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# War Over Water: Water, Poverty, and Conflict

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War Over Water: Water, Poverty, and Conflict

By

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Spring 2006

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## Introduction:

The theme of this paper is; “What else would you do with 500 million dollars?” In a country as small and diverse as Nepal, with many immediate needs, are large scale projects really the answer at the present time? The stage that this paper will be set in is the 1990’s during the democracy and the beginning of the Maoist insurgency. Also, happening during this time was the pursuit of several large-scale projects like the Mahakali Treaty and the Melamchi Water Delivery Project. These both involved projects that would potentially bring large benefits but were also fraught with uncertainties relating to the large costs, long time period, and the question of whether, and when, the benefits would actually be realized. Nepal at the time was reeling from three decades of stagnation that had not exactly been preceded by prosperity. The people were ready for instant change in their livelihoods. What they received instead, were undelivered promises of prosperity from an abundance of large-projects that ten years down the road have not even happened.

Nepal is a country deeply rooted in Hinduism and the caste system. Although the caste system, and the discrimination that results from it, has been the root of many of the recent political movements, including the democracy movement of 1990, not much has actually been done to remedy the situation. Lower caste dalits<sup>1</sup>, and other marginalized people, still face the biggest obstacles getting access to basic needs and resources, like

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<sup>1</sup> Dalit –The lower castes and untouchables, from whom it is unacceptable for a higher caste to share water and resources, or marry.

clean water.\*<sup>2</sup> These groups saw their hopes that were born with the 1990's democracy quickly disappear in the face of corruption, inadequate representation, and inaction.

Nepal also is a country that for many outsiders is rich in water resources. Foreign banks and investors have been enticed by studies that revealed that the hydropower capacity of Nepal totaled 83,000 megawatts, of which very little is developed. The reality in the country though is another story. Waterborne diseases are one of the biggest causes of sickness in the country and many rural villagers have to walk six hours over steep, dangerous terrain to get a bucket of drinking water. On average, villagers in rural Nepal spend one hour a day, just getting water.<sup>3</sup> Even in Kathmandu, the water supply is inadequate to meet the demand, and highly contaminated by disease causing organisms. Many citizens of the Kathmandu Valley are frequently sick and spend significant sums of rupees (2,000-15,000) yearly on medicine. "Improper use of or poor access to water resources can and does adversely affect the diet and livelihoods of the poor."<sup>4</sup> Despite being "rich" in water resources, water, or the lack thereof, is actually a major cause of poverty in Nepal.

The objective of this paper is not to decide whether large-scale projects are good or bad. It is to address the relationship between urban water and poverty in Kathmandu and assess whether or not the Melamchi water project was the best solution to the problem. Since studying the relationship between water, poverty, and conflict all over Nepal is too large of a scope for a month, this paper focuses on the Kathmandu Valley

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<sup>2</sup> Karmacharya, Roshani. Founding Member, STEP Nepal. Personal Communication to Author, 17 April 2006. \*This was also said by Paras Thakuri, Fundraising Manager of Nepal Water for Health (NEWAH) in an interview on 16 May 2006.

<sup>3</sup> Thakuri, Paras. Fundraising Manager, NEWAH. Personal Communication to Author, 16 May 2006.

<sup>4</sup> Shah, Tushaar. "Water Against Poverty: Livelihood-Oriented Water Resource Management" *Water Nepal – Journal of Water Resources Development*. Volume 6, Number 1 Jan-July 1998. Editors Ajaya Dixit & Dipak Gyawali. Pp 117.

and the Melamchi project. A lot of the issues that are faced in Kathmandu are faced all over the country to different extremes, and the failure of Melamchi to come on-line in a timely and affordable fashion mimics almost all large-scale projects in Nepal. This paper uses water as a lens to explore the grassroots support for the Maoist conflict in the beginning and theorizes that if, instead of pursuing long-term, large-scale projects, the government had focused on basic needs like water and equal access for everyone, people would have had less of a cause to join the Maoist revolution.

#### Methodology:

During the course of the project I used three different methods of research. My first tactic was to visit non-governmental organizations (NGO's) and experts working in the water and urban poverty area. This led to recommendations of field sites to visit and literature to read. On field visits, I questioned the citizens about issues relating to water, like the amount of time spent sick from water-borne diseases, money spent on medicine, methods of purification, and government aid. I also asked them if they knew about the Melamchi Water Project, even if they were villagers outside of the proposed reach of Melamchi. The reason for this was to assess the impact of media and how well they were informed of the actual situation. Finally, I looked at literature on the caste system, conflict, water, and poverty to gain a background on work done in the area.

The largest constraint to my project was time. I was able to make up for some of the lack of time in the field with book research, but I did not visit as many communities as I had originally planned. To overcome this, I read a lot of publications by different

NGO's about their work with different communities and included their information in my analysis.

The reason that I chose this topic to research was the fact that most of my life I have been interested in resources like water and their distribution among the population. I have come across water in many of my subjects and have become fascinated by the relationship between poverty and water conservation. It was through my study of water conservation that I realized just how important water is in determining the livelihood of people. Since Nepal has been embroiled in conflict for the last ten years and I am a firm believer in grassroots based conflict resolution, I decided to link the two topics.

The title inspires misconceptions about the paper. Water is obviously not the only cause of conflict. It does however play an important role in the livelihood of people. This is the reason that I chose it as my lens to examine the source of grassroots support for the conflict. Despite the "potential" for water resources development, most people in Nepal lack adequate and safe drinking water, which is why water is a good example of the inability of the leaders of the country over time to address the needs of the people.

### Research Findings

#### Urban Poverty and Water – Imadol, Kathmandu a Case Study:

Imadol is a peri-urban settlement outside the Ring Road in Kathmandu. With four months in the year without a good water supply, Imadol is one of the communities worst

affected in the Kathmandu Valley by the water shortage.<sup>5</sup> Most of the residents of Imadol have dug their own shallow tube-wells for water. The government has very little presence in Imadol. Though it has built a few water taps, one next to the Subedi residence is not working<sup>6</sup> just as another one next to the residence of the family of Subitre Bhusal.<sup>7</sup> Imadol is composed of both non-Dalits and Dalits, both of whom are poor by Kathmandu standards. I am going to portray the situation and opinions of four families that I interviewed in Imadol and then analyze the role that water plays in their lives. I talked to two dalit families and two non-dalits and found several differences that I will also discuss in the larger picture of the caste system in Nepal.

The Pariyar family of Imadol belong to the Laliguras Dalit committee which helps dalits pursue their basic needs and rights. They are a large family with their own well. Their method of filtering water consists of a clay pot filled with sand, similar to commercial bio-sand filters, but homemade and less effective. Their well is muddy, even during the rainy season, and during the dry season they have to rely on other sources for water including their neighbor and the nearby river for washing their clothes. This river is no different from other rivers in Kathmandu. It runs green and slowly from sewage and other pollution during the dry season. The waterborne diseases that the Pariyars suffer from are mostly diarrhea, and they think that their dirty water probably causes most of their illnesses. Since they have an elderly member and a juvenile in their family they spend a lot on medicine, usually around 12,000 – 15,000 rupees<sup>8</sup>. They usually only

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<sup>5</sup> Subedi, Gita. Imadol Resident. Personal Communication to Author, Subedi Residence. Imadol, Kathmandu. 19 April 2006.

<sup>6</sup> Ibid.

<sup>7</sup> Bhusal, Subitre & Family, Imadol Resident. Personal Communication to Author, Bhusal Residence, Imadol, Kathmandu. 19 April 2006.

<sup>8</sup> Currently the exchange rate is about 70 rupees to the dollar

boil their water for their young one, but even after filtering and boiling they still experience problems. They would like to see the Melamchi Water Project happen and are willing to pay the 900 rupee a month cost, which is a lot for an area like Imadol. They do grow crops which depend completely on the rainwater which they also harvest and use to wash clothes and bathe. To harvest the rainwater they use everything that they can; buckets, utensils, and anything else they can find.<sup>9</sup>

Another family, the Bhusals of Imadol, are also Dalits in a similar situation. They belong to the only other Dalit committee in Imadol, the Buddha Laksmi Dalit Committee. They are sick two to three times a year, but unlike the Pariyar family they do not believe this is from the water. Their well is similar and so is their filter. They have received a little help from the government in the form of a public tap-stand in front of their house, which was constantly busy. The pipeline subsequently cut by a new house that was built nearby. When they went to the government office to get this fixed, the office said they would, yet nothing happened. The reason that the Bhusals have not spent a lot of time pursuing the tap stand is that it was given to them without any personal investment on their part, so they have no investment. The diseases they suffer from are mostly fever and diarrhea. The only time they boil their water is when they are sick. Similar to the Pariyars, they collect rainwater to wash their clothes. During the shortage season, they have two wells and if that doesn't work, they go to the river to wash their clothes. The family spends 2000-4000 rupees a year on medicine, significantly less than the Pariyar family, but this was also a smaller family. In Imadol, there are lots of non-

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<sup>9</sup> Pariyar Family, (Ranjita, Anuja, Kanchi, Sushila, Roma, Maiya, Mahesh, & Sarita), Imadol Residents, Personal Communication to Author. Pariyar Residence. Imadol, Kathmandu. 19 April 2006.

dalit groups yet there are only two dalit groups that work for basic needs. Finally, they are also willing to pay for Melamchi.<sup>10</sup>

Pratima Subedi and her family belong to the Sri Devi Mahila Samuha non-Dalit committee. Similar to other families in Imadol they are sick on average two to three times a year per person. They feel that dirty water is a cause of most of the sickness as well as dirty air. They have more methods to purify their water including Potash, a chlorine treatment, and SODIS, or solar water disinfection. Using SODIS instead of boiling their water saves 400 rupees a month. When there is a water shortage, they either pay for a water tanker to come, which is around 550 rupees a month, or they go use a neighbor's well. The amount they spend on medicine is around 2000 rupees a person for a four person family. Rainwater collection is not something that they normally do. The government also built a tap outside their house, but in their opinion it was a showcase because it does not work. Despite the fact that they are not Dalits, their water situation is still very poor, albeit not as poor as the nearby Dalits.<sup>11</sup>

Gita Subedi and her family also usually get sick around two to three times a year, mostly from waterborne diseases. Her family's medicine cost is between 15,000 and 20,000 rupees, but they have 6 members, many of whom are old and frequently sick. Their water is dirty to begin with and when there is a water shortage, they have to go get it and that water is worse. She does not use rainwater except in major shortages to wash her clothes. She also treats her water with a filter and SODIS, and in the winter they boil their water so it is warm. Her crops also depend on rainwater. She does not have a good opinion of the government. She echoes Pratima and her family in saying the taps are a

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<sup>10</sup> Bhusal, Subitre and Family. 19 April 2006.

<sup>11</sup> Subedi, Pratima, Imadol Resident. Personal Communication to Author. Imadol, Kathmandu. Subedi Residence, 19 April 2006.

government showcase. Melamchi would be good and she would be willing to pay, but she wonders “Where is it and when is it coming?” She has even gone to the Melamchi office to protest.<sup>12</sup>

The situation of these four families illustrates the role that water can play in people’s lives. All of the families depend heavily on water and suffer severely from the water shortage. At minimum the families spend 4000 rupees a year on medicine and the average is closer to 8000. They also all have to either pay for extra water during the dry season or find another source. They do not pay for their wells, but there is not a system in place to deliver and charge them for water and regulate individual users. A clean, reliable water system that they had to pay for would make their lives better, and while more expensive than a free well, the benefits in their opinions would outweigh the costs. In their mind, this water system is Melamchi, which, in reality, will not immediately benefit them. If anything, they maybe will get some of the surplus water not used within the Ring Road.<sup>13</sup>

#### Urban Water and Poverty in the Kathmandu Valley:

Many of the issues faced by Imadol illustrate the issues faced by the Kathmandu urban community. The right to water for drinking and basic cleanliness should be a human right since it plays such a large role in people’s quality of life. Yet in Kathmandu, many people do not even have access to enough water for basic needs while others excessively use their water. In many cases, this overuse is enabled by their illegal

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<sup>12</sup> Subedi, Gita. Imadol Resident. Personal Communication to Author. Imadol, Kathmandu. Subedi Residence, 19 April 2006.

<sup>13</sup> Shrestha, Dr. Roshan. UNDP, Personal Communication to Author by Phone, 23 April 2006.

drilling into the underground aquifer.<sup>14</sup> Groundwater overdraft, like what is happening in Kathmandu, can also have an effect on poverty in the form of increased costs for other users, decreased access and quality, and inequitable distribution.<sup>15</sup> The public taps found all over Kathmandu are lined with people filling up drinking water containers, washing clothes, and bathing.

Despite the fact that the people of Kathmandu could be considered rich compared to the rest of the country, they still face a serious water crisis. A study done by the NGO Forum for Urban Water and Sanitation shows the effect water has on people's livelihoods across the Valley and how poor the supply and sanitation is. In 2004, the estimated water demand of households in Kathmandu Valley was 147 million liters daily (MLD), while the supply from current systems is only 98 MLD in the wet season and 73 MLD in the dry season.<sup>16</sup> This shortage is only going to increase during the upcoming years with the estimated urban population growth of 6.6% per year. On top of that an estimated 45% of the population does not have access to a Nepal Water Supply Corporation (NWSC), and 17% of the population does not have access to piped or tap water. This difference is caused by the use of tap stands, shallow tube wells, and illegal connections or drilling into the ground.<sup>17</sup> Thirty-four percent of households in the Valley are considered poor and 63% of the unconnected households in the Valley are poor. Currently, there are around 240,000 households in the Valley, 41,000 of which have no connection.<sup>18</sup> Even the water from the NWSC is not considered safe by many standards. Many of their water sources do not have quality monitoring and only four out of fifteen of their treatment

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<sup>14</sup> Ibid.

<sup>15</sup> Shah, Tushaar. *Water Nepal*. Pp 117.

<sup>16</sup> NGO Forum for Urban Water & Sanitation, Delivering Water to the Poor pp 9-12, © 2005 NGO Forum.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

plants have modern facilities. An outbreak of diarrhea in 2004 was attributed to contaminated water from NWSC and at one point 57% of samples taken were contaminated with excess faecal coliform [sic]. Sewage was shown to be responsible for the contamination and the chlorine in the system was not enough to treat the sewage.<sup>19</sup>

Clearly there is a relationship between unconnected households and poverty. Especially in the last decade where more and more people have been moving into Kathmandu creating large slum and squatter populations. A lot of the poor are lower castes who have migrated from the rural regions for the economic opportunity of the urban environment or to escape the conflict. They are not recognized as having a right to water by the NWSC and even if they could be recognized, many still could not afford it.<sup>20</sup> Currently 7% of the city dwellers in Nepal live in squatter settlements which are characterized by limited access to basic needs and services, poverty, inadequate housing, no housing/land rights, and vulnerability to natural disasters.<sup>21</sup> The number of squatter communities has more than tripled since 1985, from 17 to 64.<sup>22</sup>

Water plays an important role in all aspects of life as shown by some of the statistics and examples from Kathmandu. Even without having to spend money on treatment for waterborne diseases because of homemade cures or some other reason, suffering from them multiple times a year is not enjoyable. Not having a reliable and clean source of water either results in sickness or money spent on filtering and boiling water. An example of the costs of boiling water is illustrated by the amount saved by

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<sup>19</sup> NGO Forum pp 13.

<sup>20</sup> Pasachhe, Bijendra, Indu Shah, Lumanti – Support Group for Shelter, Personal Communication to Author. 18 May 2006.

<sup>21</sup> “A Situation Analysis of Urban Poor Communities in Kathmandu and Lalitpur” Lumanti Support Group for Shelter – January 2001. pp 9.

<sup>22</sup> Ibid.

Pratima Subedi and her family when they used the costless SODIS method of treating water. 400 rupees a month<sup>23</sup> is 4800 rupees a year, just for the cost of boiling water. Many residents of Kathmandu cannot even afford to boil the water and usually use makeshift filters like the residents of Kopan. According to Kopan resident Jeevan K.C., around 80% of Kopan residents suffer from waterborne diseases, but usually do not seek medical treatment because they know how to handle the problems.<sup>24</sup> It does not help being a lower caste marginalized citizen since they have trouble getting their basic needs and water is one of the first things they ask for.<sup>25</sup> Clean water of adequate supply that requires no walking, is currently only a dream for most Nepali citizens. For many Nepalis in Kathmandu, Melamchi is their savior, even if they have to pay for it. The question is when is it coming and if it really is the long term answer?

#### The Melamchi Water Project – Some Benefits, Costs, and Questions:

Since 1988, the Melamchi Water Project has been on the mind of Nepal. The project is a 26.5 kilometer tunnel that diverts 170 MLD from the Melamchi River to Nepal. Also included in the project are plans for District Network Improvement (DNI), Wastewater System Improvements (WSI), and a wastewater treatment plant. Melamchi currently costs around 530 million U.S. dollars, of which the cost is split between the government (27%), loans (57%), and grants (16%). The current water tariff system will be restructured to encourage meter usage and conservation. A Low Income Consumer

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<sup>23</sup> Subedi, Pratima. 19 April 2006.

<sup>24</sup> K.C., Jeevan. Kopan Resident, Personal Communication to Author. Kopan, Kathmandu, 24 April 2006.

<sup>25</sup> Karmacharya, Roshani. 17 April 2006.

Unit will also be created to deal with the low-income consumer complaints that normally might not be addressed.<sup>26</sup>

### Benefits of Melamchi:

Despite all of the controversy surrounding it, the Melamchi Water Project has several benefits. A large problem facing the Kathmandu water supply is the leaky system and inadequate water treatment. The water and sewage pipes also run parallel to each other, and since it is a leaky water system, this causes more contamination, especially during the dry season when the water volume is lower and a suction effect from one pipe to the other pulls dirty water into the drinking water.<sup>27</sup> An example is the 2004 outbreak where 57% of the samples collected were contaminated with faecal coliform.<sup>28</sup> Estimates of the leakage rate due to system leakage, household leakages, and theft, are around 40%. Studies by outside sources like the Nepal Water Conservation Foundation (NWCF), say that the leakage even might be as high as 84%.<sup>29</sup> The DNI of the Melamchi Project is designed to rehabilitate the water delivery system, which will increase the current water supply and quality of the water.

Wasteful practices are not necessarily commonplace in Kathmandu. In fact, many Nepali citizens are far better than their Western counterparts at conservation. Still, inefficiency plagues Kathmandu, either from leaky pipes in residential homes or

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<sup>26</sup> Willey, Brent, Nilur Puri Basnyat, Ram Charitra Sah, "Kathmandu Valley Water Reform Process: Melamchi Water Supply Project" ENPHO Magazine 2004. Editor: Dr. Roshan Raj Shrestha. Pp 85-89.

<sup>27</sup> Chitrakar, Anil. Various Lectures to SIT students and Personal Communications to Author. 2 Feb 2006 to 22 May 2006.

<sup>28</sup> NGO Forum "Delivering Water to the Poor" pp 13.

<sup>29</sup> Gyawali, Dipak. Research Director, Nepal Water Conservation Foundation, Personal Communication to Author. 19 May 2006.

excessive usage of water by hotels and guest houses serving the tourism industry. While debates still surround the tariff system, one of the benefits that it could bring is encouraging the fixing of leaks and holding excessive water-users accountable.<sup>30</sup> It will also reduce the demand on underground aquifers and the water tables by unconnected tube well-users and drillers by encouraging their connection.<sup>31</sup>

There will also be several institutional reforms including the split of the NWSC into an in-the-Valley and out-of-Valley component. This will likely increase the efficiency of the utility. The reforms will create a Water Supply Management Board (WSMB), a Water Utility Operator (WUO), and a National Water Supply Regulatory Commission (NWSRC). The WSMB will own the assets and be responsible for planning investment and water supply development. The WUO will be responsible for water supply and wastewater services under a license from the WSMB, and the NWSRC will be responsible for managing and adjusting the tariff system and for monitoring the WUO.<sup>32</sup> A solid institutional infrastructure is sorely needed to manage the Kathmandu water supply, especially for the sake of the poor. “The poor and lower caste families who depend on public facilities are hit hardest by declining water tables and the deterioration of public infrastructure.”<sup>33</sup>

The current water supply of Kathmandu hardly meets half of the demand in the dry season. This is the major benefit of the project because it brings 170 MLD to a system that ideally provides 73 MLD in the dry season and 98 MLD in the wet season. With a rapidly growing urban population, increasing the amount of water available

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<sup>30</sup> Shrestha, Roshan. 23 April 2006.

<sup>31</sup> NGO Forum for Urban Water and Sanitation. “Melamchi Water Supply Project (MWSP): Its Benefits and Drawbacks.” ENPHO Magazine 2005 Editor: Dr. Roshan Raj Shrestha. Pp 54-58.

<sup>32</sup> Ibid.

<sup>33</sup> Shah, Tushaar. Pp 122.

coupled with demand side management (DSM) is essential. The project will also have the Low-Income Support Committee Unit (LISCU), which will address the issues of people living in slums, squatter communities, and renters. Looking at these benefits, the Melamchi Water Project is quite attractive, but as they teach you in basic economics, there is no such thing as a free lunch.

#### Costs, Risks, and Uncertainties:

When the Melamchi project first was discussed in the late 1980's, the need for it to come online in a timely fashion to satiate an ever-increasing demand was relatively urgent. Now it is 2006 and there is skepticism that by the time it comes online, it will be obsolete and there will be a need to look for another project. The major question about Melamchi is when? Since the project was first visualized, the country has experienced a major democracy movement, a democracy with several different leaders, a civil war, an absolute monarchy, and another democracy movement leading to a new democratic government composed of old leaders. Promise after promise has been made about Melamchi as it has been a major topic of discussion since its inception.

The uncertainties caused by the timetable of the project are the cause of many complaints with the project. The first example would be the Melamchi tunnel, a 26.2 kilometer long tunnel to bring water from the Melamchi River. Historically, the fastest a tunnel has ever been drilled in Nepal is two kilometers per year, and the slowest was ½ kilometer per year, so if history is any judge the fastest Melamchi could finish would be

in 15 years.<sup>34</sup> This is why there is still international bidding for work on the tunnel, but still the most optimistic outlook is a 2010 completion and more likely at least six or seven years.<sup>35</sup> Originally, promises to the people, albeit unrealistic and politically motivated, were made for Melamchi to be completed in the early 1990's.<sup>36</sup>

Another consequence of the time Melamchi has taken is the higher cost of the project, increasing from \$464 million to as much as \$531 million.<sup>37</sup> On top of this, citing the royal takeover in 2005, many donors withdrew their funds, the latest being Sweden and Norway, who had contributed \$25 and \$28 million, respectively.<sup>38</sup> However, since the royal surrender, many donors have come back to the project and many hope that Melamchi will finally come online without any further delays. But, in a country like Nepal, where political stability is a question mark, the withdrawal of funds adding to the delays is just another example of potential risks of long-term projects.

Some other drawbacks of Melamchi include the high percentage of loans, which are borne by residents of Kathmandu in the form of increasing tariffs, which could adversely impact the poor and their ability to connect to the system. Also, loan requirements require a foreign Managerial Contractor, which is about half the 25.77 million dollar institutional reform budget. This cost could easily be replaced by an improvement in the current water institution.<sup>39</sup>

Melamchi also has shortfalls when it comes to the budget for wastewater treatment. The project is designed to rehabilitate current treatment plants and set up

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<sup>34</sup> Gyawali, Dipak. Personal Communication to Author, 19 May 2006.

<sup>35</sup> Shrestha, Roshan. Personal Communication to Author, 21 May 2006.

<sup>36</sup> Ibid.

<sup>37</sup> NGO Forum "The Melamchi Water Supply Project: Its Benefits and Drawbacks" pp56.

<sup>38</sup> Khanal, Prem. "Sweden Withdraws Funds for Melamchi" *The Kathmandu Post*. 4 April 2006, pp 1.

<sup>39</sup> "The Melamchi Water Supply Project: Its Benefits and Drawbacks" pp 56.

groups to advocate and monitor water quality, as well as some policy development. The problem is the fact that only 4% of the total Melamchi budget is allocated to waste water system improvements which underscores the “overall lack of importance given to this issue.”<sup>40</sup> As illustrated in the case of the outbreak of diarrhea mentioned above, wastewater treatment is important in insuring water quality, especially when the pipes are parallel to each other.

Finally, with respect to the poor, there is uncertainty whether or not enough attention is being given to the poor with the LICSU. The contract for the Melamchi project is six years, but the LICSU is only three, which raises questions about the official attitude toward the poor.<sup>41</sup> Supplying water to the residents of Kathmandu with Melamchi is a good thing, but forgetting about the needs of the urban poor would be repeating the mistakes of the past, yet again.

Wrought with uncertainties, questions surround Melamchi. Its treatment of the poor is assessed by many to be inadequate and some people have questions about the feasibility of the 6-7 year timetable. And is Melamchi’s impact going to be large enough to justify its costs? Initially, the benefits of the project are only going to be felt inside the Ring Road of Kathmandu, with the surplus water, if any, going to people outside the Ring Road. Could 500 million dollars be spent in another way like rainwater harvesting? It is estimated by some that in the 600 square kilometer Kathmandu watershed, 1200 millimeters of rain falls yearly. To catch three percent of this rainfall, which would provide enough water to rival Melamchi, only one and a half percent of the land area

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<sup>40</sup> Ibid pp 58

<sup>41</sup> Ibid.

would be needed.<sup>42</sup> Would 500, one-million dollar rainwater harvesting projects provide more employment and faster results? Some small-scale, community run programs have had a lot of success in Kathmandu. A UN Habitat, funded program in Siddhipur, with a budget of \$250,000, supervised by the citizens of Siddhipur, is going to provide clean water and sanitation for 6000 people. This project will be finished by September.<sup>43</sup> After seeing the price tag of Melamchi and the years of delay the question is were there better alternatives when Melamchi first came up?

#### Maoists and Melamchi – Grassroots Support for the Movement:

What causes a war? Are wars fought over religion? Are all wars caused by terrible dictators and led by genius madmen? Why do thousands of people commit themselves to Al-Qaeda daily? What caused the Maoist army to go from a ragtag group of rebels to a large guerilla army?

In Nepal, there is a lot of discrimination both against women and lower-castes (dalits). Over the course of the last century, more and more attention was given to the discrimination against dalits. During the movement for democracy of 1990, dalits' rights were a major championing point, yet when it was finished, dalits had one representative in the government. Following this, the dalits had no choice but to watch as the government changed hands again and again and bickered over everything, especially the Mahakali treaty. There was no real change from the previous government with respect to bringing the dalits a relief from discrimination and access to their basic needs, like clean

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<sup>42</sup> Gyawali, Dipak. 19 May 2006.

<sup>43</sup> Shrestha, Dr. Roshan, 21 May 2006.

and reliable water. "...the current crop of Nepal's political leaders have not attempted a conscious shift in their water policies that is fundamentally different from that of the Panchayat rulers."<sup>44</sup>

Access to anything is hard for dalits because of the upper-castes' fears that they will contaminate everything. Most discrimination occurs over water and temples. The constitution forbids discrimination against dalits, but this is hardly ever enforced. "No person shall, on the basis of caste, be discriminated against as untouchable, be denied access to any public place, or be deprived of the use of public utilities. Any contravention of this provision shall be punishable by law."<sup>45</sup> Promises are made again and again by the government to reduce this discrimination, yet it happens again and again. "Dalits are regularly segregated away from public facilities. In the Baniyar section of Bardiya district in the Mid Western [sic] Region of the country, Dalits were denied access to a public water tap, despite the fact that the majority of families in that neighborhood were lower caste."<sup>46</sup> Continued discrimination on the basis of caste toward dalits and empty government promises left dalits looking for alternatives.

Women are also highly discriminated against in Nepal. Many in rural villages are sold into the sex trade at young ages, while many others spend their whole lives doing household chores. Most of the walks of up to six hours to get water, mentioned earlier, are done by women.<sup>47</sup> Women in Nepal face gender discrimination through the denial of

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<sup>44</sup> Gyawali, Dipak. *Rivers, Technology, and Society*. Himal Books, Kathmandu Nepal © 2003 pp 26.

<sup>45</sup> Constitution of the Kingdom of Nepal, 2047 (1990), Article 11(4). From: <http://hrw.org/english/docs/2004/02/09/nepal7322.htm> Accessed on 10 June 2006.

<sup>46</sup> Dipendra Baduwal, "Dalit families forbidden to use public water-tap," *Kathmandu Post*, 20 December 2002, paraphrase from <http://hrw.org/english/docs/2004/02/09/nepal7322.htm> Accessed on 10 June 2006.

<sup>47</sup> Thakuri, Paras. 16 May 2006.

access to resources; having no control over resources or no benefits from resources; restricted mobility, and low representation in decision-making positions in all sectors.<sup>48</sup>

People in the West, when they read the National Geographic article and saw thirteen year old Maoist girls carrying AK-47's and sawed off shotguns, all wondered why? Even during the course of the whole civil war, plenty of people in Kathmandu wondered the same thing. "We in Kathmandu could not grasp the sheer appeal of Maoist ideology in the poverty stricken countryside."<sup>49</sup> With constant discrimination against them, high unemployment, long walks to get water, and nobody listening, what else was there for them to do? "The lesson that people learned was that if they wanted something from the government, they would have to get militant, because the leaders of the political parties would not listen to anyone who asked for anything nicely."<sup>50</sup> While the inability of the state to link itself to the real majority of the population was festering in the country, and high failure rates in the School Leaving Certificate examinations were leading to more unemployment, Maoist leaders like Baburam Bhattarai were establishing linkages with local bases so that when it came time to start the People's War, they'd have a base.<sup>51</sup>

While the democratic government was changing hands yearly and fighting over agreements, they kept promising that projects like Melamchi would happen. While Melamchi might bring a lot of benefits, they are a long way down the road and will benefit the minority of the country. Most of the Maoist's support was from the rural

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<sup>48</sup> "Gender" Action Aid Nepal <http://www.actionaid.org/nepal/> Accessed on 10 June 2006.

<sup>49</sup> Thapa, Manjushree. *Forget Kathmandu: An Elegy for Democracy*, Penguin Books, New Delhi, India. © 2005 pp 134.

<sup>50</sup> Thapa, Manjushree. Pp 132.

<sup>51</sup> Pfaff-Czarnecka, Joanna. "High Expectations, Deep Disappointment" *Himalayan People's War: Nepal's Maoist Rebellion*. Indiana University Press, Bloomington, Indiana, 2004. Editor: Michael Hutt, pp 170-171.

areas, which will not be helped by Melamchi. While urban poverty does not illustrate the direct support for the Maoists because the supports came from rural areas, it illustrates the inability of the government to address the direct needs of the people in an efficient manner. This disconnect between Melamchi and the immediate needs of the urban poor is just one example in a much larger picture encompassing many different ethnic groups living in varied geographies all over Nepal. This disconnect has existed for 300 years in various forms from autocratic to feudal to democratic governments, and the Maoists and their “people’s” movement was a fresh alternative.

#### Conclusion:

Is Melamchi responsible for the Maoist movement starting? No. Is Melamchi one of the 40-point demands of the Maoists? No. What Melamchi is, is a symbol of the broken promises, government naiveté, and decades of failed development for the people while the government was preoccupied with dreams of hydro-dollars. The inability of Melamchi to come online and to effectively address the needs of a large population illustrates the conflict between long timetable projects with large benefits and risks, and the people’s need for immediate improvement in their livelihoods. At the same time, though it is not as simple as small is beautiful and large is ugly it is more a question of risk.<sup>52</sup> In a country like Nepal, the people would love the benefits of Melamchi, if they were there tomorrow, but the people have waited 17 years for Melamchi, just like they waited for Kulekhani and other projects. Melamchi is also a project that will take up

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<sup>52</sup> Gyawali, Dipak. 17 May 2006.

90% of the funding for the water sector, leaving only 10% for the rest of the country.<sup>53</sup>

The fact that Melamchi has been promised and people who might not even benefit like Gita Subedi of Imadol, are eagerly awaiting its arrival, illustrates the power of the government and media. The problem is that only so many promises can be made and broken before people look for alternatives, and in 1996 that alternative happened to be the Maoist revolution.

### The Future:

At this point, it is tough to argue against Melamchi continuing. The reasoning is that now there is a government that potentially could be held accountable and most of the foreign donors have returned. Not to mention the considerable amount of money already invested in the project. Also, the question is if they start over on another project, how long will the new one take?<sup>54</sup> Now, unlike the early 1990's, there is a strong civil society that can hold Melamchi accountable and make sure it is efficient, as evidenced by the NGO Forum of Urban Water and Sanitation's monitoring and many publications written about the project. Still, questions about the rest of the country need to be addressed in a hurry, and not by large projects. People need employment and immediate results and a series of small projects all over the country provide these. "Treat such 'mega' projects as projects of the last resort, to be undertaken only after considering all other possibilities such as local water conservation, watershed development, small projects, etc., and after

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<sup>53</sup> Manandhar, Lajana. "Diverting Melamchi to Kathmandu: Pain or Pleasure?" *City Care Cleaner Communities* A Lumanti Newsletter, March 2005. pp 1-2

<sup>54</sup> Shrestha, Dr. Roshan. Personal Communication to Author. 21 May 2006.

making a careful evaluation of all options.”<sup>55</sup> Other projects to address Kathmandu’s water needs, like rainwater harvesting and demand side management (DSM), should also be pursued side by side with Melamchi. This way the water problem is addressed long into the future and if Melamchi fails there will a back up. The people’s needs must not be ignored, and employment created because there is a restless, unemployed young generation who protested in the final days of the movement because they were bored and still will continue if given the slightest cause. “Unless we find jobs for this restive and angst-filled generation, it will be impossible to establish sustainable peace. Many are internally displaced by the insurgency and counter-insurgency. They have no family, no jobs and no hope. Now they have no cause either.”<sup>56</sup> A good way to start giving this young generation jobs is a series of small projects to address basic needs like clean water, potentially killing two birds with one stone. The question the new Nepali Government should ask themselves is what should we do with our next 500 million dollars?

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<sup>55</sup> Iyer, Ramaswamy R. “Water Projects in Trouble: What Lessons?” *Water Nepal: Journal of Water Resources Development*. Volume 6, Number 1. Jan-July 1998, Editors: Ajaya Dixit and Dipak Gyawali, pp 10.

<sup>56</sup> Lal, C.K. “Fear of the Future” *The Nepali Times* from <http://nepalitimes.com/issue/300/StateoftheState/11918> accessed on 10 June 2006. Editor Kunda Dixit.

## Bibliography:

- “A Situation Analysis of Urban Poor Communities in Kathmandu and Lalitpur” Lumanti Support Group for Shelter – January 2001. pp 9.
- Bhusal, Subitre & Family, Imadol Resident. Personal Communication to Author, Bhusal Residence, Imadol, Kathmandu. 19 April 2006.
- Chitrakar, Anil. Various Lectures to SIT students and Personal Communications to Author. 2 Feb 2006 to 22 May 2006.
- Constitution of the Kingdom of Nepal, 2047 (1990), Article 11(4). From: <http://hrw.org/english/docs/2004/02/09/nepal7322.htm> Accessed on 10 June 2006.
- Dipendra Baduwal, “Dalit families forbidden to use public water-tap,” *Kathmandu Post*, 20 December 2002, paraphrase from <http://hrw.org/english/docs/2004/02/09/nepal7322.htm> Accessed on 10 June 2006.
- “Gender” Action Aid Nepal <http://www.actionaid.org/nepal/> Accessed on 10 June 2006.
- Gyawali, Dipak. Rivers, Technology, and Society. Himal Books, Kathmandu Nepal © 2003 pp 26.
- Gyawali, Dipak. Research Director, Nepal Water Conservation Foundation, Personal Communication to Author. 17 May 2006.
- Gyawali, Dipak. Research Director, Nepal Water Conservation Foundation, Personal Communication to Author. 19 May 2006.
- Iyer, Ramaswamy R. “Water Projects in Trouble: What Lessons?” *Water Nepal: Journal of Water Resources Development*. Volume 6, Number 1. Jan-July 1998, Editors: Ajaya Dixit and Dipak Gyawali, pp 10.
- Karmacharya, Roshani. Founding Member, STEP Nepal. Personal Communication to Author, 17 April 2006. \*This was also said by Paras Thakuri, Fundraising Manager of Nepal Water for Health (NEWAH) in an interview on 16 May 2006.
- K.C., Jeevan. Kopan Resident, Personal Communication to Author. Kopan, Kathmandu, 24 April 2006.
- Khanal, Prem. “Sweden Withdraws Funds for Melamchi” *The Kathmandu Post*. 4 April 2006, pp 1.

- Lal, C.K. “Fear of the Future” *The Nepali Times* from <http://nepalitimes.com/issue/300/StateoftheState/11918> accessed on 10 June 2006. Editor Kunda Dixit.
- Manandhar, Lajana. “Diverting Melamchi to Kathmandu: Pain or Pleasure?” *City Care Cleaner Communities* A Lumanti Newsletter, March 2005. pp 1-2
- NGO Forum for Urban Water & Sanitation, Delivering Water to the Poor pp 9-12, © 2005 NGO Forum.
- NGO Forum for Urban Water and Sanitation. “Melamchi Water Supply Project (MWSP): Its Benefits and Drawbacks.” ENPHO Magazine 2005 Editor: Dr. Roshan Raj Shrestha. Pp 54-58.
- Pariyar Family, (Ranjita, Anuja, Kanchi, Sushila, Roma, Maiya, Mahesh, & Sarita), Imadol Residents, Personal Communication to Author. Pariyar Residence. Imadol, Kathmandu. 19 April 2006.
- Pasachhe, Bijendra, Indu Shah, Lumanti – Support Group for Shelter, Personal Communication to Author. 18 May 2006.
- Pfaff-Czarnecka, Joanna. “High Expectations, Deep Disappointment” Himalayan People’s War: Nepal’s Maoist Rebellion. Indiana University Press, Bloomington, Indiana, 2004. Editor: Michael Hutt, pp 170-171.
- Shah, Tushaar. “Water Against Poverty: Livelihood-Oriented Water Resource Management” *Water Nepal – Journal of Water Resources Development*. Volume 6, Number 1 Jan-July 1998. Editors Ajaya Dixit & Dipak Gyawali. Pp 117.
- Shrestha, Dr. Roshan. UNDP, Personal Communication to Author by Phone, 23 April 2006.
- Shrestha, Dr. Roshan. UNDP, Personal Communication to Author by Phone, 21 May 2006.
- Subedi, Gita. Imadol Resident. Personal Communication to Author. Imadol, Kathmandu. Subedi Residence, 19 April 2006.
- Subedi, Pratima, Imadol Resident. Personal Communication to Author. Imadol, Kathmandu. Subedi Residence, 19 April 2006.
- Thakuri, Paras. Fundraising Manager, NEWAH. Personal Communication to Author, 16 May 2006.
- Thapa, Manjushree. Forget Kathmandu: An Elegy for Democracy, Penguin Books, New Delhi, India. © 2005 pp 134.

Willey, Brent, Nilur Puri Basnyat, Ram Charitra Sah, “Kathmandu Valley Water Reform Process: Melamchi Water Supply Project” ENPHO Magazine 2004. Editor: Dr. Roshan Raj Shrestha. Pp 85-89.

Other Books and Interviews Used But Not Cited in the Body:

- Dixit, Kanak Mani, Shastri Ramachandaran, State of Nepal Himal Books, Lalitpur, Nepal. 2002
- Dixit, Ajaya, Dipak Gyawali Water Nepal A Journal of Water Resources Development Volume 9/10 July 2001-July 2003, Nepal Water Conservation Foundation, 2003.
- Gyawali, Dipak & Ajaya Dixit, “Mahakali Impasse: A Futile Paradigm’s Bequested Travails” Domestic Conflict and Crisis of Governability in Nepal Center for Nepal and Asian Studies – Tribhuvan University, Kathmandu, Nepal, 2000, Editor Dhruva Kumar, pp 236-303.
- Thapa, Deepak. Understanding the Maoist Movement of Nepal. Kathmandu, Martin Chautari, Centre for Social Research and Development, 2003
- Shrestha, Arinita M. Program Manager, Environment and Public Health Organization. ENPHO. Personal Communications to Author, 3 April 2006 & 5 April 2006.
- -These interviews were used for another paper but helped me figure out my ISP and paint a picture of some of the water issues in Nepal