AN ABSTRACT OF THE THESIS OF

Stuty Maskey for the degree of

Master of Public Policy

presented on April 28, 2011.

Title: Using the Advocacy Coalition Framework to understand challenges in urban water policy reforms: A case study of the Melamchi Water Supply Project in Nepal

Abstract approved:

Denise Lach

The Himalayan mountain range is one of the world's largest sources of fresh water, and Nepal, situated at the foothills of the Himalayas, is endowed with ample water resources. In spite of this water abundance, drinking water supply in many parts of the country is inadequate, particularly in the capital, Kathmandu Valley. For a long time now, Kathmandu residents have been struggling with an increasing urban water shortage. In 2000, as a part of the urban water sector reform program, the Government of Nepal (GoN) entered into a loan agreement with the Asian Development Bank (ADB) to construct the multi-million dollar Melamchi Water Supply Project.

This Project provides a sound case study to understand urban water policy challenges in Nepal. This much-hyped project has been mired in controversy ever since its inception and subsequent loan-agreement. The development of the project was halted due to numerous controversies ranging from charges of social injustice to environmental concerns, and the project deadline has been revised more than three times.

This paper analyzes how differences in beliefs and values lead to the formation of conflicting coalitions that stand firm to protect their core beliefs. By applying the Advocacy Coalition Framework, this paper then examines how coalitions interact, negotiate, reorganize, and adapt to changing policy conditions, to survive and to advance the policy-making process.

USING THE ADVOCACY COALITION FRAMEWORK TO UNDERSTAND CHALLENGES IN URBAN WATER POLICY REFORMS: A CASE STUDY OF THE MELAMCHI WATER SUPPLY PROJECT IN NEPAL

by

Stuty Maskey

MPP Essay

submitted to

Oregon State University

in partial fulfillment of

the requirements for the

degree of

Master of Public Policy

Presented April 28, 2011

Commencement June 11, 2011

Master of Public Policy essay of Stuty Maskey presented on April 28, 2011

APPROVED:

Denise Lach, representing Sociology

Brent S. Steel, representing Political Science

Sarah Henderson, representing Political Science

Stuty Maskey, Author

ACKNOWLEDGEMENTS

I would like to express my special appreciation to my committee chair Dr. Denise Lach for being a wonderful mentor. I am and will always be immensely indebted for all her help, guidance, encouragement, and inspiration.

I thank the members of my committee, Dr. Brent S. Steel and Dr. Sarah Henderson for their brilliant comments and suggestions. Thank you for being so accessible, efficient and helpful in all occasions.

I thank all my friends I've met over the past two years at Oregon State University. They have made my years at OSU not merely a study program but a joyful learning experience. My special thanks goes to Dan Weston, for always being there and for making my Oregon experience so memorable. I am also thankful to my roommates, Gunjan and Narbada. I will always have fond memories of our cooking experiments, journeys around the US and long chats about everything and everyone. Thanks Maya, for being a wonderful friend. Thank you, Holly and Terence. I have learned a lot from each one of you.

I would also like to acknowledge USAID's generous financial support in sponsoring this program.

I am grateful to my family, *Gud di*, *Garaju* and especially my mother for loving me unconditionally, for the undying faith in me, and for showing great strength during challenging times. I love you all.

My last thank you goes to my dad. *Buwa ,*you will always be in my heart.

TABLE OF CONTENTS

USING THE ADVOCACY COALITION FRAMEWORK TO UNDERSTAND CHALLENGES IN URBAN WATER POLICY REFORMS:

A CASE STUDY OF THE MELAMCHI WATER SUPPLY PROJECT IN NEPAL

1: INTRODUCTION

Nepal is a narrow strip of land in between India and China, with an area of about 55,000 square miles, extending roughly 550 miles east-west and 125 miles north-south. In the northern part of the country lies a stretch of some 500 miles of the Himalayan Mountain range, comprised of some of the tallest mountains in the world. The Himalayan range is one of the world's largest sources of fresh water and therefore Nepal has abundant water resources. There are over 6000 rivers and streams, many of which are fed by monsoon rains and still others that are fed by snow and glacier melt in addition to the rain. Although the total average annual runoff from all these river systems is estimated at about 225 billion cubic meters, only a small portion it, estimated at 15 billion cubic meters, has so far been utilized for economic and social purposes (GoN Report, 2008).

In spite of this water abundance, the problem of safe drinking water supply in many parts of the country is serious, particularly in Kathmandu Valley. This is mainly attributed to rapid unplanned urban population growth, inefficient management of the government owned water system, and pollution of surface and groundwater.

According to the 2010 Asian Development Bank (ADB) report, the water demand from over 2.1 million permanent resident of Kathmandu is about 195 million liters daily (MLD). But the supply is limited to 140 MLD in wet seasons and just 100 MLD in dry seasons. Kathmandu has been struggling with its urban water shortage for a long time now. In 2000, as a part of the urban water sector reform program, the Government of Nepal (GoN) entered into a loan agreement with the ADB and other donors to construct a multi-million dollar mega-scale Melamchi Water Supply Project (Melamchi project, hence forth) that would essentially transfer 170 MLD water from the Melamchi basin to Kathmandu Valley through a 26 kilometer long tunnel. One of the loan conditions attached to the funding of the project was that the water supply and distribution services had to be contracted out to a private water company for a certain time period.

This introduction of private sector participation (PSP) in the drinking water sector generated substantial controversy in the policy arena in Nepal. International donor agencies like the World Bank and other regional banks like the Asian Development Bank, as advocates of economic efficiency, together with government agencies promoted PSP as the best recourse to meet urban water challenges. But this was widely protested by human rights and civil society groups that were concerned with potential rises in water prices and social injustice. They argued that water is a human right and it is the government's obligation to deliver sufficient, safe, accessible and affordable water to its citizens. Around the same time, there emerged another set

of actors who also contested the development model enforced by the international donor agencies and proposed exploring alternate approaches such as community managed water resources and reviving traditional water systems instead of undertaking large-scale water development projects funded by loans attached with loan conditionalities.

This paper looks at the challenges faced in implementing urban water reform in Nepal. The Advocacy Coalition Framework (ACF) is applied, as this case offers an appropriate premise to examine the formation of diverse belief system in political coalitions, their unequal power relations, and the extent to which the coalitions are willing to communicate with each other to advance the policy change process.
The Melamchi Project provides a sound case study to understand urban water policy challenges in Nepal. This much hyped project has been mired in controversy ever since its inception and subsequent loan-agreement in 2000. The development of the project was halted due to numerous controversies ranging from charges of social injustice to environmental concerns. The deadline of the project has been revised more than three times and the GoN acquiesced to several demands by conflicting parties. But the controversies never fully ceased and the GoN, in its frantic effort to prevent the ADB from withdrawing funding due to the long stalemate, contracted out the tunnel construction project in 2009 amid ongoing controversy. Based on the current estimates, Melamchi water should quench Kathmandu's thirsty people from 2013 onwards.

The paper starts with an overview of the historical water management systems and the advent of various models such as public, private and community managed systems followed by deeper discussion in the context of Nepal. It also briefly reviews the legal context of Nepal's urban water laws and policies. The paper then analyzes data from existing documents regarding the Melamchi Project to identify policy core-beliefs of coalitions and examine coalition interactions. This study of diverse belief systems and policy oriented learning in water policy reform is done by exploring mainly three hypotheses of the ACF that; i) the core elements of a government program are unlikely to change in the absence of significant external perturbations; ii) a coalition will give up secondary aspects of its belief system before acknowledging weakness in its policy core; and iii) policy oriented learning across belief systems is most likely when there is an intermediate level of informed conflict between different coalitions.

The analysis reveals how three different water management coalitions in Nepal that share unequal power relations struggle continuously to protect their core beliefs when faced with policy reform challenges. By applying the ACF, this paper examines the alliances among formal and informal actors, within and between coalitions, and how coalitions adapt to changing policy conditions to make public policies.

2: HISTORICAL OVERVIEW

The challenge of access to safe drinking water is not new nor is it a distinct characteristic of only the developing world. The debates and discussion regarding provision of water supply started in the developed countries over two hundred years ago, and it is in these industrialized countries that various models of water supply management were introduced, abandoned, and innovated (Prasad, 2007). The experience of England, the United States, and France can be helpful to understand this progression. During the 1800s, most of the cities in these countries relied on wells, water vendors, and rivers for their daily water supply. It was only during the mid- 19th century, when the relationship between water infrastructure and death (diseases like cholera, diarrhea) was established, that cities started to invest in public works like water supply (Gandy and Zumla, 2002).

The development in these industrialized nations can't be studied in isolation of the philosophies conceptualized by early intellectuals of the era like Adam Smith and David Ricardo. This was a time in history where capitalist efficiency and free trade were being promoted as the mantra for development. Likewise, researchers argue that perhaps a business motive was the main factor in considering the first private proposal in the mid 1800s. England was the precursor of modern water supply systems, privatizing its water supply during the late 19th century. This was followed by other countries in Europe, notably Germany and France, and the United States. However, due to various concerns ranging from under performance to corruption, many of these

services were gradually transferred to municipal and public ownership. This process was also strengthened by a remarkable shift in the 20th century from the conventional economic thought to Keynesian Economics, which promoted state intervention in market economies with the aim to achieve growth rates on the basis of social policy. Subsequently, some degree of state intervention in water management became more or less accepted in mainstream economics and in conventional politics.

Over the long time span of experimenting with public and private provision of water supply, policy makers and analysts have argued vehemently for various forms of water reforms to meet the ever growing cities and urban areas. Though private sector provision was not a novel concept, by the late 1970s it started to take a prime seat on the development agenda. This was mostly credited to the switch in focus of the international aid agencies, primarily The World Bank (WB) and International Monetary Fund (IMF), from basic needs in the 1970s to structural adjustment in the late 1980s. Consequently, this brought a major change in the international discourse in development policies. Based on the principles of "neoliberal" reforms that emphasized the role of free markets, this development theory contended that the private sector could improve efficiency, extend coverage of service, bring in more investment, and relieve governments from budget deficit.

During the early 1990s, many developing and transitional countries adopted private sector participation in provision of public goods as tools for national growth and wealth. One of the main reasons why so many developing countries decided to

involve the private sector in water and other infrastructures was the influence and persuasiveness of international donors, which by virtue of their powerful position could shape the policy agenda of the debt dependent borrowing countries. Between 1990-2005, 56 countries adopted this model (Prasad, 2007). However like many other development models, this wasn't without its flaws. Water privatization was criticized heavily during the 1990s when it failed to bring equity and access to poor people in cases such as Cochabamba (Bolivia), Manila (Philippines), and Buenos Aires (Argentina).

2.1 Proponents of Water Privatization

The beginning of the 21st century was marked by further debates in the growth model promoted by the International Aid Agencies. The process is highly influenced and directed by the international donor agencies that promote private participation as an economic tool as well as a political vehicle to achieve international peace and social stability (Escobar, 1995). This approach is still controversial and draws attention of planners and policy makers worldwide.

In South Asia, the Asian Development Bank (ADB) is the largest donor for urban water management programs. In 2001, ADB outlined its vision for integrated water management for the region in its 'Water for All' policy handbook and promoted private sector participation as a solution to the rising water crises (ADB, 2001). The guidelines suggest that pricing policy reforms and institutional reforms are prerequisites for efficient water systems.

The proponents of private sector participation (PSP) in the water sector claim three main points. First there is inefficiency and corruption in the public management of utilities. Public utilities are inherently inefficient, overstaffed, and manipulated by politicians to serve short term political interest. These inefficiencies are major causes for poor access to water services in the developing countries. On top of this, as much as a third of production is lost due to leakage and theft. Further, revenues are insufficient to cover operating cost and thus the quality of water and service delivery is ever degrading (Rogers et al., 2002). ADB's water website states that the solution to these problems lies in considering water as a sociably vital economic good that needs careful management and a participatory approach to conserve it (http://www.adb.org/Water/Policy/default.asp). To maximize the efficiency of publicly owned and managed water service delivery systems, ADB promotes the contracting out to the private sector of specific operations. Second, the proponents of PSP view current water tariff rates in developing countries as below the market rate and argue that higher water rates will allow utilities to extend services to those currently not served and those currently forced to purchase water from vendors at very high prices (Rogers et al., 2002). Studies have shown that in developing countries, poor services of the state-run water utilities force consumers, especially the poor, to rely on private operators like water vendors, tankers, and standpipes. These operators are unregulated, have favorable ties with utility employees, and exploit the consumers who have no option but to buy water, often at exorbitant prices. In Kathmandu, where

water tankers are common and operate in an illegal environment, the water tariff is six to ten times more than the strongly subsidized utility tariff (McIntosh, 2003). It is suggested that a full cost recovery approach where pipe-supplied consumers pay the full cost of water instead of subsidized rate will reward conservation and penalize waste while ensuring coverage and social equity.

Another argument is that leakage, theft, illegal connections, and overflow from utility storage and pipes comprise considerable loss for the utility. This also directly affects the capacity of these utilities to be financially viable. To a large extent this is due to poor construction and infrastructure. Improving piped water infrastructure requires huge funds from external sources and the private sector can bring much needed funds to improve efficiency and meet the rising demands in the developing countries.

Over the years, PSP approach hasn't been without its inherent problems and has adapted continuously to rising pressures ranging from outright privatization to various forms of management contracts. Since introducing private water management, both multinational companies that take over management and communities where such changes take place, have struggled with privatization. While many local communities complain that companies focus on lucrative aspects of service, such as water supply to wealthy urban residents at the cost of poorer customers, some of the major multinational water corporations have closed their operations in several developing countries. These departures were related to a series of national economic

crises, social protest, incidences of corruption, risky operating environments, miscalculation by the multinationals, and the difficulties of extracting profit by delivering water to poor consumers. For example, the transnational private-water-company Suez pulled back from Latin America and developing economies but remained in China. Another water company Veolia, concentrated on providing water in Europe and China (Prasad, 2007). It increasingly became apparent that the role of private sector in water supply needed to be re-thought if they were to stay in business. The proponents of private participation then repackaged PSP into a form of private-public partnerships (PPP) (Robbins, 2003).

2.2 Opponents of Water Privatization

Since the early 1990s, the anti-privatization groups have fought fiercely to establish that water is not an economic good but a human right and a public trust. They argue that it is the government's obligation to deliver sufficient, safe, accessible, and affordable water to citizens as a public service (Barlow, 2008). In July 2010, the UN General Assembly recognized access to clean drinking water and sanitation as human right; world water advocates hailed this as a momentous step toward achieving their goal of access to water for everyone.

International anti-privatization groups like 'Anti-privatization forum', 'Food and Water Watch', and 'Public Services International' openly condemn the focus of the World Bank and other regional development banks on the transferring of water management to private sectors rather than helping improve public services. Studies

show that water affordability is a major issue in most developing countries and the poor are disproportionately affected. This has led to a rising belief that private sector participation was oversold during the 1990s without realizing or addressing the challenges of such policy reforms (Prasad, 2006 a).

Opponents argue that water is for life, for survival. They believe the loan conditionalities by donor agencies that require governments to contract out water management to large transnational water companies is a mechanism to exploit the government and people of poor countries. Their main concern is that the transnational water companies charge higher prices or decrease quality of service to lower the production cost and increase profits. The other issue raised is that these for-profit water companies are amoral in their approach, in that they are keen to provide water to the politically and economically powerful sectors of the country, with subsequent negative impacts on the vulnerable groups and increases in social exclusion. Opponents emphasize that that areas with the greatest shares of low-income people with inadequate access to water are the least likely to be served by the private sector, in either urban or rural areas (Budds and McGranahan, 2003). Prasad claims that as most developing countries are desperately seeking to attract foreign investment in their water sector, the governments give in easily to the conditionalities that may exempt the international water companies from implementing equity and social policy objectives in their agenda (Prasad, 2007) Anti privatization activists like Maude Barlow and Vandana Shiva criticize the preconditions to privatizing water management with

rhetoric such as ‘corporate theft of world water’ and ‘corporate water abuse’ (Barlow, 2008 and Shiva, 2002).

One reform proposed by anti- privatization groups is to invest the massive funds to promote the expertise in the public sector. Non-profits such as Public Services International claim that in the water sector, labor is the economic input and training workers is a fundamental element in improving water services; this perspective has fallen out of favor with the development banks and donors (Hall and Lobina, 2006). A second approach in resistance to privatization is to promote public-public partnership (PUPS) in which public water utilities, with expertise and resources (typically in advanced countries/cities), are partnered with those in the smaller countries to assist the development of local managerial, financial, and accountability capacity. Rather than changes in the ownership of public operations, this approach to reform promotes capacity building through training, treating the capacity to transfer knowledge as a public good rather than private, marketable asset (Lobina and Hall, 2006).

2.3 Community Approach to Water Management

Focusing only on the privatization –water as human rights debate can divert attention from other important aspects of water management like the roles played by non-government organizations and community-based organizations. It may also aggregate diverse actors and agencies in both the private sector (e.g. informal vendors and multinational corporations) and the public sector (e.g. public utilities, regulators, local authorities and national ministries) (Eldidy, 2005), missing the fact that there may

be heterogeneous views of water management within different coalitions . While water privatization continues to be an intensely debated issue in the policy making arena, the concept of community is increasingly gaining importance as an alternative to privatization. Bakker (2008) argues that the terms public and private only incompletely captures the diversity of the existing range of resource management systems. The conventional models of public and private sector management do not exhaust the range of alternatives to be considered in managing water and the emergence of community water supply alternatives to privatization in public debate playing an instrumental role in disrupting the public-private discourse which ruled much of the privatization debate in the 1980s and 1990s (Bakker, 2008).

The main argument for a community participation approach is that communities worldwide have managed water albeit at a small scale and through informal mechanisms. The literature discusses two types of community based water management. The first one is where communities are directly involved in the ownership of infrastructure and management of water utility. The argument is that those who contribute to build, operate, and pay for the water supply have a greater sense of ownership than those who are mere recipients of services from government or international aid. In addition, simple, appropriate technology adopted in community-run systems is more economically attuned to the financial capacity of small communities than more sophisticated and expensive infrastructure (Page, 2003). Long popular in rural settings, this approach is now being applied and promoted successfully

in urban settlements too. This type of water utility management structure has been categorized by a network of NGOs and development bodies like UNICEF, UNDP, Water Aid as well as researchers from the academic world as water cooperative or community based water governance (Bakker, 2008; Barlow, 2008).

The second type of community based water management is centered on community participation in decision making. This system is a stark shift from the conventional theories of governance in which the government is solely responsible for decision making. This framework proposes broader participation of civil society, private enterprises, local community, and other legal institutions so they have a real say in how their water services are allocated, developed, and managed. This alternative to conventional water management systems, which emphasize participatory governance, is categorized as civil society organizations (CSO).

The search for alternative models of socio-economic development such as seeking CSO participation in public policy is attributed to the steering of discourse from government to governance (Mayntz, 2003). Good governance is based not only on effective and transparent government but also on active citizenship. Thus, achieving good governance over water management requires the ability and capacity of not only leaders and local elites but also vulnerable and discriminated groups, like poor women, to be able to participate meaningfully and advocate their interests effectively in the process (Black et al., 2004).

3: NEPAL: WATER SUPPLY SERVICES

Nepal has abundant water resources. Due to its strategic location right in the heart of the Himalayan range, many snow-fed perennial rivers originate here. It possesses about 2.3 % of the world's fresh water resources with less than 0.4 % of the world's population (ADB, 2000). Although there are about 6000 rivers and rivulets in this small Himalayan country, drinking water supplies in most parts of Nepal are inadequate. This is especially true in Kathmandu, the capital city, which is the country's largest urban economy and a catalyst for the country's economic growth. According to one report, Kathmandu Valley only covers 0.43% of the total area of Nepal yet accommodates about 7% of the total population (ADB, 2010).

This study area will focus on the Kathmandu valley, which is comprised of one metropolitan city (Kathmandu), one sub-metropolitan city (Lalitpur), and three municipalities (Bhaktapur, Madhyapur and Kritipur). Since the 1990s, this area's population density has soared from 1.08 to 1.59 million in 2001 (Pantha and Sharma, 2003). The unofficial population figure of Kathmandu is currently estimated to be around 29.9 million (*The Kathmandu Post*, October 24, 2010). The valley is the center of administration, economy, education and politics and as a result has witnessed ongoing migration from the rural areas since the 1990s. This has raised the demand for water enormously. There are two main types of water source in Kathmandu Valley: surface and underground. In response to the massive rise in population and the consequent inability of government to meet demands, industries and individuals have

resorted to informally managed private water suppliers or to extracting groundwater. However, with an absence of institutional responsibility for groundwater development, regulation, and knowledge based management, the ground water levels are declining at an alarming rate (Pant et. al., 2008). The current trend is to rely on tankered supplies (private companies supplying water in large tankers), bottled water, and wells. This has led to serious environmental concerns as shallow wells are becoming increasingly polluted and deep aquifers are being mined haphazardly to secure additional water by informal private suppliers, communities, and individual households.

In order to address the increasing worldwide water crisis, the UN General Assembly recognized access to clean drinking water and sanitation as a human right in July 2010. Under the targets set by the United Nations in the Millennium Development Goals (MDG), 2005-2015 has been identified as International Decade for Action 'Water for Life' with a goal to "Halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation"(World Health Organization and UNICEF, 2005). Nepal has pledged its commitment to the Millennium Development Goals.

3.1 Historical Overview – Water Management in Kathmandu

Kathmandu's cultural history can be traced back as far as 2000 years (Sharma, 2003). Historically, this was one of the famous urban centers in Asia and a gate-way of Indo-Tibet trade. Before piped water was introduced in the late 1800s, residents relied on rivers, stone-spouts, and hand dug wells for their water. It is interesting that the

centuries old traditional sources of water that were largely neglected during modernization have once again been brought in use due to the pressing water crisis. According to a UN report, about 400 stone spouts and 1000 dug-wells have been traced in this area so far (UN-Habitat, 2008). Although many of them have dried up or reduced in supply over the centuries, a community-conservation movement started in early 1990s and successfully conserved a few.

Kathmandu's age old water system, the stone-spout, was based on deep understanding of the geological and ecological setting of the area and was engineered to work in harmony with natural limits. The spouts were located within rectilinear pits built into the ground called *hitis*. Each *hiti* consisted of one or numerous spouts depending on the aquifer charging capacity. The sources of water for these spouts were shallow aquifers. But shallow aquifers deplete fast, so canals called *RajKulo* were built to recharge the aquifers. In addition, ponds were constructed close to the *hitis* to augment the aquifer by storing rainwater (Upadhya, n.d.). The ponds that were located inside settlements were relatively small in size. They were used for washing and cleaning purposes, but another important function was to provide a buffer to downpours during rainy season. More importantly, they helped recharge the ground water, particularly to local aquifers. External ponds, especially those located in higher elevation settlements, were meant for recharging the aquifer as well as serving as the reservoir for feeding irrigation canals (UN-Habitat, 2008). To manage the system, whole neighborhoods were mobilized, locally referred to as *'guthi',* which were

managed under local leadership that oversaw maintenance and service (Shrestha and Shrestha, 2008).

In addition to stone spouts, dug-wells were also common in Kathmandu. These wells collected water from shallow aquifers, normally 4-6 meters under the surface. In earlier times, these wells were not directly linked with traditional ponds and canals. However, with the pressure of rising population and technological improvement like electric water pumps and plastic water tanks for storage, water-wells quickly took over as the first alternative to meet the municipal water deficiency. In the absence of any regulation to manage ground-water, dug wells flourished and soon became one of the major reasons for reducing water supply to stone-spouts. The natural aquifers feeding stone spouts were interrupted and many started to run dry. Furthermore, the haphazard construction of deep foundations for large buildings, and construction of drainage and pipelines across the aquifers destroyed the natural water channels system, putting the ancient engineering on the verge of extinction (Dixit and Upadhya, 2005).

3.2 Reviving Traditional Water Systems

The convenience of piped-water based on modern technology caused the community to neglect the old system. This was fueled by the widespread belief that western education, techniques, and management were unquestionably superior to the ancient methods. But rising urban pressure and unplanned adaptation of western models served only as a temporary relief. Desperate city residents, without a

municipal water supply or supply from stone-spouts, resorted to deep ground-boring, causing severe damage to the ground water ecology. At present, even the city water-supply relies heavily on numerous deep wells, more than 200 meters deep, to provide water to industrial and residential consumers (Dixit and Upadhya, 2005). The Melamchi Project, which was supposed to provide additional water supply to the Valley and be completed by 2002, got delayed again and again. Communities lost faith in government's commitment and started to look for alternatives. Traditional methods of water harvesting and local knowledge were revisited. This was backed by local experts and the scientific community who provided evidence of its usefulness and opportunities for revival.

With non-profits such as NGO-Forum, Lumanti, and various other international non-profits, certain communities began to manage their own water systems. Various reports in daily national newspapers featured stories like this:

> Local residents at *Tokha* have set a precedent by preserving their cultural heritage as well as promoting the use of sustainable water resources. Residents, none of whom have running water at home, have consolidated their efforts to clean and maintain three stone water spouts that were constructed at least 150 years ago. ENPHO, local clubs of *Tokha*, and women's cooperatives in *Tokha* conducted a programme to clean the stonespouts and create awareness about safe drinking water on November 29. Since then, local residents agree that their initiatives have only had positive impacts. *(The Kathmandu Post, December 17, 2009)*

Another national daily newspaper reported a study on costs and benefits of rainwater harvesting, stating that rainwater would cost less than buying tanker water.

Referring to the technology adopted by a private boarding school *Shuvatara*, it reported that with the installation of a rainwater harvesting plant with storage capacity of 68,000 litres, the school was saving Rs. 6,000 each month during the dry season. Furthermore, it mentioned that the cost of construction of the rain-harvesting system was paid back within three years *(The Himalayan Times, July 5, 2008).*

Thus a movement began to promote community managed water resources by reviving the works of the centuries-old water system. Several communities used the *hiti*-system as an example to demonstrate how the early water-planners designed systems that used shallow aquifers to provide a sustainable water supply. This, combined with rain-water harvesting, made few communities self-sufficient and even to boycotting state supply altogether. In example, The Aalik Hiti Conservation and Water Supply Users' Committee in Lalitpur area began in 2005 and now serves 180 homes with 250 to 300 liters of water every day (UN-Habitat, 2008). Though these community-based organizations work at a different scale and don't attract much political attention, they can play an important role in water management system and can't be neglected.

3.3 Water Policy and the present legal context

The Government of Nepal (GoN) revised and promulgated a number of policies, acts, and strategies after the restoration of democracy in 1990 including The Water Resources Act of 1992. This law established the GoN ownership of water resources, reasserting state ownership of all water resources within the country. To utilize this

water, people had to get a license from the government. However, people who wanted to make use of water resources for collective benefits, could form a Water Users Associaion (WUA) and become duly registered (Sharma, 2003). The WUA facilitates the interaction between the water-users and the government agency during the design and implementation of the project with emphasis on a participatory approach. The users can acquire and distribute water following a set of rules, which is drawn by the users themselves. For example, during water deficit periods, users may share water by adopting time-based turns mostly in days and nights (Magar, n.d.).

The urban water-sector priority was established as a part of a broad-based economic reform agenda promoted by the ADB. According to this policy, urban water services in Nepal could be improved by bringing about institutional reform, introducing new national policies, and opening up markets to attract foreign investments in water through private sector participation.

A National Urban Water Supply and Sanitation Sector Policy was formulated in 2009 to meet the crisis in Kathmandu city. Based on the PSP model and user participation in decision making, this policy also stressed a full cost-recovery approach while also supporting the need to deliver affordable water to marginalized households.

3.4 Urban Water: Institutional Reforms

The Water Resources Act of 1992 created two administrative ministries for water management. Drinking water was assigned to the Ministry of Physical Planning and Work (MPPW) while hyrdopower, irrigation, and disaster prevention was assigned

to the Ministry of Water Resources. MPPW was given responsibility for formulating national level policies and programs, as well as targets to meet the National Development Plans.

Prior to reforms, the Nepal Water Supply Corporation (NWSC), a government corporation set up in 1973, was responsible for water supply management in Nepal. In 2006, the Water Supply Management Board Act was passed which amended laws and enacted new laws that allowed implementation of institutional reforms. NWSC's role was then limited to only about 20 municipalities and large urban centers outside the Kathmandu Valley. In Kathmandu, three separate entities were established for the following purposes: (i) Kathmandu Valley Water Supply Management Board (KVWSMB) was entrusted as the asset owner of all water supply facilities and responsible for developing and overseeing service polices within Kathmandu Valley. (ii) Kathmandu Upatyaka Khanepani Limited (KUKL) was set up as a water corporation in a public-private partnership model and was awarded the license to operate and manage water supply in Kathmandu Valley by using the assets of KVWSMB under a 30-year lease. (iii) For economic regulation of water supply and resolution of consumer complaints, an independent Water Supply Tariff Fixation Commission (WSTFC) was formed (Pant et al., 2008).

4: MELAMCHI WATER SUPPLY PROJECT

4.1 Rationale for the Project

To mitigate the increasing drinking water crisis in Kathmandu Valley, the GoN initiated the Melamchi Water Supply project (Melamchi Project, hereafter) in 1997. The Project is comprised of four major components a) construction of a 26 kilometer long tunnel to carry about 170 million liters per day from the Melamchi River into Kathmandu Valley; b) construction of about 43 km of access road; c) construction of a water treatment-plant to treat the water before delivery; and d) development of a social uplift program including income generation/ community development, buffer zone development, rural electrification, and health and education programs (ADB, 2008).

The project envisaged that the tunnel infrastructure could meet the increased water demand in Kathmandu for the next 25 years. The planned project cost was estimated to be US$ 464 million (2000 prices). The ADB agreed to finance the project as the lead donor with four co-financiers: Japan Bank for International Cooperation, Nordic Development Fund, Organization of Petroleum Exporting Countries (OPEC) Fund for International Development, and Japan International Cooperation Agency (JICA). Out of the estimated total project cost of $464 million, ADB's loan amount was $120 million and the rest was agreed to be jointly financed by GoN and other co-financiers. Originally scheduled to be completed by 2008, according to the 2010 report prepared by the ADB, the Melamchi project is currently scheduled for completion by 2013.

4.2 Loan Conditions

As with other developing countries, ADB's argument was that the PSP model can improve the quality and quantity of infrastructure services while reducing the burden on constrained public budgets. The ADB's structural adjustment loans and water and sanitation loans routinely included conditions requiring increased cost recovery and full cost recovery ("economic pricing") for water services. This has been the experience of Indonesia, the Philippines, Bolivia, Ghana, and Argentina in the privatization of their water sectors (Siregar, 2004)

In December 2003, ADB approved two loans to the Government of Nepal. The first Project Loan included restructuring the existing Kathmandu valley operations and establishing three separate entities each for the role of asset ownership, policy setting/ price fixing, and operation and management of services. This loan also supported the costs for "right sizing" the staff in the newly restructured utility by utilizing a voluntary retirement scheme. The second project loan was also linked to institutional reform with the aim to improve Kathmandu Valley water supply and wastewater services by introducing the PSP model for management of KUKL, via a performance based management contract (ADB, 2010).

Since the GoN entered into this agreement, there have been numerous arguments for and against this policy approach. There were calls, for example, claiming that Nepal didn't have a sufficient legal definition of water rights for all water market actors and this system would result in a system of political power that benefited

private players (Singh, 2007). Literature supports this argument where researchers have shown that privatization is not a sufficient condition to create an effective water market. Market based policies must confront issues of equity while meeting profit targets (Mollinga, 2001).

5: RESEARCH QUESTION

This paper aims to analyze the trajetory of events that unfolded after the GoN's decision to reform urban water policy according to the broad based economic reform agenda promoted by ADB. The study focuses on the urban sector because urban water has served as the testing ground for private water companies to invest due to the scope of profitability and economies of scale. Over the years, and in many parts of the world, it has become the primary battleground over which water issues are debated.

The questions that this paper aims to address are what were the key public policy issues that were contested on the GoN's urban water reform agenda? What were the policy constraints in the proposed large-scale Melamchi project and private sector participation in water resource management? How can an Advocacy Coalition Framework help us understand the water policy debate between different coaltions, their power relations, conflict of values and the subsequent acquiesence of beliefs to bring about a policy change.

6: METHODS

To analyze the debate on water management, I narrowed my focus to the most important urban area in Nepal - Kathmandu Valley. The first concern was to identify

stakeholders in the subsystem defined as the urban water sector in Nepal. For this, the public institutions that dealt with water management in Kathmandu Valley were identified. Only those public institutions that were set up specifically for water management purposes and related research were selected. New laws relating to water management, the subsequent policy reviews, and newly created government institutions for water-reforms post -democracy were included in the study. To identify stakeholders in this policy process, a series of project documents, independent studies from consultancies and other institutions, environmental impact assessment and resettlement action reports, local press clips, institutional websites, and letters from protesters were reviewed. Table 1 lists the important institutions within these coalitions and their policy beliefs.

These institutions were then grouped into distinct categories reflecting similarities in structure and belief systems such as government departments and water supplying agencies, unions, bilateral donors, multilateral financial organizations, consultant and researchers, human rights groups, civil society/ consumer groups, community/user groups and environmental groups. After review of the documents that described participants' positions, goals and beliefs these groups were then assigned to one of three coalitions that either supported or opposed private sector participation or rejected both in favor of community managed water resources. Table 2 lists the important reports and institutional websites that were used to identify the prime agendas of each participant so as to classify them into various coalitions.

Further, for the purpose of this essay, the terms privatization and private-sector participation (PSP) have been used inter-changeably. It should be noted that, though this is widely accepted in use, theoretically, privatization refers to the sale of assets to the companies in the private sector or private ownership of water related infrastructure. PSP refers to a range of contracts between the state and private companies to build, manage, and operate water infrastructure on behalf of governments. In case of Nepal, the concept proposed was PSP rather than full privatization.

Table 1

Coalition	Pro-Privatization	Anti-Privatization	Pro-Community
Deep Core Beliefs	water is an economic good	water is a human right	water is a common good
Policy Core Beliefs	Water crisis can best be handled by market forces. Efficient outcomes can be derived by pricing water correctly.	Water supply is government's obligation. Market will only benefit the rich and lead to social injustice	Community participation(in decision making or management) can help conservation and improve efficiency
Mechanism of policy change/ Secondary Beliefs	Introduce experienced international water company to manage water distribution	Train public employees and then hold the utility more accountable to deliver service	Create community user groups and facilitate management but let communities own and manage the resources, wholly or partially
Policy Participants	Ministry of Physical Planning and Works (MPPW), Kathmandu Upatyaka Khanepani Ltd (KUKL), Asian Development Bank (ADB) and other bilateral donors	Water and Energy User's Federation (WAFED-Nepal), Nepal Water Supply Employees Union (NWSEU), and Public Services International (PSI- Nepal), Melamchi Local Concern Group that includes the indigenous people	NGO FORUM for urban water & sanitation, Water-Aid Nepal, The Environment and Public Health Organization (ENPHO), and United Nations Human Settlements Program (UN-Habitat).
Resources	Sufficient capital and good backing of scientific evidence and related research. Also, budget allocated for public relations	Knowledge of indigenous people and other locals in Melamchi Valley; support by the 2010 UN-Convention that recognized water as basic human right. Insufficient captial resources	Scientific data by individual researchers as well as those funded by international non-profits, local experts and community leaders. Not much capital resources but sufficient technical evidences

Table 2

Coalition	Policy Actors	Source of Information for coding and classifying coalitions
Pro-Privatization	Ministry of Physical Planning and Works (MPPW), Kathmandu Upatyaka Khanepani Litd (KUKL), Asian Development Bank (ADB) and other bilateral donors	Government of Nepal, Melamchi Water Supply Development Board, http://www.melamchiwater.org/
		Asian Development Bank (2000).Report and recommendation of the President to the Board of Directors on a proposed loan to the Kingdom of Nepal for the Melamchi Water Supply Project. Retrieved Feb 11, 2011 http://www.adb.org/Documents/RRPs/NEP/31624-NEP-RRP.pdf
		Asian Development Bank (2008). Amended and Restated Loan Agreement (Melamchi Water Supply Project) between Nepal and Asian Development Bank. Retrieved Feb 11, 2011 from http://www.adb.org/Documents/Legal-Agreements/NEP/31624/31624-01-NEP-SFJ.pdf
		Asian Development Bank (2010). Kathmandu Valley Water Supply & Wastewater system improvement (Project Feasibility Study: Final Report): Retrieved February 12, 2011 from http://www.adb.org/Documents/Reports/Consultant/NEP/34304/34304-01-nep-tacr.pdf
Anti-privatization	Water and Energy User's Federation (WAFED-Nepal), Nepal Water Supply Employees Union (NWSEU), and Public Services International (PSI) & Melamchi Local Concern Group	Water & Energy Users' Federation Nepal, http://www.wafed.org/index.php
		Public Services International (PSI), the global confederation of public service trade unions, http://isslerhall.org/drupal/content/nepal-water-privatization-adb
		PSI Symposium of ADB (2007). Report presented by Shanta Kumar Bohara, Vice President, Nepal Water Supply Employee Union. Retrieved Feb 10, 2011 from http://www.docstoc.com/docs/17935315/Nepal-water-supply-corporation
		ADB's Responses to WAFED Letter of 27 June 2003, Retrieved February 12, 2011 from http://www.forum-adb.org/BACKUP/pdf/PDF-melamchi/3.%20ADB%20Response%20on%2027%20June%20Letter%20Matrix.pdf
Pro-Community	NGO FORUM for urban water & sanitation, Water-Aid Nepal, The Environment and Public Health Organization (ENPHO), and United Nations Human Settlements Program (UN-Habitat).	NGO Forum for urban water and sanitation, http://www.ngoforum.net/, Water & Sanitation Weekly Newsletter http://www.ngoforum.net/index.php?option=com_sbg_newsman&Itemid=3
		Water Aid Nepal, http://nepal.wateraid.org/, Community based country report retrieved Feb 10, 2011 from http://www.wateraid.org/documents/plugin_documents/wateraid_nepals_experiences_in_communitybased_water_resource_management.pdf
		The Environment and Public Health Organization (ENPHO), E-Bulletin, January - November 2010
		United Nations Environment Program (UNEP), Water & Sanitation- Publications and tools, http://www.unep.or.jp/Ietc/WS/publications.asp

7: USING THE ACF TO UNDERSTAND NEPAL'S URBAN WATER POLICY

The Advocacy Coalition Framework (ACF) is a theoretical framework for studying policy process and was developed by Sabatier and Jenkins Smith in 1993. Though used widely to predict policy changes in the developed countries, the ACF has not been applied regularly to understand policy issues in developing countries (Ainuson, 2009). But, the premise of diverse belief systems that lead to continuous challenge in power-sharing and policy formulation offers a sound theoretical framework to understand water policies in developing countries and in this case, in Nepal.

The unit of analysis in the ACF is the policy subsystem. Policy subsystems are groups of formal and informal actors who are involved actively in substantive policy issues. Their membership in the coalition is dynamic and informal. Policy subsystems are not closed like the traditional iron triangles that include bureaucratic agencies, legislators, and civil society groups but are open to include researchers and journalists who typically are considered outside the governments (Sabatier, 1988). These alliances are called advocacy coalitions and are formed around core beliefs that reflect the fundamental or philosophical values of a group. These core beliefs are the 'sticky glue' that hold the coalitions together to deal with the wicked problems (Sabatier and Jenkins-Smith, 1999). The secondary aspects of belief systems reflect operational and institutional problems associated with policy implementation. Sabatier (1999) argues that the secondary aspects of belief systems are less rigid compared to core beliefs

and often coalitions are willing to adapt secondary beliefs to meet emerging challenges and difficulties in policy development and implementation.

The ACF offers a number of hypotheses on how coalitions interact, adapt, and innovate to bring about change in the policy process. This paper aims to assess the conceptual and analytical utility of this framework to explain the water policy reforms in Nepal over the past decade since 2000. The ACF is used to identify beliefs that form conflicting coalitions, explore their differing power relationships, and characterize external perturbations and resources that have affected the policy subsystem involved in water management in the Kathmandu Valley.

The framework has a particular interest in policy-oriented learning in that it assumes that such learning is instrumental, that is, the members of various coalitions seek to better understand the world in order to further their policy objectives (Sabatier, 1988). However, the framework argues that while policy oriented learning is an important aspect of policy change and can often alter secondary aspects of coalitions' belief systems, changes in the core aspects of coalitions are results of external perturbations such as macro economic conditions or the rise of a new governing system (Sabatier, 1988). The basic idea of the ACF is that the policy actors within subsystems form alliances around core beliefs. These shared beliefs provide principle "glue" of politics and are change resistant. ACF Theory includes several hypotheses that can be used to examine advocacy coalitions and the process of policy change. But for this, a time-frame of a decade or more is important. This is because it

provides researchers opportunities to study subsystem dynamics through at least one formulation and implementation cycle and can draw a reasonably accurate picture of the program's success or failure.

7.1 The Melamchi Project

The Melamchi Water Supply Project was approved by the Asian Development Bank (ADB) in December 2000. This project aimed to transfer 170 million liters of water every day from the Melamchi River in Sindulpalchowk District to Kathmandu through a 26 kilometer (km) tunnel. The key conditions attached to the funding of this project were first, all customers were to be charged an appropriate levy on water and second, the water distribution services were to be contracted to a private water company for a certain time period on a performance based management contract.

This Project posed as an interesting case to explore international-donor-financed urban water reforms that many developing countries are fast adopting, as a policy to meet urban water challenges. To apply the ACF in this case to understand the policy process, it is important to identify the competing coalitions and their contending beliefs.

7.1.a Pro-privatization coalition

The politics surrounding the decision to approve the Melamchi Project followed a typical pattern of the centralized decision-making model prevalent in developing world water projects. The pro-privatization coalition that controlled the formulation and implementation of the Melamchi Project consisted of the Ministry of Physical

Planning and Works (MPPW), other government agencies, departments and legislators, international donor agencies such as the World Bank and Asian Development Bank, international contractors, consultants, and water management companies. This coalition promoted water as an 'economic good' or a marketable commodity. They propogated the argument that introducing private sector participation in managing this resource could solve the issues of mismanagement, lack of accountability, revenue deficits, and wasteful uses they claimed characterize the current water management system.

7.1.b Anti-privatization coalition

But within the policy subsystem there developed, albeit gradually, an advocacy coalition that contested this water reform strategy. The anti-market coalition includes human rights protection groups such as Water and Energy User's Federation (WAFED Nepal), trade union's association such as Nepal Water Supply Employees Union (NWSEU), local concern groups for the urban poor, indigenous people, and locals of the Melamchi Valley. They argued that water is a human right and that it is the government's obligation to deliver sufficient, safe, accessible and affordable water to their citizens as a public service. They challenged the pro-privatization coalition by bringing forth issues of inequality and social injustice on behalf of those who didn't have the means to pay.

7.1.c Pro-community coalition

Another set of actors are exploring the possibilities of augmenting the municipal water supply with alternate sources. This coalition consists of a group of NGOs advocating civil society participation called NGO Forum and International environmental and urban water conservation groups such as The Environment and Public Health Organization (ENPHO), Water-Aid, The International Centre for Integrated Mountain Development (ICIMOD) and United Nations Human Settlements Program (UN-Habitat). This coalition proposed to revive the traditional water supply systems. People and local communities came together and showed their eagerness in managing water resource locally through concerns, organizing and advocating for their beliefs. They advocated that if civil society is engaged in decision making and people are allowed to manage or have a say in how their water is utilized, it leads to conservation and limits wasteful behavior.

7.2 The ACF's Hypotheses

7.2.a Hypotheses 1 and 2:

The policy core attributes of the government programs are unlikely to be significantly revised as long as the subsystem Advocacy coalition which instituted the program remains in power (Weible and Sabatier, 2007).

The cores of the government action program are unlikely to be changed in the absence of significant external perturbations (Sabatier and Jenkins-Smith, 1999).

Nepal underwent two popular uprisings within a short span of sixteen years. The first popular movement of 1990 overthrew absolute monarchy and established parliamentary democracy. The second movement of 2006 caused the end of the kingship, the unitary system of government and the parliamentary constitution of 1990 (Tiwari, 2009). The time period in between these two popular movements was marked by political instability, inter-party conflicts and an insurgency launched by the Communist Party of Nepal (CPN/Maoist).

Politically, the Melamchi Project was framed in 1991 during this time of political transition when Nepali Congress (NC) emerged as the victorious party in the 1990 elections. But frequent change in government with polarized party lines on large-scale development projects proved detrimental for the Melamchi Project. This change in the political party's view of Melamchi Project is manifested in the priorities that successive governments gave to this project. The Nepali Congress Party gave a top priority to this project during their tenure from 1991 till November 1994. In between 1994 and 1999, Nepal experienced eight government changes. This started with the Unified Marxist-Leninist (UML) leading from November of 1994 to September of 1995 followed with quick formation and dismantling of seven other coalitions or minority governments formed in the leadership of NC, UML, or Rastirya Prajatantra Party (Hachhethu, 2000).

The following decade was marked with further political upheaval. In May of 1999, the Nepali Congress came back to power, but intra-party conflicts led to a

change in the prime minister from the same party after only nine months. In 2001, a massacre in the Royal palace killed eight members of the Royal family that included the king, the queen and the crown prince. The Maoist movement was taking stronger control of the country, and the new king justified this uprising to suspend parliament enforcing martial law in 2005 (Tiwari, 2009). This step was widely denounced by the Nepali people and a civil movement soon began that ousted the monarchy in 2006.

The implementation of the Melamchi Project is strongly associated with the wider political and economic interest of the Nepali political parties and the donor agencies. Pokharel (2006) describes that in Nepal, development projects are the means by which political parties gain or maintain electoral support. He adds that political leaders constantly seek to influence development projects to shape their opinions to their advantages (Pokharel, 2006). This is evident in the political stand taken by three major parties for the Melamchi Project. The NC agreed to all conditions of the donor agencies including privatization of water supply management. In spite of some reservations expressed by UML, the second largest party, against the project at the local level, there was a broad consensus among the political parties regarding the need for international loans and privatization at the national level (Hachhethu, 2000).The UML initially opposed the involvement of transnational water companies in Nepal's water management but, over the course in time, it changed its political stance on the project due to political reasons. This was because the project was to benefit the urban residents in Kathmandu Valley and UML held majority seats in the Valley

constituencies (Pokharel, 2006). So even though in between 2000 and 2006 no political party was able to hold office for the full term, the two largest parties NC and UML were largely in favor of the Melamchi Project. This reinstates the ACF's hypothesis that the core attributes of a governmental program are unlikely to be significantly revised as long as the advocacy coalition that instituted the program stays in power, in this case the NC.

However, a major turn of events took place in April 2006 when a historic people's movement ousted the monarchy and ended the 238-year long Shah dynasty. As a new republic, Nepal underwent a process of transition and change. Elections were held in 2008 to elect members for the constitutional assembly in order to write the new constitution. To the surprise of the traditional large parties, the Communist Party of Nepal/Maoists (Maobadi), the former insurgents, emerged as the largest party in the assembly. This complicated the transfer of government leadership and power-sharing between parties. A new coalition government was formed under the leadership of the Maoists and with this came a sweeping change in the political values that led the country. The Maoists' philosophy of anti-aid structured development and building local capacities for social and economical support came as negative blow for the Melamchi project. Hisila Yami, then minister for Ministry of Physical Planning and Works (MPPW), canceled the agreement with the Severn Trent British transnational water company, which was granted the contract to manage the water supply distribution in Kathmandu (Khadka, 2007). This cancellation of the contract was a

violation of the memorandum of understanding between the GoN and the ADB, and the ADB threatened to withdraw from funding the project (Khadka, 2007). All work for tunnel construction was halted and the Melamchi Project was in uncertainty. Thus, the hypothesis suggested by the ACF that an external perturbation is required to move the policy process, without which it is likely to stay put for a long time, is supported with this case. Here, the election and the resultant change in government disrupted the favorable view of the successive governments toward Melamchi. With the new communist government in power, the Melamchi Project's course of events changed. Adjustments in the Project's agreement will be discussed below.

7.2.b Hypothesis 3:

Coalition members are more likely to interact with actors they perceive as sharing their beliefs than actors who do not share their beliefs. Actors within a coalition will show substantial consensus on issues pertaining to the policy core, although less so on secondary aspects (Sabatier, 1988).

Many groups protested the Melamchi Project to safeguard their own special interests. The Environment and Public Health Organization (ENPHO)'s goal was to protect the environment, while indigenous groups and locals from Melamchi called for just compensation for their economic losses. The Nepal Water Supply Employees Union (NWSEU) pushed for trade union rights and job security. These special interest groups found a common platform with the Water and Energy User's federation (WAFED), the main advocacy group against water privatization, and jointly challenged

ADB's "Water for All" policy published in December 2005. To confront the crisis presented by the Melamchi Project, these anti-privatization groups consulted each other and expressed solidarity by conforming to the solutions proposed by other members of the coalition. For example, WAFED, the most active voice against privatization, referred to the community approach in water management as one of the alternatives to solve urban water challenges. In March 2007, the employees of Nepal Water Supply Corporation, who were typically against the proposed institutional reforms and the plans to cut down the number of employees as an effort to 'right-size', protested in the central office of Nepal Water Supply Corporation. They opposed the privatization of the corporation and demanded resignation of the management (Singh, 2007). These examples provide some evidence that coalition members interacted and cooperated with those actors they perceive as sharing their beliefs.

7.2.c Hypothesis 4:

A coalition will give up secondary aspects of its belief system before acknowledging weakness in policy core (Sabatier, 1988).

Prasad (2006) describes how the World Bank's development strategy shifted during the late 1990s from a strong reliance on private sector to a public-private partnership model (Prasad, 2006 b; ADB and Civil Society, 2009). This strategy was adopted by other donor banks including ADB, as is evident from their 'Water for All' policy published in December 2005, although this policy also deviated from the market-based orthodox policy to give considerable attention to social and

environmental costs. A formal response by the ADB to WAFED stated that the ADB had approved an extensive Environmental Assessment Report and made provision for social and environmental third party monitoring for social impacts in the Melamchi Project (ADB's responses, 2003). The ADB also approved the project restructuring proposal for the Maoist government and revised the project cost from $464 million to a total of $317.3 million in February 2008. The ADB would provides loan of $137 million and GoN would contribute $90.6 million. The remaining costs were to be filled with loans from other bilateral donors (Dixit and Upadhya, 2005).

WAFED, on the other hand, opposed the privatization proposal altogether and showed strong resistance to negotiate on their policy positions that the government, not a private actor, should manage water resources. Their alternatives to publicly supplied water was community-managed resources but they showed no flexibility to include private level participation. This is evident from WAFED's institutional website that states 'no water privatization, at any cost' as their prime message. They continue to stress public-public partnerships, good governance, and community level management to solve the water crisis.

In contrast to WAFED, community based organizations showed flexibility in their approach over time. The NGO Federation of Urban Water and Sanitation (NGOFUWS), an umbrella body of water sector players in Nepal, had an instrumental role in advocating for a community role in water management and further in campaign against Severn Trent, the British water-company that was contracted by the

government to manage water. But over time, the coalition seemed to open to some elements of private participation. For example, in an interview with *The Kathmandu Post*, the chairperson on NGOFUWS, Lajana Manandhar, said that community solutions like rainwater harvesting and stone spout conservation were short term and small scale solutions and in the long run a project like Melamchi was much needed (*The Kathmandu Post*, May 24, 2007). A policy briefing paper published by WaterAid in 2002 showed a shift in focus from mobilizing communities and civil society organizations to coordinating with multinational private companies and entrepreneurs, all of whom, , played a role in service delivery.

> Due to the huge number of poor people currently living without access to water and sanitation, there is an urgent need to increase the capacity of the sector. This will entail new organizations entering the sector. PSP has the potential of being a practical tool that governments can use to improve the delivery of services, something they may not be able to afford to do alone. (Wateraid, 2002).

The ACF states that valuable policy oriented learning can be derived when members of coalitions start to negotiate on their secondary beliefs. This policy oriented learning is instrumental in the policy process and occurs either when external events such as rise of a new governing coalition or, alternatively, when advocacy coalitions modify their beliefs and behaviors in response to activity within the subsystem (Ellison, 1998). Here the two coalitions- pro-privatization and community based, protected their policy core beliefs by making adjustments in secondary aspects of their belief systems. However, the anti-privatization coalition was less accepting of

any changes in either their core or secondary beliefs. This can be explained by another ACF hypothesis.

7.2.d Hypothesis 5:

Policy oriented learning across belief systems is most likely when there is an intermediate level of informed conflict amongst the conflicting coalitions. This requires a) each have the technical resources to engage in such debate; and b) the conflict be between secondary aspects of one belief system and core element of the other or alternatively, between important secondary aspects of the two belief systems (Sabatier and Jenkins Smith, 1997).

The ACF assumes that advocacy coalitions use a number of resources to enable them to develop strategies to influence the policy process. These resources include formal legal authority to make decisions, information, skillful leadership, or technical data to backup policy positions.

One advantage the pro-privatization coalition had over other coalitions was the backing of numerous publicly accessible research studies and technical data that supported the need for a large scale infrastructure development as a solution or the water crisis in Kathmandu. On the other hand the members of the anti-privatization and community-based coalitions only had a vision and values that privatization would bring social injustice and serve only the rich, they didn't have rigorously researched alternatives. So, to build a case for alternate water reform, members of the

community-based coalition created a common platform to pool knowledge and resources.

NGO Forum was one such organization, comprised of NGOs working on issues such as urban development, environmental conservation and poverty reduction. They started with documentation and public awareness campaigns to build a case for alternative water solutions such as groundwater recharge, conservation of traditional stone-spouts, and community-associations that managed the water points. WAFED-Nepal, for example, started an updated online resource of water related treaties, declarations, press releases, water laws, and news and articles. NGO Forum encouraged public interest by translating key documents into Nepali and enabling people to get involved in the water debate (O'Connell, 2007). Newspaper articles, newsletters, and brochures of many non-profits published stories of successful Eco homes for sustainable water management to increase public knowledge and awareness (*The Himalayan Times*, June 19, 2009). They also organized community consultations with stakeholders that included government agencies and members from donor groups. Their strategy was constant provision of information to the media to inform and engage the public (O'Connell, 2007).

The other approach to advocacy was through small infrastructure changes. Water-Aid, in their advocacy for urban water recharge, linked up with Tribhuvan University to build demonstration projects such as urban rain gardens (bowl shaped gardens) based on a traditional design that could absorb storm water run-off from

surfaces such as roof-tops and parking lots (Water-Aid, 2008). Research on characterizing and mapping slums, squatters, and public posts was conducted by NGO Forum. By getting government agencies and universities to help gather and analyze data they ensured that results were credible and not to be refuted by other government agencies.

These efforts were further supported by Nepali researchers and think-tanks that provided technical details and identified substantial opportunities that existed within Kathmandu Valley to supplement the municipal water supply. For example, the Nepal Water Conservation Foundation published reports about groundwater recharge and water harvesting techniques (Dixit and Upadhya, 2005). Many studies backed the rehabilitation of stone spouts to supply augmentation water in the Valley (Pradhan, n.d.; Joshi and Shrestha, 2008). By bringing in credible research partners to examine traditional water systems and publishing technical studies of the system with documentation of historical and existing facts and figures, these non-profits filled the gap in technical knowledge of the anti-privatization coalition.

With technical resources to back the movement for public or community managed resources, the anti-privatization coaltion called for alternatives to large-scale donor funded projects. They challenged the GoN on their reliance on empirical studies conducted by the ADB. They were also supported by the media, which revealed corruption and inconsistencies in the project. According to news in a national daily *'Rajdhani'*, the Melamchi Water Supply Distribution Board disbursed millions of rupees

to private media houses for preparing documentaries highlighting geography and environment of the project site for water transfer (*Rajdhani*, Jan 31 2011). This was supported by reports from Transparency International that stated in its Global Corruption Report 2008 that the Melamchi Project was bogged down with personal interests. While one former prime minister, Sher Bahadur Deuba, was arrested following allegations of corruption surrounding the project, another former prime minister, Girija Prasad Koirala, was accused of unauthorized use of vehicles belonging to the project and forcing the project to spend around Rs. 0.3 million monthly to hire vehicles for its consultants (*The Rising Nepal*, Feb 8, 2008).

Owing to these controversies, the GoN and the ADB were forced to revise the project's scope and scale. As described earlier, the costs were reduced from $464 million to $317.3 million. The PSP was redesigned from an asset lease contract model to a more practical performance-based management contract model. MWSP agreed to mobilize the media and engage social activists in a fact-based debate regarding the project. The Resettlement policy and compensation plan for Melamchi Valley residents increased to $5,466,600 which includes costs related to compensation, relocation, transfer costs, displacement allowances, rehabilitation costs, administrative costs, and costs of monitoring and evaluation (Resettlement Action Plan, 2009). In 2004, conflict response teams for environmental issues and community issues were formed by who to address inadequacies in the earlier contract that undervalued the environmental, social, and occupational safety issues related to the project (ADB Response, 2004).

The Melamchi Valley Project tests and affirms the hypothesis that coalition survival during implementation, especially when faced with unanticipated complexity, requires learning and the ability to adapt to changing policy conditions. In the seven years of implementation since 2001, it proved to be increasingly difficult for pro-privatization coalition to implement the ambitious original project as they faced resistance from the anti-privatization and community based coalitions. Over time the community-based coalition, agreed to look for local alternatives while agreeing that in a large-scale, private sector participation may be needed to resolve the water crisis in Kathmandu Valley. Once the community coalitions started to explore community based strategies, the anti-privatization coalition was able to join in support for alternatives to large scale infrastructure projects. This coalition has yet to agree that large infrastructure projects would ever be a solution to urban water problems. As the coalitions found their way to working on alternatives that may have challenged secondary values but not their core beliefs, action of urban water reform in Kathmandu began moving forward.

8: DISCUSSION

The ACF as a theoretical framework can be helpful to understand policy change provided there is a real public commitment to the rule of law that will allow coalitions to operate without any hindrance from the government or opposing coalitions (Ainuson, 2009). The Nepali water policy reform and privatization clause approved in 2001 was a unilateral decree from the ruling government. It was difficult for the non-

governmental organizations (NGOs) to raise concerns with the government, as Nepal was still a young democracy with no tradition of consulting civil groups. Further, the arguments of these NGOs were still ambigous and incomplete and did not even necessarily cohere to individual organizational mandates. As the stakes were high for Nepali society, a concerted effort for civil society's engagement was sought and NGO Forum, an umbrella organization of NGOs, was formed. Over time, the community-based coalition allied with the anti-privatization coalition to counter the dominant coalition that favored large scale infrastructure development and privatizaiton of water systems. They shared their common belief in advocating for poor communities. While WAFED, the anti-privatization group, never relented on their resistance to the whole concept of market reforms, NGO Forum and other community based organizations wanted to make sure that, despite the involvement of the private sector that the Melamchi Project would benefit the poor and not just middle class and economic elites. This supports the hypothesis that coalition members are more likely to interact with actors they perceive as sharing their beliefs than actors who do not share their beliefs.

The other hypothesis that was affirmed in the case study was the policy oriented learning that required coalitions to adapt to the changing policy conditions in order to push their primary agenda. The rise of the communist government, with their radically different approach to water policy, forced the pro-privatization coalition to concede their secondary belief to maintain viability of their primary policy objective.

For example the pro-privatization coalition revised their policies and opened dialogue between pro-privatization and anti-privatization coalitions when they realized that unless they acquiesced on their position, the policy process would not advance. For instance the GoN agreed to scale down the project from $464 million to $317.6 million reducing the Nepali debt load. The government's contract with Severn Trent, the British company that was given the contract to manage the water supply, was cancelled due to pressure from the anti-privatization coalition. The bidding process was then opened for local and international water management companies and the MWSDB website facilitated bidders with detailed information on the bidding process. The NGO Forum was eventually offered a place on the Kathmandu Valley Water Supply Management Board – a body formed to manage Kathmandu's water supply (O' Connell, 2007). Hence, the anti-privatization and community based coalitions, made up of civil society groups with little resources, were able to influence government policy through a concerted civil discourse. Over the years, this was strengthened with mapping of the poorer areas, technical information of water operators, and statistical data to support rehabilitation of traditional water sources, all in collaboration with local universities.

The aim of this study was to examine the gap between policy formulation and implementation and to analyze how coalitions contested, negotiated, and reorganized in response to barriers faced during policy implementation. The Melamchi Project was an ideal case to examine challenges faced by advocacy coalitions in translating policies

into action as this much hyped project was mired in controversy since its inception in 1998. The deadline of the project was revised at least three times to tackle the implementation barriers. But in August 2009, the tunnel construction part of the project was contracted out to a Chinese company, and the deadline for completing the work is now set for 2013.

9: RECOMMENDATIONS

The principle reason for the water reform stalemate in Nepal is the firm stand of each coalition to protect its core beliefs, which are basically fuelled by insecurities that if they agree to negotiate they may be stripped of those values they hold most highly. So one possible solution for this stalemate is to create a platform or venue that will be deemed favorable by all three coalitions and where different stakeholders agree to meet and exchange views. The ACF describes 'policy brokers', who work to mediate competition between the coalitions because they are seeking some policy outcome or because they have an interest in promoting political harmony. These policy brokers are typically institutions or individuals who are not connected to the subsystem and are respected as sources of trusted information (Weible and Sabatier, 2007). Many different actors can play the policy broker role such as elected officials, non-government organizations, or highly revered professionals in positions of authority. In Nepal, the international water institution Water-aid, tried to fill this role by organizing stakeholder meetings, educating citizens, translating key documents into Nepali, and working as a consultant for water reforms. But in spite of their active

participation through advocacy, consultancy and aid for water reforms, they weren't able to significantly change the course of events. This can be explained by the ACF definition of policy brokers: those who are perceived by policy-actors as neutral, essentially reside outside the subsystem. Since Water-Aid directly influenced domestic policies through its activities, it is likely that at least some stakeholders in the policy subsystem viewed them as being guided by some interest and not as an objective mediator.

Based on the evidence described in this essay and the ACF, it is recommended that the GoN should seek professional guidance from an independent and neutral body such as a prestigious university like Harvard or Oxford in situations of stalemates among advocacy coalitions. The fresh analysis and recommendations of an independent policy broker may be able to shift public attention and resources away from the stalemated positions. The ACF argues that these prestigious policy brokers are likely to be better trusted for their scientific expertise and technical evidence, which could lead to big shifts in public opinion, thus disrupting the status quo and power relations among the coalitions. The reason for not suggesting universities in Nepal is due to the general perception of domestic universities being politically influenced.

In the remaining sections of this essay, the ACF is used to examine how a neutral power broker – a respected foreign university – could reinforce the acceptability of alternatives to large-scale water infrastructure by creating alternatives

that satisfy the primary goals of each coalition. These alternatives have been studied by Nepali researchers, but have not gained much strength in the ongoing debate regarding water policy reforms.

9.1 Foreign Universities Acting as Policy Brokers

This section begins with a brief review of research conducted to support local water management systems. This is followed by a prediction of how each of the advocacy coalitions would respond to foreign university policy brokers.

9.1.a Feasibility study of aquifer recharge and rainwater storage for large-scale supply

Nepali water-experts claim that there may be enormous potential from alternative sources available to supplement water supplies in Kathmandu. Rain water harvesting is probably the most important one. The Kathmandu Valley receives an average of 1500 millimeters (mm) of rain annually (Gyawali, 2001; Shrestha, 2009). This is more than twice the world average. Rainfall data collected at one location in Kathmandu Valley between 2005 and 2009 proved that 3353 million liters per day (MLD) of rainwater falls in the Kathmandu Valley, with current water demand of about 280 million liters per day (Shrestha, 2009). Gyawali (2001) argued that even if half the rainfall evaporated or percolated into the ground, about 500 million cubic meter (cu.m) of water could still be captured, annually. Assuming an average per capita usage of 100 liters/day, if only 6% of the available 500 million cu.m were harvested, much of Kathmandu's water demand could be met if storage units were built (Gyawali, 2001).

Dixit and Upadhya (2005), two other Nepali water experts, added that the annual rainfall in Kathmandu is sufficient to meet the immediate drinking water needs but the challenge is to devise technical and institutional mechanisms that could support this. They recommend studying how recharge facilities like aquifers underlying Kathmandu can be used for large water reservoirs. Additional opportunities may exist through rooftop rainwater harvesting and pond systems.

In response to this rising interest in rain water harvesting as an alternative mechanism to meet water demands in Kathmandu, the Ministry of Physical Planning and Works (MPPW) acknowledged it as a potential water source in its 2008 report and claimed that the government was in consultation with stakeholders to draft a concept for a 'Policy on Rain Water Harvesting' (MPPW, 2008). However, the GoN considered this as a relatively new technology and mentioned that experiences in this technique of water management were largely small scale and, to apply it on a larger scale, more research was required. The GoN further expressed its interest in encouraging departments, NGOs, universities and the private sector to develop and test technologies in order to analyze the feasibility of this approach.

As a policy broker, a foreign university's research on rainwater harvesting technique and aquifer recharge mechanism will likely be deemed credible by stakeholders and may be used to reinforce or weaken the claims made by local experts. Credible technical evidences can lead to shifts in public opinion on

alternatives to inter-basin water transfer. And, it may open doors for discussion amongst coalitions, creating a venue for exchange of ideas.

9.1.b Feasibility study of Community Based Water Infrastructure

Alternative approaches, such as ground water recharge or constructing canals to feed the shallow aquifers, could successfully rehabilitate many of the dried out stone-spouts in the Valley. When the aquifer is full, working stone spouts provide a continuous source of water in neighborhoods. These stone spouts are examples of the genius of ancient engineering and are over one thousand years old. They were designed with a deep understanding of Kathmandu's geological and ecological setting and have provided water to residents for centuries. Many of them are still functional but have lost the volume and quality of water due to haphazard construction of drainage and pipelines across aquifers, which has destroyed the natural water flow pattern. There are reportedly 400 spouts in Kathmandu and if the aquifer is recharged and spouts rehabilitated, they could provide a great alternate source of water for local neighborhoods while preserving culture and heritage at the same time. Various community groups have started efforts to clean and maintain these water spouts and in the process have become water self sufficient. For example, residents of *Alkwo Hiti* in the Patan area set an example when in 2003 they rehabilitated 5 *hitis* in the area and were able to provide water for 150 households with about 250-300 liters of water every day (UN-Habitat, 2008).

Rainwater harvesting in smaller communities may also be another solution to large infrastructure projects. Theoretically, if all households collected rain water in rooftops, cisterns or tankers, enough water may be collected. This may not be practical because many traditional old houses still have thatched roof, or a large number of residents are renters and would not contribute in setting up this infrastructure. The government could invest in appropriate and cost effective techniques for individuals to store and conserve water. Wide networks of NGOs are already assisting small communities in Kathmandu to help store rainwater in artificial tankers and facilitating their acquisition of skills to manage local water.

A neutral university- the power broker- could validate the findings of Nepali researchers and communities, and provide policy makers with justification for investments that could make communities self-sufficient or provide them with opportunities to supplement their water needs.

9.2 Coalition Response to Policy Broker Mediation

If the neutral policy broker were able to bring credible research, scientists, and information to reinforce the findings of Nepali researchers and communities regarding alternatives to large-scale water infrastructure, how would the current coalitions respond? The ACF provides some suggestions of how coalition members may view alternative sources of water.

9.2.a Pro-market coalition

The pro-market coalition advocates economic efficiency and is concerned with treating water as a marketable commodity by pricing it correctly. This coalition is likely to be in favor of rainwater harvesting techniques as this will help increase water for the city to deliver to residents. Once sufficient water is available, the government can then go on to devise a progressive water pricing scheme that will ensure that the infrastructure is maintained and profits may be even made. This type of rate structure is already is practice in California where water supplies are generally limited and conservation is being promoted, by charging higher quantities of usage at higher unit rates (Jones, 2009). The intent is to provide a price signal to water users so as to minimize wasteful use while ensuring economic efficiency to meet the rising costs of waste water treatment, distribution system, and managing water resources for multiple uses (e.g. species habitat, irrigation, recreation, etc.).

9.2.b Anti-market coalition

The anti-market coalition's main argument is that everyone should have access to safe, sufficient and affordable water to live and to prosper. This value doesn't conflict with opportunities offered by a technique like rain-water harvesting because when there is sufficient water available, everyone can be supplied a minimum amount of water at minimal cost. Above this minimum quantity, water may be charged at a higher rate, but it would not contradict with the coalition's prime concern to safeguard the poor and vulnerable from market exploitation. More broadly, as this group is concerned with the human rights aspect to water, they are also concerned with the

social injustice that inter-basin water transfers could have on the poor and indigenous people living in the water-supplying basin. Therefore, if water is collected, stored, and distributed locally as proposed by mechanisms like rainwater harvesting, the water rights of poor people in rural areas will not be stripped for the benefit of the urban population.

9.2.c Pro-community coalition

An intrinsic component of rainwater harvesting is to ensure rainwater seepage for aquifer recharge. At present, excess rainwater leads to street flooding due to unplanned development and concrete floors in residential and commercial complexes. Much of the flood water finds it way to lower elevations, leaving other areas high and dry. Suitable recharge techniques, such as artificial canals or simply cleaning the numerous ponds constructed centuries ago to collect rainwater and to recharge shallow aquifers, could rehabilitate community stone spouts. The efforts of certain communities in the Patan area of Kathmandu have successfully revived these stone spouts and helped to change the government's attitude towards community managed systems. At present, with the support of international agencies like the United Nations Agency for Human Settlements (UN-Habitat) and Water-Aid, communities are honing their skills in participatory water management and conflict resolution. Augmenting water-supply in Kathmandu by harvesting rainwater for natural recharge and artificial storage units will be considered favorably by this coalition as they focus on community skill-building and local solutions.

10: CONCLUSION

In summary, a neutral policy-broker, deemed prestigious by policy makers and other stakeholders can provide a common platform for advocates from all coalitions to share and exchange ideas, learn about new and old solutions (like the stone spouts-*hitis*), and work to find answers that satisfy multiple and seemingly conflicting core beliefs. The ACF suggests that when advocates' core beliefs are satisfied, negotiating on secondary beliefs becomes easier and more likely to succeed. Water reform in Kathmandu may ultimately require inter-basin transfers and privatization of water distribution systems to provide sufficient water for the growing urban population, but many years of resistance by advocates for human and community water rights have created the opportunity for decision- and policy-makers to identify appropriate local solutions, which may satisfy the principle core beliefs of many opponents of the proposed water project. Recent movement on the Melamchi Project suggests the coalitions have found enough common ground that at least some of the energy used for resisting the Project has now shifted to finding community based solutions to the pressing water problems of Kathmandu.

REFERENCES

Ainuson, K. (2009). An advocacy coalition approach to water policy change in Ghana: A look at belief systems and policy oriented learning. *Journal of African Studies and Development, 1*(2), 16-27.

Asian Development Bank (2000). Report and recommendation of the president to the board of directors on a proposed loan to the Kingdom of Nepal for the Melamchi Water Supply Project. Retrieved on Nov 21, 2010 from http://www.adb.org/Documents/RRPs/NEP/rrp-31624-nep.pdf

Asian Development Bank (2001). Water for all: the water policy of the Asian Development Bank. Asian Development Bank, Manila. Retrieved on Jan 15, 2011 from http://www.adb.org/Documents/Policies/Water/water0500.asp

Asian Development Bank's Responses to WAFED Letter (2003). Retrieved March 2, 2011 from http://www.forum-adb.org/BACKUP/pdf/PDF-melamchi/3.%20ADB%20Response%20on%2027%20June%20Letter%20Matrix.pdf

Asian Development Bank's Response (2004). Report of the Special Project Facilitator on Melamchi Water Supply Project Nepal. Retrieved on March 5, 2011 from http://www.adb.org/Documents/Reports/SPF/SF-NEP-1820.pdf

Asian Development Bank and Civil Society (2009). Retrieved on March 3, 2011 from http://www.adb.org/Documents/Resettlement_Plans/NEP/31624/31624-01-NEP-RP.pdf

Asian Development Bank (2010). Kathmandu Valley Water Supply and Wastewater system improvement. Project Feasibility Study: Final Report). Retrieved March 5, 2011 http://www.adb.org/Documents/Reports/Consultant/NEP/34304/34304-01-nep-tacr.pdf

Bakker, K. (2008). The ambiguity of community: Debating alternatives to private-sector provision of urban water supply. *Water Alternatives, 1*(2), 236-252.

Barlow, M. (2008). Blue Covenant: The Alternative Water Future. *Monthly Review, 60*(3), 125-141.

Black, M., and Hall, A., (2004). Pro Poor water governance. Water and Poverty: The Themes. Retrieved on Dec 13, 2010 from http://www.adb.org/Documents/Books/Water_for_All_Series/Water_Poverty_Themes/Themes_04.pdf

Budds, J., and McGranahan, G., (2003). *Privatization and the provision of urban water and sanitation in Africa, Asia and Latin America*: [Human Settlements Programme], International Institute for Environment and Development.

Dixit, A., and Upadhya, M. (2005). Augmenting groundwater in Kathmandu Valley: challenges and possibilities. *Nepal Water Conservation Foundation, Kathmandu, Nepal*.

Eldidy, N. A. M. (2005).New approach to private sector participation in the water sector of Africa's developing countries. *University of Witwatersrand, Johannesburg, South Africa.*

Ellison, B. A. (1998). The advocacy coalition framework and implementation of the Endangered Species Act: A case study in western water politics. *Policy Studies Journal*, *26*(1), 11–29.

Escobar, A. (1995). *Encountering development: The making and unmaking of the Third World*: Princeton Univ Pr.

Gandy, M., and Zumla, A. (2002). The resurgence of disease: social and historical perspectives on the new'tuberculosis. *Social Science and Medicine, 55*(3), 385-396.

GoN Report. (2008). Nepal Thematic Assessment Report: Climate Change. *Ministry of Environment, Science and Technology.* Retrieved on March 12, 2011 from http://www.moenv.gov.np/NCSA/download/8_THEMATIC%20ASSESSMENT%20REPORT%20ON%20CLIMATE%20CHANGE.pdf

Gyawali, D. (2001). Missing Leg: South Asia's Hobbled Water Technology Choices. *Economic and Political Weekly*, *36*(39), 3743–3758.

Hachhethu, K. (2000). Nepali politics: Political parties, political crisis and problems of governance. *Domestic Conflict and Crisis of Governability in Nepal. Kathmandu: CNAS (Centre for Nepal and Asian Studies)*.

Hall, D., and Lobina, E. (2006). Water as a public service. *PSIRU Reports*.

Jones, P. (2009). Progressive Approach to Tiered Rates and Water, Report Cards: The Allocation-based Rate Structure. Retrieved on April 15, 2011 from http://www.assembly.ca.gov/acs/committee/c467/Progressive%20Approach%20to%20Tiered%20Rates%20and%20Water%20Report%20Cards.pdf

Joshi, H. R., and Shrestha, S. D. (2008). Feasibility of recharging aquifer through rainwater in Patan, Central Nepal. *Bulletin of the Department of Geology*, *11*(0), 41.

Khadka, N. S. (2007). Troubled Waters. *Nepali Times*. Retrieved March 2, 2011 from http://www.nepalitimes.com/issue/350/Nation/13560

Lobina, E., and Hall, D. (2006). Public-Public Partnerships as a catalyst for capacity building and institutional development: lessons from Stockholm Vatten's experience in the Baltic region.

Magar S.T. (n.d.). Water Resources in Nepal: Institutional Analysis based on legal provisions. Retrieved on April 10, 2011 from http://himalaya.socanth.cam.ac.uk/collections/journals/opsa/pdf/OPSA_09_09.pdf

Mayntz, R. (2003). From government to governance: Political steering in modern societies. *Summer Academy on IPP, Wuerzburg*, 7–11.

McIntosh, A. C. (2003). *Asian water supplies*: IWA publishing. Retrieved on September 4, 2011 from http://www.adb.org/documents/books/asian_water_supplies/asian_water_supplies.pdf

Ministry of Physical Planning and Works MPPW. (2008). *Status of rainwater harvesting in Nepal.* Retrieved on April 4, 2011 from http://www.moppw.gov.np/pdf/Status_of_RWH_in_Nepal.pdf

Mollinga, P. P. (2001). Water and politics: levels, rational choice and South Indian canal irrigation. *Futures, 33*(8-9), 733-752.

NGO Forum for Urban Water and Sanitation, Watsan Weekly News Digest. Vol. 5 # 236 – Vol. 5 # 250. http://www.ngoforum.net/index.php?option=com_frontpage&Itemid=1

O'Connell, M. (2007). Civil society organization involvement in urban water sector reform. WaterAid Case Study: Nepal. Retrieved on Jan 10, 2011 from http://www.wateraid.org/documents/nepal_case_study.pdf

Page, B. (2003). Communities as the agents of commodification: the Kumbo Water Authority in Northwest Cameroon. *Geoforum, 34*(4), 483-498.

Pant, D., Bhattarai, M., and Basnet, G. (2008). Implications of bulk water transfer on local water management institutions: A case study of the Melamchi Water Supply Project in Nepal. *CAPRi working papers*.

Pantha, R., and Sharma, B. (2003). Population size growth and distribution. *National Planning Commission, ed. Population monograph of Nepal*, 37–86.

Pokharel, B. (2006). A case study from income generation and community development programme of MWSP. Retrieved on May 5, 2011 from http://www.uni-bielefeld.de/midea/pdf/b2article1.pdf

Pradhan, R. (n.d.). *Dhunge Dhara: A Case Study of the Three Cities of Kathmandu Valley*. Ancient Nepal, Nos-116-118.

Prasad, N. (2006 a). Current issues in Private sector participation (PSP) in water services. *Development Policy Review*, *24*(6), 669–92.

Prasad, N. (2006 b). Privatisation results: Private sector participation in water services after 15 years. *Development Policy Review, 24*(6), 669-692.

Prasad, N. (2007). *Social policies and water sector reform*: United Nations Research Institute for Social Development.

Rajdhani. Jan 31, 2011. Melamchi disbursed millions in the name of documentary. Retrieved on Feb 23, 2011 from http://www.ngoforum.net/index.php?option=com_content&task=view&id=10726&Itemid=6

Resettlement Action Plan (2009). Prepared by Kathmandu Valley Water Supply Management Board and Government of Nepal. Retrieved March 11, 2011 http://www.adb.org/Documents/Resettlement_Plans/NEP/31624/31624-01-NEP-RP.pdf

Robbins, P. T. (2003). Transnational corporations and the discourse of water privatization. *Journal of International Development, 15*(8), 1073-1082.

Rogers, P., De Silva, R., and Bhatia, R. (2002). Water is an economic good: How to use prices to promote equity, efficiency, and sustainability. *Water Policy, 4*(1), 1-17.

Sabatier, P. A. (1988). An advocacy coalition framework of policy change and the role of policy-oriented learning therein. *Policy sciences, 21*(2), 129-168.

Sabatier, P. A., and Jenkins-Smith, H. C. (1999). The advocacy coalition framework. *Theories of the policy process*, 117-166.

Sharma, S. (2003). Water in Hinduism: Continuities and Disjunctures Between Scriptural Canons and Local Traditions in Nepal. *Co-Editor*, 215.

Shiva, V. (2002). *Water wars: Privatization, pollution and profit.* Pluto Press.

Singh, P.A. (2007). Water Privatization in Nepal: A fiasco or a solution. Retrieved March 2, 2011 from http://www.waterjustice.org/?mi=1&res_id=165

Siregar, P. R. (2004). World Bank and ADB's Role in Privatizing Water in Asia. *Committee for the Abolition of the Third World Debt, March, 12*, 2004.

Shrestha, R. R. (n.d.). Eco home for sustainable water management: a case study in Kathmandu, Nepal. Retrieved Feb 24, 2011 from http://www.nepal.watsan.net/page/635

Shrestha, R. R. (2009). Rainwater harvesting and ground water recharge for water storage in Kathmandu Valley. Retrieved March 6, 2011 from http://books.icimod.org/demo/uploads/tmp/icimod-water_storage.pdf#page=29

Shrestha, S., and Shrestha, B. K. (2008). The influence of water in shaping culture and modernisation of the Kathmandu Valley. *Water and Urban Development Paradigms: Towards an Integration of Engineering, Design and Management Approaches*, 183.

Tiwari, M. N. (2009). Governance Reform In Political Transition: The Case Of Nepal's Civil Service Reform. *Nepalese Journal of Public Policy and Governance, XXIV*, *1*, 1–27.

The Himalayan Times. July 5, 2009. Rain harvesting viable: Study. Retrieved Jan 4, 2011 from http://www.ngoforum.net/index.php?option=com_content&task=view&id=2775&Itemid=6

The Himalayan Times. June 19, 2009.Eco home for sustainable living. Retrieved on Jan 10, 2011 from http://www.urbwatsan.org.np/index.php?option=com_content&task=view&id=438&Itemid=39

The Kathmandu Post. December 17, 2009. Locals participate in solving water woes. Retrieved on Jan 24, 2011 from http://www.ngoforum.net/index.php?option=com_content&task=view&id=7914&Itemid=1

The Kathmandu Post. May 24, 2007. Melamchi: Yet another Arun III. Retrieved on Sep 10, 2010 from http://www.forum-adb.org/BACKUP/pdf/PDF-melamchi/Prachanda%20adb%20meeting.pdf

The Kathmandu Post. October 24, 2010. Population growth rate 'on track'. Retrieved on April 1, 2011 from http://www.ekantipur.com/the-kathmandu-post/2010/10/24/nation/population-growth-rate-on-track/214085/

UN-Habitat. (2008). Water movement in Patan with reference to traditional stone spouts. Retrieved Dec 19, 2010 from http://www.unwac.org/new_unwac/pdf/countrywise/Nepal/water_movement_patan.pdf

Upadhya, M. (n.d.). Traditional Techniques for Water Harvesting. *Water Storage*, 24.

Water Aid (2002). Private sector participation in water and sanitation. *A water aid policy briefing paper.* Retrieved Dec 2, 2011 from http://www.wateraid.org/documents/plugin_documents/psp_2002.pdf

Water Aid (2008). Water Aid Nepal's experience in community based water resource management. *Fieldwork paper.* Retrieved Dec 3, 2011 from http://www.wateraid.org/documents/plugin_documents/wateraid_nepals_experiences_in_communitybased_water_resource_management.pdf

Weible, C. M., and Sabatier, P. A. (2007). Guide to the Advocacy Coalition Framework. *Handbook of public policy analysis: theory, politics, and methods*, 123.

World Health Organization and UNICEF (2005). Water for life. Retrieved April 15, 2011 from http://www.who.int/water_sanitation_health/waterforlife.pdf