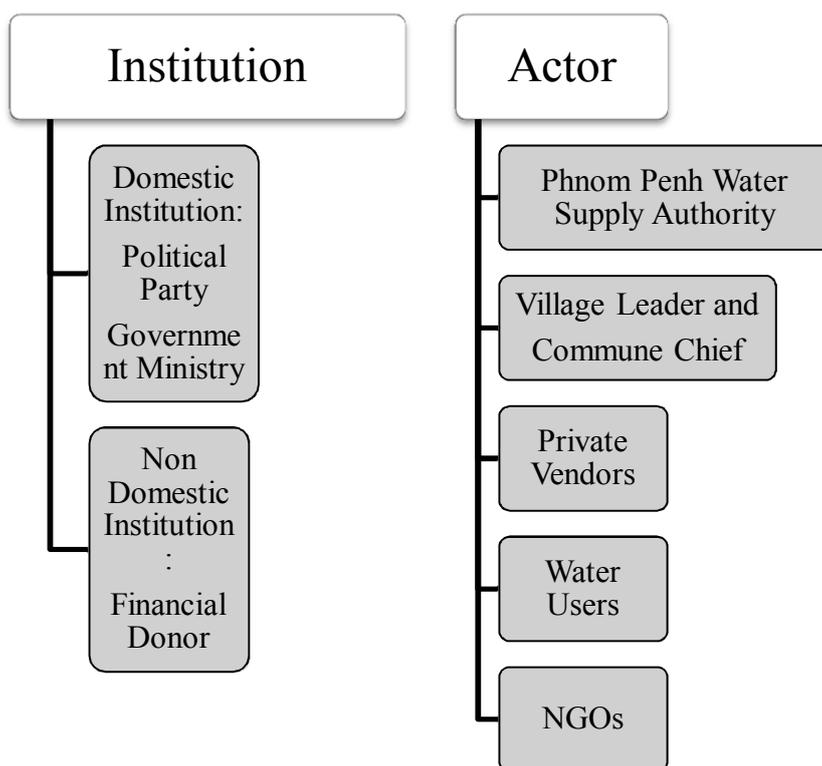
A. Set of Actors

Only those that have direct interests and stakes with the drinking water (piped water) of Phnom Penh are listed in the table below. Water related stakeholders such as the Ministry of Rural Development and Ministry of Water Resource and Meteorology are not written down as they engage in the irrigation, flooding, sewage systems and etc., which are not relevant with the piped (drinking) water of Phnom Penh. This actor and institution mapping is a crucial stage in identifying the institutions and actors before analyzing the structural relationships in between.

In accordance with definition of institutions by Sheplse (2005) and in the case of Phnom Penh, there are two different types of institutions: domestic and non-domestic institutions.

Domestic institutions refer to the government bureaus and the Cambodia People’s Party. The non-domestic institutions refer to the international financial organizations such as the World Bank, Asian Development Bank, French Development Agency and etc. Actors are the Phnom Penh Water Authority, village leader/commune chief, private vendors, and water users. The Royal Government of Cambodia and the Cambodia’s People Party are not directly in control of the decision making process but both entities heavily “influence” other actors in a certain way.

Figure 5. List of Institutions and Actors

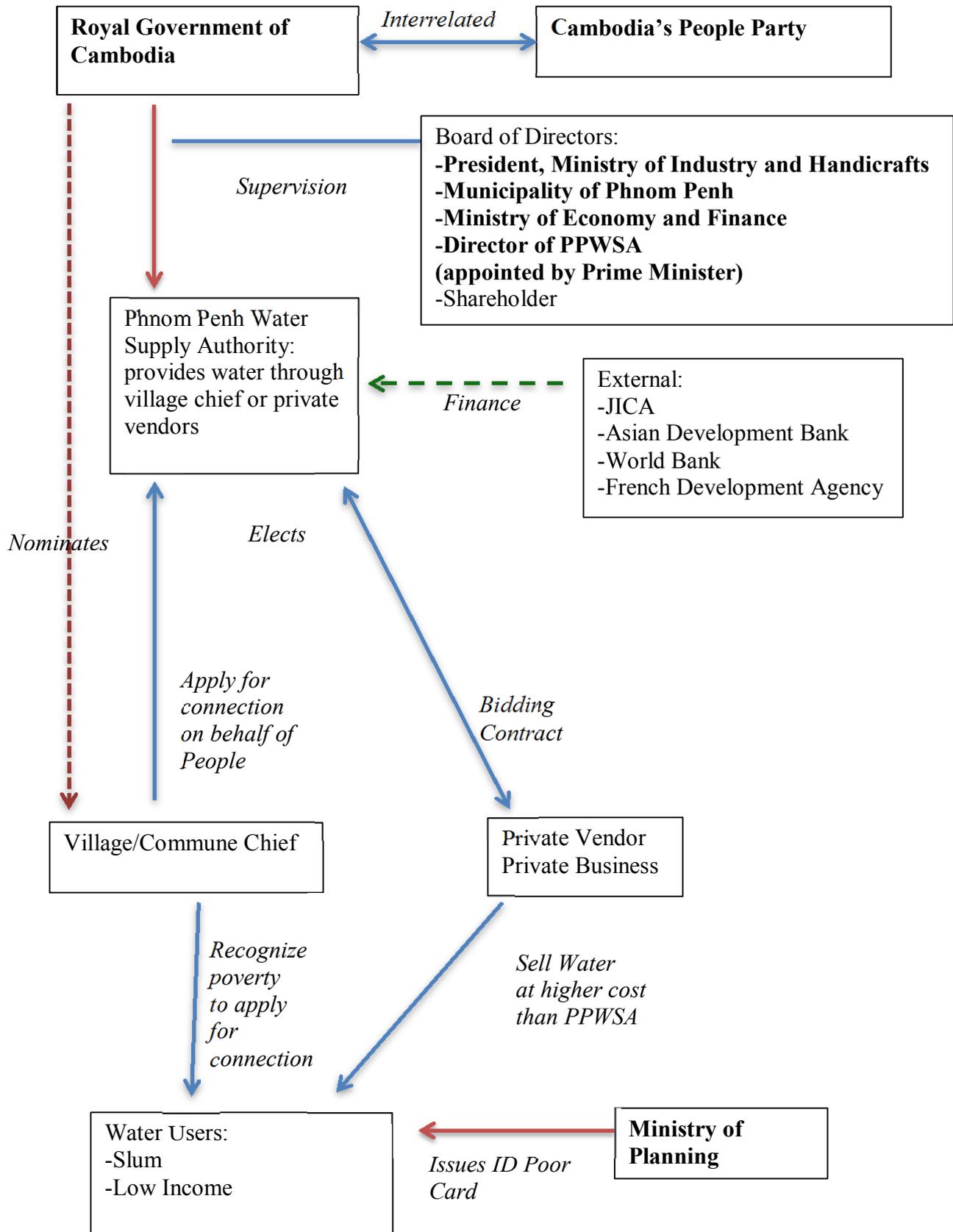


The diagram below is a picture showing a more specific list of all the institutions and actors in accordance to their political hierarchy. The red lines show the influence of the governance on the affiliated actors. As we can see, the government influence is spread across the decision making of water supply which heavily affects the distribution process. Of the institutions and

actors, the paper will conduct an interaction analysis that shows a direct influence on the domestic and non-domestic institution over the actors. Among the two institutions and five actors, structural relationship analysis will be conducted between (i) domestic institution and PPWSA; (ii) domestic institution and the village leader/ commune chief; (iii) domestic institution and the water users; (iv) non-domestic institution and the PPWSA; (v) the non-domestic institution and the village chief. Interaction analysis between the institution and the NGOs and private vendors were omitted as institution do not highly affected the actors. Although the private vendors do have intrinsically self-interests, these two actors' actions are shaped and affected by another superior actor, PPWSA. NGOs have been specifically omitted because they are not viewed as having an intrinsically selfish motive and behavior.

The private vendors and NGOs are however analyzed in the third section of outcome analysis. This is because the NGOs and the private vendors' actions are highly affected by the interactions of the actors. In other words, the NGOs and private vendors' actions are constrained and affect the decision-making process which leads to prevention of water supply for the urban poor.

Figure 6. Institution and Actor Hierarchy



B. Level of Control

In this paper, level of control has two meanings. The first level of control refers to how much leverage each of the actors have over its own decision making; in other words, this refers to how much they are affected from other actors. The second level of control refers to how much leverage or control each actor has in terms of influencing other actors.

In particular, PPWSA's level of control refers to how much control does PPWSA have to make its own policies and how much control does PPWSA have in influencing the other actors such as biddings with private vendors. In the case of private vendors, the level of control refers to how much leverage the private vendors have in (i) choosing their own water prices, customers and etc.,; and (ii) how much influence does it have in preventing others from having their own control over choices. The level of control of the village leader and commune chief refers to whether it is highly affected by other actors such as the PPWSA or political parties. The latter level of control refers to the amount of power it has over its own free choices such as administering the households. The level of control of NGOs refer to (i) how much power and freedom it has in their own actions such as monitoring and evaluating; the latter refers to (ii) how much leverage the organizations have in influencing its decision making. The level of control in terms of water users are the following; (i) how much freedom does it have when it comes to applying for water connections and government subsidy; and (ii) how much power or leverage it has when the households voice out their problems (local empowerment). And lastly, the level of control for external donors refer to (i) how much leverage it has over its own decision-making and (ii) how much power does it have in influencing those decisions such as pushing the PPWSA to abide by transparent and accountable monitoring measures.

Reasons:

- PPWSA: The PPWSA cannot make decisions that go against the Board of Directors.
- Private Vendor: The Private Vendors must be selected by the PPWSA in order to sell water. However this is not monitored nor evaluated.
- Village Leader/ Commune Chief: The leaders and chief cannot go against the rules and norms of the political party.
- NGOS: NGOS are not able to freely decide their own decisions if those go against the political party.
- Water Users: All decisions to have water supply are constrained by other actors
- External Donors: Donors do not have enough leverage (conditionality is not working anymore; further explained throughout the paper)

Table 5. Level of Control

Actors/ Level of Control	PPWSA	Private Vendor	Village Leader Commune Chief	NGOs	Water Users	External Donors
Over own decision making	LOW	LOW	LOW	LOW	VERY LOW	HIGH
Over Influencing other Actors	HIGH	HIGH	HIGH	HIGH to certain actors	VERY LOW	HIGH to certain actors

C. Availability of Information to Actors

The information available to the participants about the structure of the action situation is as follows:

Table 6. Availability of Information

Actors	Availability of Information
PPWSA	HIGH
Private Vendor	SELECTIVE
Village Leader Commune Chief	SELECTIVE
NGOs	SELECTIVE
Water Users	VERY LOW
External Donors	SELECTIVE

The availability of the information is high only to the PPWSA actor as it is the sole authority which drafts and implements all water related policies. The water user's availability of the information is the lowest because the users are not informed, nor do they have the power to be informed. The others – private vendors, village leaders and commune chief, NGOs, and external donors- have a selective availability of the information. This is due to the PPWSA's closed information sessions and its lack of information sharing to other actors. For example, the PPWSA does not inform any other actors when there is a change of water policy, nor does it have any regular information sessions with the public or other actors so all participating actors are informed (private communication with PPWSA, April 25th, 2014).

2. Analysis on Interaction

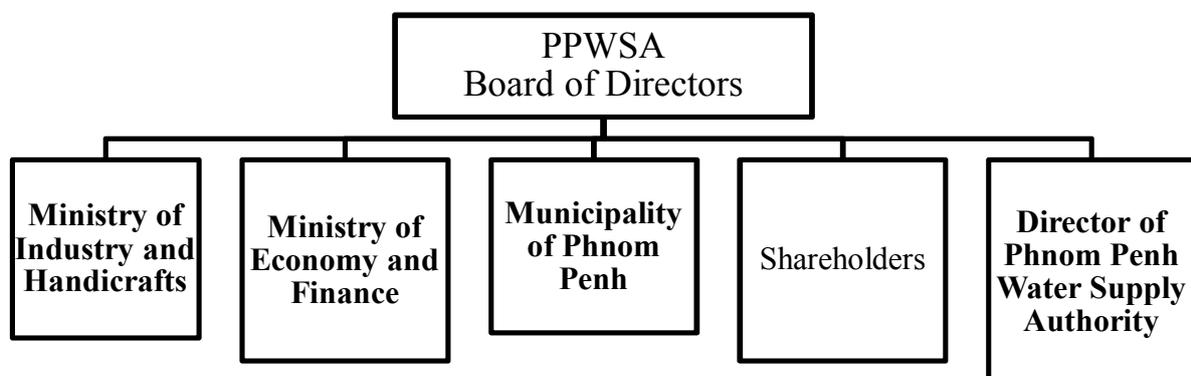
A. Domestic Institution and PPWSA

Prior to 1993, the PPWSA was under the jurisdiction of the Ministry of Interior and Municipality of Phnom Penh. In 1993, the government was experiencing fiscal debts and could no longer finance the PPWSA (interview with donor, personal communication, April, 2014); during this time, the Socio-economic Development Plan (1996-2000) was being drafted and the new director Ek Sonn Chan had pushed the government to increase the water utilities to become more self-sustaining commercial entities. The Government was able to declare autonomy on the Law on the General Status of Public Enterprises and this provided the first legal framework for operation, management, and supervision for all commercial entities (Das, Chan, Visoth, et al., 2010). With the autonomy, the government had no legal jurisdiction over the PPWSA and this had hoped for more freedom in its decision-making and policies for PPWSA. From 1996, the PPWSA were able to create their own policies, hire and dismiss their own workers, and have direct contracts with the external financial assisting

institutions. Superficially, it looked as if the actor (PPWSA) was able to pursue its own self-interest without any constrain or intervention from the domestic institution. However, in reality, the government jurisdiction did not disappear. The government has been “supervising” the PPWSA in the board of directors. Please look at the diagram below. Out of the five members of the Board of Directors, there are four government related personnel: the Ministry of Industry and Handicrafts, Ministry of Economy and Finance, Municipality of Phnom Penh and the Director of Phnom Penh Water Supply Authority. Director General of PPWSA is nominated by the ministries and appointed by the Prime Minister; although the average term for the Director General is three years, he/she can be reappointed for a non-limited number of additional terms (Das, Chan, Visoth, et al., 2010).

Therefore, the PPWSA will not go against the board of members, as they are the core management authorities. It is highly unlikely for the PPWSA to make policies and decisions that are anti-government. In this relationship, the domestic institution constrains the PPWSA’s preferences and behaviors through this board of directors by making the actor have pro-government preferences and behave accordingly.

Figure 7. Boards of Director, Phnom Penh Water Supply Authority



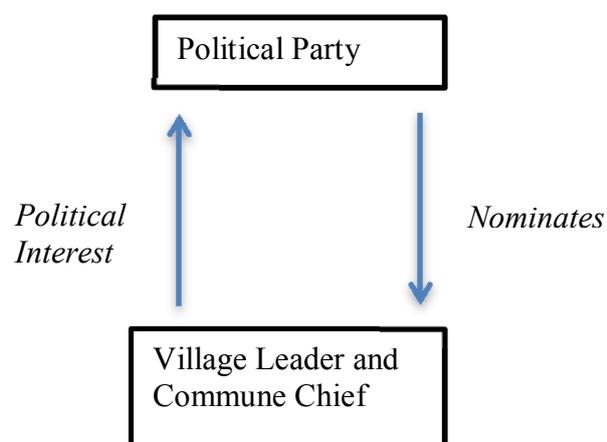
B. Domestic Institution and Village Leader/Commune Chief

Each village and commune have their own chiefs and leaders who are in charge of the overall protection and well-being of their areas. These leaders act as a mediator and facilitator for the households to have certain problems or concerns. One of the main roles of the leader and chief in the water sector is the authority and responsibility to acknowledge the households' poverty and financial capability so households are able to receive certain benefits and discounts from the government. In this case, the leader and chief have been given the authority from the PPWSA to check the households within the given jurisdiction and examine who are eligible to receive subsidy for water connection. This is a well-devised system as this prevents the corruption of PPWSA; however, this situation creates another set of problems. First of all, despite the elections conducted by the households, the local leaders and chiefs are initially nominated by the Cambodia People's Party. This means the leaders and chiefs have a political interest, as they need to be nominated by the political party. This entails their self-interests are more pro-government. Second, the government and people relationship have worsened after the announcement of Master Plan of Phnom Penh 2020. This master plan promotes a more economically, socially and environmentally friendly Phnom Penh through clearing out the poor neighborhoods to build new infrastructure. Therefore, most of the poor neighborhoods are against this plan and thus, been having demonstrations and riots to protect their own houses. In other words, because the leaders and chiefs are pro-government, they are also advocates of the Phnom Penh Master Plan. This has led to problems of distrust between the leaders and the households. Thirdly, the PPWSA cannot have main pipe installations in the poor neighborhoods because the rate of return from the poor is not enough to cover the main pipe installations and water bill collectors' salary. As the PPWSA uses a block water tariff, the revenues will very low as poor households tend to use a very small amount of water.

Even if the poor are willing to pay off the transaction costs, this is still problematic because most of the poor neighborhoods have been chosen as 'to be evicted areas' for the Phnom Penh Master Plan. This would mean the PPWSA would have to construct main pipes and would also have to collect them when the Master Plan starts within the next few years. Lastly, because the leader has the authority to evaluate the poverty of households, there has been a high rate of corruption. The leaders and chiefs have been using their authority to for their own self-interests. As we can see form the cases above, leaders and commune chiefs have abusing this power to issue out documents for their own relatives and friends. These relatives and close friends are able to receive the acknowledgement of poverty from the leader and chief who are then allowed to apply for the subsidy of the water connection.

As a result, this shows how the domestic institution shapes the preferences of the actors through the nomination of village leaders and commune chiefs. The actor is intrinsically selfish and maximizes its self-interest.

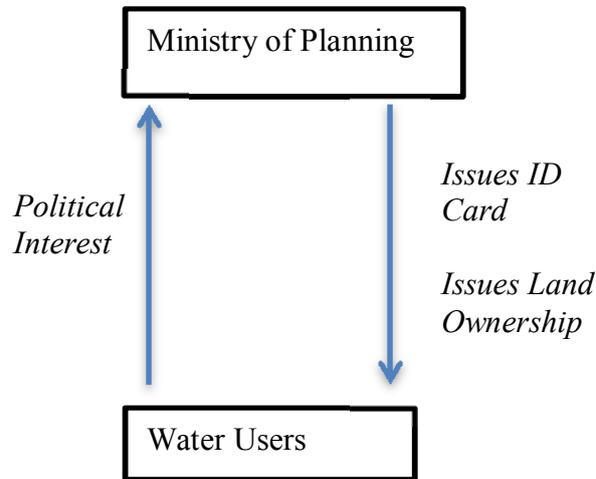
Figure 8. Domestic Institution and Village Leader/ Commune Chief



C. Domestic Institution and Water Users

The water users must have a valid legal land ownership and an ID Poor Card issued by the Ministry of Planning. The Ministry of Planning issues this residential status and is one of the most controversial issues, as government ministries and Prime Minister do not recognize the people of the slum areas as legal residents of Phnom Penh. Without land ownership and legal residency, the village owner must recognize the applicant's land tenure, proving that the household has been living on a specific area for more than five years. To apply for PPWSA connection subsidies, the household must be evaluated as poor through an "ID Poor Card" issued by the Ministry of Planning. The "ID Poor Card" is a data sheet confirming the poverty of a household, based on information collected by the village chief. This ID Poor Card is not given to people who do not have eligible residential status in the city and therefore most residents in the slum areas are not eligible to apply for the card. As a result, the water users have no option but to take actions such as illegal connections or buying from the private vendors at a price ten times more than the PPWSA water tariff. By law, water connection from the water pipes to the households without notifying and paying the authorities is prohibited by law. However, the because of the institution's regulations and policies such as the ID Poor Card and land ownership, the institution shape and influence the preferences of the actors and further promote the selfish behaviors of the actors. This goes against the rational choice institutionalism theory in that the institutions regulate and constrain the selfish behavior of the actors to promote the betterment of society. In fact, in the case of the domestic institution and the water user relationship, it is the exact opposite. The institutions that intend to regulate the actor behavior backfires and creates this setting.

Figure 9. Domestic Institutions and Water Users



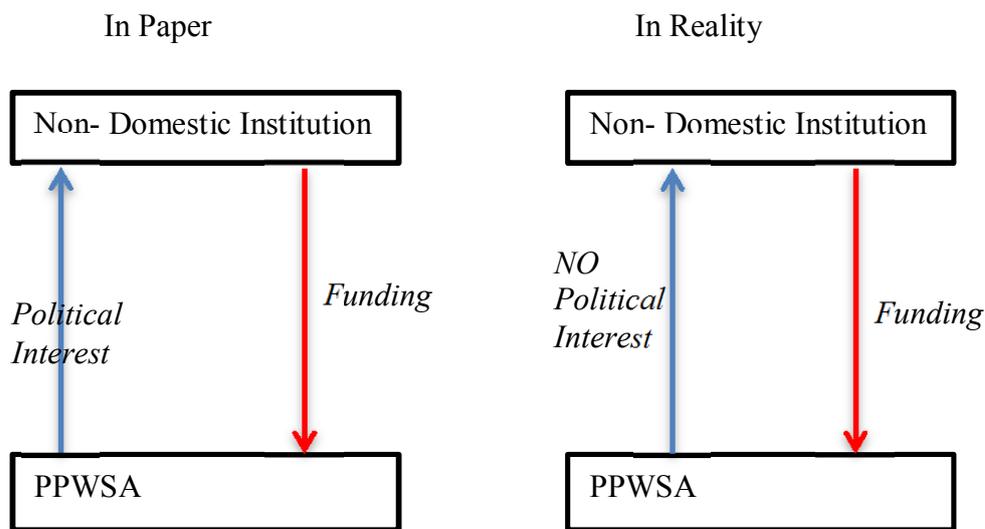
D. Non-Domestic Institution and the PPWSA

In most developing countries, the financial institutions' leverage to the recipients is large which make it possible to attach conditions. In other words, the institutions constraint on actors' selfish behaviors is possible to promote betterment of society. For example, in 1993, the Phnom Penh Water Supply Authority accepted to comply with the standard of procedures in 1993 to receive the financial aid for PPWSA reform. The PPWSA did not have a choice but to accept the compliances. However, as the PPWSA is becoming more financially independent in addition to the increasing donors, the PPWSA is not complying with the regulations of the financial institutions. Interviewers explained incidents of the government rejecting the external banks and bilateral donors' offer to re-engage in PPWSA funding if the prior corruption findings were publicly apologized and resolved. For example, an interviewer notes, "The ODA from China has no conditions whereas most Banks and bilateral donors have good governance as its main conditionality. The government therefore, prefers to

receive assistance from China because the government would have more freedom to allocate the money without much external intervention.”

In this case, the non-domestic institutions are losing their leverage in constraining the actors’ preferences and behaviors. The actors’ selfish interests cannot be regulated and constrained; the actors have no reason to comply and be constrained by the non-domestic institution because their disincentives – to cut financial assistance- is not a powerful tool anymore. In a nutshell, this relationship goes against the rational choice institutionalism; despite the existence of institutions, they cannot constrain the selfish actor preferences and behavior.

Figure 10. Non-Domestic Institution and PPWSA

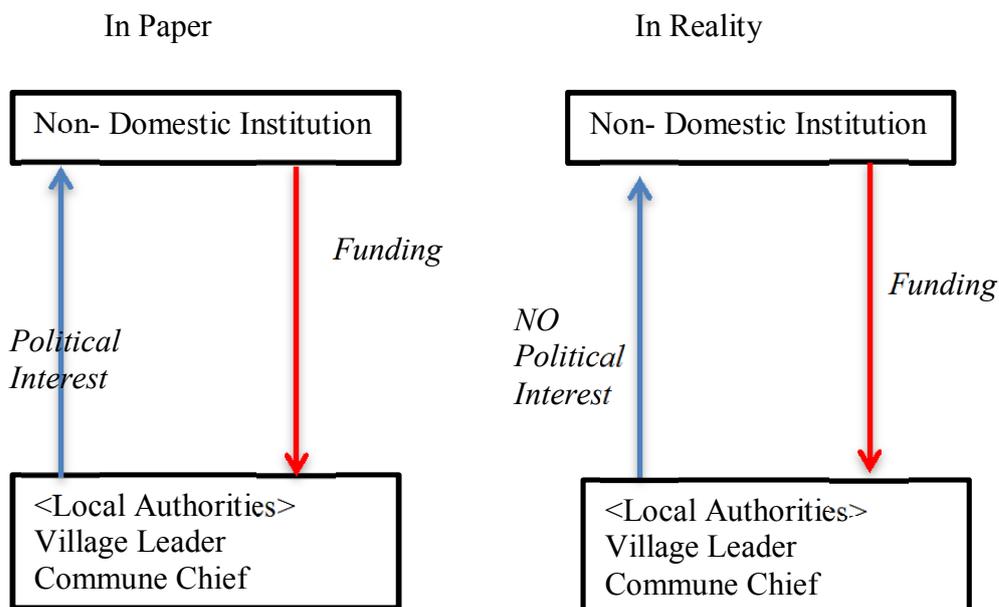


E. Non-Domestic Institution and the Village Leader/Commune Chief

The relationship of financial institutions and the village leader/commune chief is similar to the one with the PPWSA. The village leader and commune chiefs have intrinsically selfish

interests. The influence by non-domestic institutions shaping the actors are less compared to those by the domestic institutions because the actor (village leader and commune chief) are not directly liable and accountable. In other words, because the local authorities are nominated by the domestic institutions (government and political party), the preferences of the actors are directly influenced by the domestic institution. However, the non-domestic institutions cannot shape and influence the preferences and behavior of the village leaders because there are no disincentives.

Figure 11. Non- Domestic Institution and Village Leader/ Commune Chief



F. Private Vendors and NGOs

For private vendors and NGOs, the analyses on the structural relationship with the institutions have been omitted. From the fieldwork, the private vendors in the three villages' preferences and behavior is neither influenced nor constrained by the domestic and non-domestic institutions. Instead, these vendors are directly influenced by another superior actor, the PPWSA. The PPWSA has a closed bidding process of choosing the private vendors. It has control in choosing which private vendors will be serving the public at what price. It is however, interesting to note that the absence of a monitoring and evaluation system, the PPWSA cannot track or monitor the private vendors' actions. In addition, even if the private vendors do sell the water price at a higher level than the tariff suggested by the PPWSA, there is no disincentives for the vendors. Therefore, the PPWSA may influence and shape the actions and behavior of the private vendors, but is not strong enough to conclude their preferences and actions are constrained.

In the case of NGOs, the nature of NGO characteristics do not comply with the rational choice institutionalism and therefore was omitted in this research. The assumption of selfish and self-centered interests do not apply to the NGOs objectives and thus, cannot be examined whether their selfish behaviors were shaped and influenced by the institutions.

However, in the course of field studies, there was an interesting finding. Out of the eight communities, communities who had NGOs have not experienced many problems of PPWSA and water connection. In communities that have NGOs, the people understood the (i) initiatives of NGOs; (ii) and what NGOs could provide. To be specific, households that experienced water related problems went to the NGOs rather than the community leader for assistance. The NGOs would act as mediators and facilitators among the households and the institutions. They would be able to assist the problems and communicate with leverage. For

example, when a household had expressed its concern about the metering problems, the NGOs would notify the PPWSA on behalf of the people. The PPWSA would then come to the village and the problems would be fixed within a couple of days. On the other hand, for those communities and villages that do not have NGOs, when people were asked if they had seek any assistance from NGOs, most of the households did not understand what NGOs were and how they would be able to assist them. There is a sharp contrast in how the peoples' knowledge and usage of NGOs.

3. Analysis on the Outcomes

A. Transparency

The financial information of the PPWSA is open to the public through the official Internet site in the form of a financial audit statement provided by the PWC. This audit is prepared every four times per year and is uploaded timely. Apart from financial statements, most governance process and negotiation process is not easily accessible. For example, the recruitment, monitoring and evaluation of staff are not open to the public. The Director General has the sole authority to recruit and dismiss employees. The recruitment process is not transparent to the public and thus, is hard for a third party to access the assessing criteria for recruitment. The monitoring and evaluation process of the PPWSA staff are conducted only by their managing direct superior. This internal evaluation of the administration process is closed and thus hard for other external stakeholders to monitor the staff performance.

Contract bidding and licensing with the private vendors in addition to the management of the tariff setting are not public. There is no assessment of the bidding process, nor is there a monitoring and evaluation process for the contracts. The entire bidding process of private vendors is closed and thus, is hard to trust. The contracts are highly vulnerable to corruption,

and this has been a reason for project termination for an external donor in the past. One interviewer from the original donors in 1993 has noted,

“In 2005, the corruption of PPWSA with the private vendors were getting out of control. Our institution had cut off all assistance to the PPWSA. The project funding and the institution’s department regulating the funding were all terminated and dissolved. Since this incident, there has been no projects or funding for the PPWSA from our side. ” - Interview from an external donor.

Moreover, policy changes of the PPWSA including water block tariff changes are only shared within the PPWSA and not informed to the public nor uploaded on the Internet. PPWSA has information sessions consisting of much useful information such as application for connection subsidies, learning to calculate the metering and how invoices are read. However this information session is only provided to the newly formed communities of Phnom Penh (PPWSA, personal communication, April 24th 2014). Therefore, most people living in the low income and slum areas who lived since 1990s are exempted from this benefit. Even if these people are aware of the technical system, the information session does not inform the public of its policies that may be used against them. One interviewer from a donor has exclaimed,

“PPWSA has a policy which allows people to apply for compensation when their livelihoods are negatively affected by PPWSA’s performance. However, the PPWSA has been smart enough to not receive any complaints from this criteria.” –Interview from an external donor

B. Accountability

According to the UNDP tool set, horizontal and social accountability is the most relevant for assessing accountability in the water sector (Jacobson et al., 2013). The horizontal

accountability refers to the “mechanisms of internal oversight and checks and balances within an institution (internal control) or oversight and checks and balances of public institutions” whereas the latter refers to the “actions taken by people, the media, and civil society organizations to hold states and decision makers to account (Jacobson et al., 2013).” Compared to the accountability prior to 1993, the PPWSA has heavily increased its horizontal accountability. The PPWSA has a relevantly high horizontal accountability compared to the other institutions of Cambodia. Each department is independent and is directly accountable for all outputs from the department. The PWC oversees the fiscal management of PPWSA and evaluates its financial compliances with the government. However, the PPWSA lacks a monitoring and evaluation process for the performance and services provided. PPWSA does not have any external assessments of staff performance, water supply and sanitation. Each staff is internally monitored and evaluated by the superior who works with the staff and therefore, the performance assessment is not reliable. The international literature highly praises that the PPWSA has shared its internal performance evaluation with the Southeast Asian Water Utility Network for benchmarking purposes. However, there is no PPWSA evaluation information at the Network site, and PPWSA is no longer a member of the organization. Overall, the PPWSA lacks external auditing institutions (performance and management), oversighting bodies such as anti-corruption agencies, public prosecutors and consumer protection agencies. In addition, there is no water related organizations to ensure the interests and the needs of the people over the distribution of water. Thus, the horizontal accountability may have increased in terms of finance, but is not sufficient in terms of service performance.

The social accountability of the PPWSA is low and has not evolved greatly since 1993. This is particularly seen in the lack of empowerment of water users. The history of Cambodia has heavily affected the current situation people. Freedom of expression, thought, speech, were

all suppressed during the Khmer Rouge. The people have a general distrust towards the government and local authorities. Despite many multiple attempts of expressing their concerns and complaints to the PPWSA, their voices were not heard and sometimes even threatened. In addition, the tension between the government and the slum areas for eviction has created a disconnection of society. Compared to this situation, the NGOs relatively have more leverage with the PPWSA. For example, out of the eight communes that were interviewed, four communities had many NGOs working for diverse sectors where as the villages of case 1, 2 and 3 had none. Compared with the former cluster of communities, the people had noticed their problems were being resolved and investigated when the NGOs acted as facilitators between the people and the authorities. When the communities had pipe eruptions, meter problems, and water disconnections, the NGOs would contact the PPWSA on behalf of the people. Their problems were resolved within one to three days. PPWSA would act quickly and efficiently when problems were raised by local NGOs whereas the latter cluster of communities had problems raising their concerns by themselves. There were no NGOs to facilitate the problems and as a result, their problems were generally investigated after a month. When interviewed, the former cluster specifically knew the names and understood the functions of NGOs within their towns; the latter cluster did not know the existence or functions of NGOs.

C. Inclusiveness

As we can see from the stakeholder diagram, the power distribution is heavily influenced by government and political party. The legal policies of PPWSA do not guarantee participation and there are no mechanisms to encourage public participation. The policies of PPWSA do promote the public engagement; there is a department within the PPWSA to resolve

complaints and issues; information sessions are held for people to understand and communicate with the PPWSA staffs. However, the policies do not guarantee public participation as power distribution is heavily influenced by political actors. From interviews, most of the interviewees had a common problem: their problems and complaints were being ignored and sometimes lives were being threatened. The people do not believe their power will affect the PPWSA decisions and therefore feel their voices are of no power. The information session only targets new communities; as a result, the slums and low-income households are naturally ignored and exempted from the sessions.

D. Corruption

There is no single methodology that is able to assess the overall corruption of the water sector due to the complexity of corruption at different levels and its lack of data- not readily available or easily generated (Jacobson et al., 2013). Prior to the reform, the PPWSA staffs were highly corrupted, as the system required the water bill collectors to go to each of the households and receive the water fees. After 1993, in an attempt to tackle corruption, the PPWSA had installed ATMs and local stations for people to pay directly. The bill collectors were only given the responsibility to provide water bill invoices after measuring the meters. After the reform, it was forbidden for the bill collectors to receive money in any circumstance. However, through interviews, some communities were still paying through the bill collector, and the residents were paying extra money as a service fee for the collector to bring it to the local paying stations.

In addition, the PPWSA had deliberately contracted with the private vendors despite attempts of residents applying for water connections. The will to pay the connection fee was high,

however, the PPWSA and private vendors had private contracts and did not allow the residents to have individual connections to their households. People realize this disadvantage and were outraged during the interviews. Many complained to the PPWSA local staff and the commune chief, but all of them either ignored the problems or threatened to cut the water supply. There is neither a monitoring and evaluation service for the bill collectors nor performance evaluation for the poor.

The households who apply for the connections also face corruption problems of the local authorities. To receive connection subsidies from the PPWSA, the people must submit ID Poor Cards issued from the Ministry of Planning or recognition from the local authorities or commune chiefs. There were incidents where the commune chiefs and village leaders did not recognize the poverty although family income was less than \$1.25 per person/day. Drawing evidence from the victimization studies, there were clear signs of corruption from the lower PPWSA staff, local authorities, commune chiefs, and private vendors.

VI. CONCLUSION

In accordance with the institutional analysis and development framework, and based on the fieldwork of three villages, the findings of the institutions and actor relationship are as follows: (i) there are two sets of institutions and five actors; (ii) the interaction of the actors are restrained by domestic and non-domestic institutions; and (iii) the interactions negatively affect the decision-making process. Compared to non-domestic institutions, the domestic institutions have relatively more power over the shaping and influence of actors within their jurisdiction area. The influence of domestic institutions do not always constrain the selfish actors' behavior and action to the betterment of society because the constraining methods may lead actors to take positions that were not intended from the institutions' side.

Table 7 Interactions of Institutions and Actors

	PPWSA	Village Leader	Private Vendor	Water User	NGO
Domestic Institution	Affected	Affected	Not Affected	Affected	Not Affected
Non-Domestic Institution	Not Highly Affected	Not Highly Affected	Not Highly Affected	Not Highly Affected	Affected

With this institutional approach, we can see how constraints of institutions on actor relationships lead to problems such as transparency, accountability, inclusiveness, participation, and corruption. As we have seen in the literature review, all these outcomes such as corruption lead to a fragmented decision making process. With this fragmented decision-making process in the water sector, the good governance should be questioned. This paper therefore, concludes the internationally appraised governance of the water sector of Phnom Penh should be questioned as institutions have dominated the fragmented decision making process leading to problematic actor action and behavior.

1. Recommendations

Many recommendations can be made, but this paper will focus on the need of increasing number of NGOs. In the domestic institution with village leader and water user relationship, we have witnessed the institution’s constraints on the actors, which lead to corruption problems. The corruption of the village leader in addition to the absence of an alternative

route of expressing concerns leads fosters more corruption of the leaders with discouragement of local empowerment. As a recommendation for good enough governance to good governance, the paper focuses on the need of need of more NGOs. The citizens need to have at least one non-government route assisting them to channel complaints, problems and concerns to the upper governing level. Rodger and Halls (2003) notes the NGOs have the power to “bridge the communications and facilitate the ongoing concerns between two parties that have different levels of political, economic, and social power.”

2. Limitations and Challenges

The limitations and challenges of this paper are the following; the culture of Cambodia is still heavily affected by its history thus interviewers were very cautious in explaining their experiences of corruption; choosing a single country case study; and the lack of data.

The history of the genocide has eradicated many skilled personnel and educated young professionals. Freedom of speech and expression has been restrained for many years and has affected the people’s participation and empowerment. Many are still reluctant to speak out and voice themselves remembering the past. During the interviews, much time was consumed to persuade and inform the residents that this paper and research has no relation with the government and the political party. Many were afraid of speaking out the truth and the evident corruption of water supply. The interview was conducted in a limited time and thus did not have the chance to engage in all of the poor residential areas. For further research, the sample research should be larger and should be conducted in a longer time frame. For future research, the research can be extended to compare different cases in different countries to further understand the institution and actor relationship in the water sector. The lack of data is always a problem for many developing countries.

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APPENDIXES

I. Institution Interview Information

Stakeholder	Interviewee	Position	Interview Date
Phnom Penh Water Supply Authority	Mr. Som Sovann	Deputy Assistant, Commercial Department	April 24, 2014
World Bank	Mr. Virak Chan	Water and Sanitation Specialist	April 25, 2014
Cambodian Development Research Institute	Mr. Vong Mun	Research Associate, Democratic Governance and Public Sector Reform	April 25, 2014
Teang Tnaut Organization	Mr. Meng Cheang	Technical Manager	April 22, 2014
Urban Poor Woman Development	Mr. Thy Vichith	Community Organizing Facilitator	April 23, 2014
Asian Development Bank	Mr. Januar Hakim	Senior Portfolio Management Specialist	April 30, 2014
Japanese International Cooperation Agency	Mr. Uchida Togo	Project Formulation Advisor	April 30, 2014
	Mr. Seak Pengkeang	Program Officer	
	Mr. Nhean Tola	Senior Program Officer	
Royal University of Phnom Penh	Mr. Vin Spoann	Professor of Environmental Studies	April 21, 2014

II. Household Interview Questions

The survey asked the following questions:

- 1) What type of water supply does the household use?
 - a) Piped water (water machine)⁵
 - b) public vendor
 - c) pond, lake, rainwater
- 2) Who provides the household water supply?
 - a) PPWSA
 - b) private middleman
 - c) nearby pond, lake, river
 - d) other
- 3) How much water do you consume?
- 4) How is the bill system coordinated?
- 5) What is the water fee per household for two months⁶?
- 6) How many people are in per household?
- 7) What is the average household income per household?
- 8) Do you have permanent residency identification issued by the Ministry of Land Use for your house? If not, what type of residency does your household have?

The in depth interview asked the following questions:

- 1) Why or why not is the household connected to the PPWSA Water Supply?
- 2) What are your concerns for water supply?
- 3) Do you have any concerns regarding the water fee and or the water tariff fee?
- 4) How much does your household have to pay for the connection fee?
- 5) Are you aware of the subsidy by the government?
- 6) Have you tried to apply to the PPWSA connection subsidy? Were you accepted or rejected, and why not?
- 7) Have you noticed or experienced corruption related to PPWSA or water supply in general? (i.e. water supply to people, management of PPWSA, installment of pipe, etc.,)

⁵ In Cambodia, the Water Machine is the well-known English word for the public water facility, Phnom Penh Water Supply Authority (PPWSA).

⁶ Two months were specifically selected as the PPWSA water bill is paid bimonthly.

III. Governance and Good Governance

Source (Grindle, 2007)

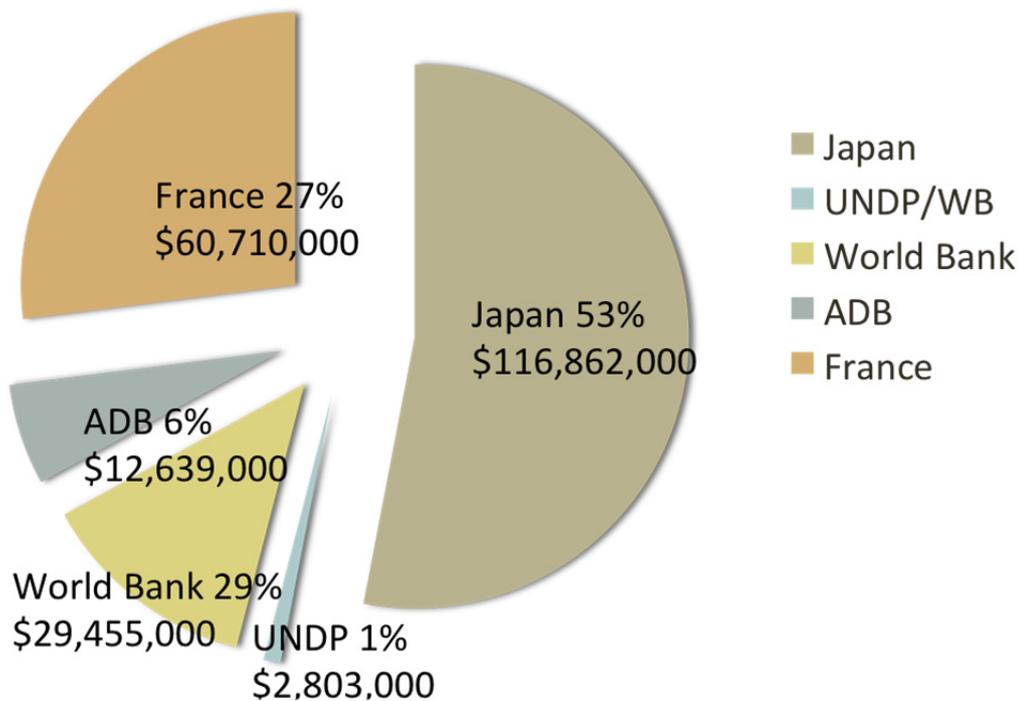
Source	What is Governance?	What is Good Governance?
World Bank	‘the process and institutions through which decisions are made and authority in a country is exercised’	Inclusiveness and accountability established in three key areas: ‘selection, accountability and replacement of authorities (voice and accountability; stability and lack of violence); efficiency of institutions, regulations, resource management (regulatory framework; government effectiveness); respect for institutions, laws, and interactions among players in civil society, business, and politics (control of corruption; rule of law)’
UNDP	‘the exercise of economic, political, and administrative authority to manage a country’s affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences’	Characterized as ‘participatory, transparent, ...accountable... effective and equitable...promotes the rule of law...ensures that political, social, and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision making over the allocation of development resources’
IMF	For IMF purposes, ‘limited to economic aspects of governance...in two spheres: improving the management of public resources...; supporting the development and maintenance of a transparent and stable economic and regulatory environment conducive private sector activities ...’	‘ensuring the rule of law, improving the efficiency and accountability of the public sector, tackling corruption’

DFID	‘how the institutions, rules, and systems of the state – the executive, legislature, judiciary and military- operate at central and local level and how the state relates to individual citizens, civil society, and the private sector’	‘seven key governance capabilities: to operate political systems which provide opportunities for all people...to influence government policy and practice; to provide macroeconomic stability ... to promote the growth necessary to reduce poverty; to implement pro-poor poverty; to guarantee the equitable and universal provision of effective basic services; ensure personal safety and security ...; to manage national security arrangements accountably...’ to develop honest and accountable government...’
USAID	‘The ability to develop an efficiency, effective, and accountable public management process that is open to citizen participation and that strengthens rather than weakens a democratic system of government’	Democratic governance: ‘transparency, pluralism, citizen involvement in decision making, representation, and accountability; focusing particularly on five areas’ legislative, strengthening, decentralization and democratic local governance, anti-corruption, civil military relations and improving policy implementation’
Hyden et al.	‘The formation and stewardship of the formal and informal rules that regulate the public realm, the arena in which state as well as economic and societal actors interact to make decisions’	Can be measured along five dimensions (participation, fairness, decency, efficiency, accountability, and transparency’) in each of six arenas (civil society, political society, government, bureaucracy, economic society, judiciary)
Kaufmann	‘the exercise of authority through formal and informal traditions and institutions for the common good, thus	Can be measured along six dimensions (voice and external accountability; political stability and lack of

	<p>encompassing: (1) the process of selecting, monitoring, and replacing governments; (2) the capacity to formulate and implement sound policies and deliver public services, and (3) the respect citizens and the state for the institutions that govern economic and social interactions among them'</p>	<p>violence, crime, and terrorism; government effectiveness ; lack of regulatory burden; rule of law; control of corruption)</p>
<p>Hewitt de Alcantara</p>	<p>'the exercise of authority within a given sphere...efficient management of a broad range of organizations and activities ...involves building consensus, or obtaining the consent or acquiescence necessary to carry out a programme, in an arena where many different interests are at play'</p>	<p>Processes through which there is incorporation of more creative and less technical understanding of reform, more dialogue about institutional and programmatic change, more concern with the public sphere (state and civil society) and how to strengthen it more, integration, of economic policy and institutional reform more attention to both national and international factors that affect governance.</p>

IV. Phnom Penh Water Authority Supply Reform

1. External Assistance



2. Piped Water Coverage

Source: McIntosh, 2003

Domestic Connections		Increase (%)	Coverage (%)
Year 1996	2001	130%	31%
27,387	62,970		

3. Efficiency of PPWSA's water supply

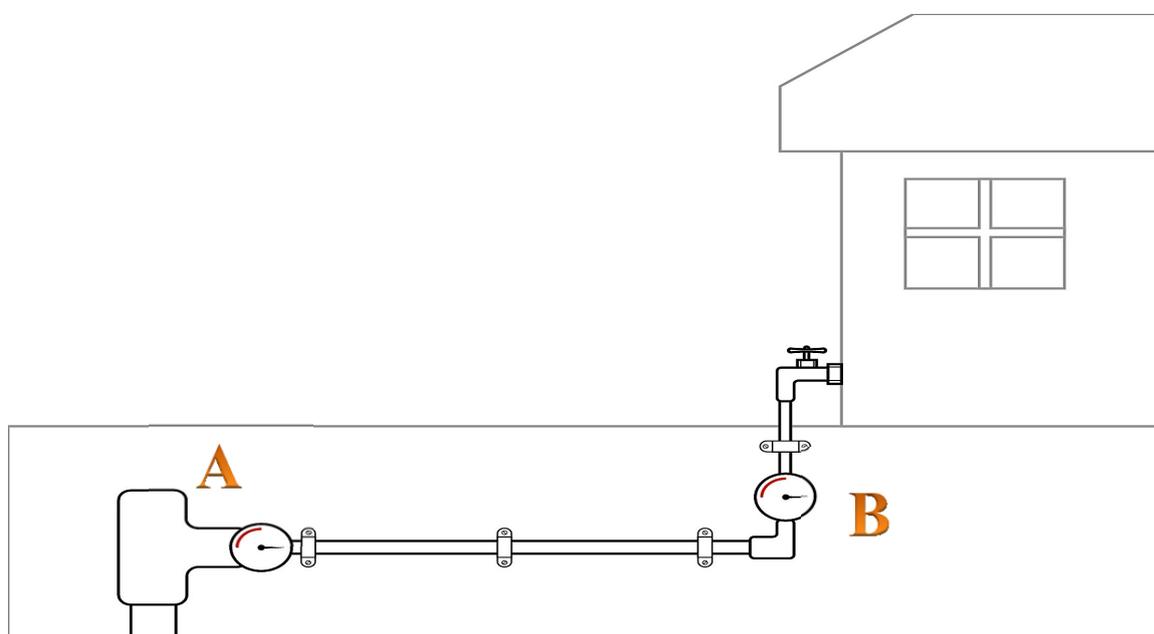
Source: Das, Chan, Visoth, et al., 2010

1993	Indicators	2011
20	Staff/1000 connections	2.76
65,000	Production Capacity	300,000
NA	Water Quality	WHO
20%	Coverage Area	90%
10 hr/ daily	Supply Duration	24hr/day
0.2 bar	Supply Pressure	2.5 bar
26,881	Number of Connections	219,498
72%	NRW	5.85%
48%	Collection Efficiency	99.9%
150%	Operation Ratio	37.16%
NA	Return on Revenue	23.49%
NA	Return on Net Asset	7.9%
NA	Current Ratio	2.39 times
NA	Debt Service Coverage	3.43 times
NA	Accounts Receivable	22 days

V. Water Connection

1. Water Fee

Up until A, it is the duty of the Phnom Penh Water Supply to supply the main pipes and meter A including the service and labor fee. From A to B and to each of the households, the households are in charge of supplying pipes and meter B. This extension can be handled through a third party or by the households themselves. The laying of main pipes and the meter A is around US 100 dollars; the extension could amount up to US 400 dollars depending on the distance of the household. Therefore, a household can pay up to US 500 dollars for connection fee.



2. Water Subsidy

The water connection subsidy is known as the “Clean Water for Low Income Families” policy. It is as follows:

Before 1999	No Subsidy
1999 - 2005	10, 15, 20 months in payments
2005 - Now	Subsidy of 30%, 50%, 70%

3. Beneficiaries according to PPWSA's Annual Report Clean Water for All 2013:

Description	Number of Connections									Total Subsidy (Riels)
	Beginning			Increase in 2013			Ending			
	Urban	Outskirt	Total	Urban	Outskirt	Total	Urban	Outskirt	Total	
A. Subsidy	1,606	16,771	18,377	41	1,398	1,439	1,647	18,169	19,816	5,069,265,840
100%	275	7,557	7,832	8	517	525	283	8,074	8,357	2,828,008,800
70%	646	4,596	5,242	24	582	606	670	5,178	5,848	1,385,274,240
50%	542	3,412	3,954	8	269	277	550	3,681	4,231	715,885,200
30%	143	1,206	1,349	1	30	31	144	1,236	1,380	140,097,600
B. Instalment Payment	-	-	10,759	-	-	2	-	-	10,761	<i>Instalment Payment</i>
SumTotal	-	-	30,351	-	-	1,441	-	-	30,577	-

4. Outreach from PPWSA to Public



Samrong 1 Village, Takmao Commune,
Takmao Town



Banla Sa-it Village, Khmuonh Commune,
Sen Sok District

ABSTRACT IN KOREAN

본 논문은 Elinor Ostrom 의 Institutional Analysis and Development 프레임워크를 사용하여 프놈펜 캄보디아의 식수 공급에 관련 되어 있는 관여 자들의 의사결정 및 의사 결정에 따른 식수 공급 결과를 연구하는 것이다. 대부분의 프놈펜 지역 주민들은 1993 식수 개혁으로 인해 정부 식수 공급을 받지만, 최빈곤층이 밀집하여 살고 있는 다수의 마을들은 정부 식수를 공급받지 못한 채, 사기업에서 제공하는 식수를 받아 사용하는 것으로 보인다. 이 논문은 왜 1993 개혁 이후, 빈곤층이 아직도 정부 식수 가격보다 최대 10 배가 넘는 사기업 식수를 선택하고 있는가에 대한 질문에 출발하였다.

구체적으로 식수 공급과 관련되어 있는 관여 자들이 누구이며, 이들은 어떠한 이유와 근거로 인해 의사결정을 내리며, 이러한 의사결정이 최빈곤층에게는 어떠한 공급 작용을 하는 것인지 연구하였다. 또한, 프놈펜 캄보디아 현장 조사를 통해 관여 자들과 지역 주민들을 인터뷰하여 그들이 현재 식수 공급에 갖고 있는 어려움을 밝히고자 했다. 다수의 기관들과 총 8 개의 마을들을 조사하였다. 이들 중, 3 곳의 마을들은 일부 특혜 받은 주민들만 정부 식수 공급을 받거나 최악의 경우, 주민 전체가 정부 식수를 공급을 받지 못하고 있었다. 이에 따라, 이 3 곳의 마을 주민들 대상으로 심층 인터뷰를 진행하였다.

조사 결과, 이 마을들에서 정부 식수를 제공 받은 주민들은 정부 관련자들이 대부분이며, 최빈곤층을 위해 만들어진 식수 제도는 마을 주민들을 관리하는 지방 정부 관련자들의 부패로 인해 작동이 되고 있지 않았다. 즉, 최빈곤층을 위해 중앙 정부의 제도적인 개혁이 있었으나, 실제로 이러한 제도를 실시하는 지방 정부 관련자들로 인해 마을 주민들은 식수 공급을 받지 못하였으며, 이러한 부패를 인식하고 인지하고 있는 주민들에게 주어진 유일한 해결 방안은 식수 문제를 일으킨 지방 정부 관련자들에게 불편을 호소하는 것 외에 없다. 특히, 이 세 마을들의 주민들은 NGO 등 지방 정부 관련자들을 거치지 않고 불편을 호소하는 방법이 없기 때문에 악순환이 반복 되는 것으로 나타났다.

Institutional Analysis and Development 에 의하면 식수 공급과 관련 되어 있는 관여 자들의 Actor Situation 과 그들 사이에 일어나는 Interaction 은 프놈펜 최빈곤층의 식수 공급에 악영향을 주고 있음을 보여준다. 이 논문은 이러한 환경을 개선 시키기 위해 NGO 활동을 중요하게 생각한다.