

**THE ROLE OF DEVELOPMENT INDUCED PROJECTS IN THE
SPREAD OF HIV /AIDS: THE CASE OF GILGEL GIBE
HYDRO- ELECTRIC PROJECT IN JIMMA ZONE**

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Lists of Acronyms

- CSA: Central statistics Authority
- EELAP: Ethiopian electric light and power Authority
- GGHP: Gilgel Gibe hydroelectric project
- ILO: International labor organization
- IOM: International organization of migration
- MOA: Ministry of Agriculture
- MOH: Ministry of Health
- MOME: Ministry of Mine and Energy
- PLWHA: People Living with HIV/AIDS
- SAfAIDS: Southern Africa HIV/AIDS Information Dissemination Service
- UNICEF: United Nations Children's Fund
- UNDP: United Nations Development Program
- UNAIDS: Joint United Nations Program on HIV/AIDS

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Abstract

The purpose of this research is to examine the role of development induced projects in the spread of HIV/AIDS: the case of GGHP. The study is specifically intended to assess the contribution of the project to the emergence of factors aggravating the vulnerability of the workers to HIV/AIDS by increasing risk behavior of workers of the project on the one hand and the efforts made by the project to rescue its workers from the risk of being infected by HIV on the other. Therefore, the objective of the study is to understand level of awareness of the workers about HIV/AIDS and to assess contribution of GGHP for vulnerability and risk behavior of workers of the project to HIV/AIDS and to know interventions taken to reduce the risk of the workers. The study has a considerable significance in the contribution of anthropological insight to the issue, and also provides information for all concerned bodies in mitigating the problem. Data for the study was collected both from primary and secondary sources. Methods used in the study are interview, observation, focus group discussion, key informant interview and survey method.

The key findings of the study revealed that although the majority of the workers of GGHP have knowledge about HIV/ADS, a significant number of the workers still have a great confusion about HIV/AIDS. The workers' level of schooling and their opportunities of media access have played decisive role in their knowledge of HIV/AIDS. The study also indicted that some workers of the project do not perceive HIV/AIDS as one of the major health problems in their community, and also they do not believe healthy looking person can carry HIV virus.

The study also focused on factors which aggravate the vulnerability of the workers to HIV/AIDS, which has been emerged by GGHP to the area. It was found that commercial sex work has been rapidly increasing in the area; because of the nature of the work and their current living arrangement the workers developed the habit of alcohol consumption; there has been non-condom use in casual sex and multiple sexual partner among workers of the project. In addition, the study also indicated that the economic deprivation of women and misconception of the workers about HIV/AIDS could aggravate vulnerability of the workers to HIV/AIDS. These workers visit their families and relatives during holydays. Their families, spouses and girlfriends are also potentially in danger. Nevertheless, GGHP has not given attention to prevent the potential danger of the spread of HIV/AIDS among its workers. The only service given by the project to its workers has been making condom access to them without any sensitization to use it.

Finally, the study concluded that in spite of the variability and risk its workers develop to be infected by HIV, the GGH project did not give due attention for health facility of the workers; and the consideration given to HIV/AIDS prevention by the project is weak. There is no advocacy work, no education given to the workers about HIV/AIDS transmission and preventive mechanisms. In general, the workers have not been sensitized; have not had appropriate information and motivation to utilize preventive mechanisms in order to protect themselves from HIV infection. This fact shows that unless great care is taken, development projects can fuel the spread of HIV/AIDS.

Chapter One

Introduction

1.1 General Background

HIV/AIDS has been one of the severe global problems, which seriously threatens humankind since its emergence. It is the current global problem that challenges the daily life of individuals up to a great crisis at national level. According to UNAIDS report (2004), in almost 20 years of its emergence, HIV/AIDS has brutally threatened all human races at every corner of the world without exception and segregation.

The impacts of HIV/AIDS are not only health and individual life endangering but also social, economic and political matters which affects different sectors and even the state. Therefore, it is not only the concern of an individual or certain group in a society to tackle the problems of HIV/AIDS; rather it should be the most concerns of all; the individuals', governments' and non-governmental organizations' in the globe.

Different researches and reports on the issue (UNAIDS, 2004; Ethiopian Ministry of Health, 2000) demonstrate that the threat of HIV/AIDS is greater in developing countries than developed ones. The suggested reasons are that, because of poverty, weak economic capacity of these countries, continual conflicts and some harmful traditional practices (such as female genital mutilation, cut on the body), the destruction by HIV/AIDS is found high.

So far, HIV/AIDS has no cure vaccination or effective curing and protecting medical or other treatment. The usual strongly recommended ways of prevention of HIV attack is mainly through controlling its spread

and treating those who are already been infected. One of the effective ways of HIV/AIDS prevalence hindrance is by reducing the vulnerability and risk behavior of the people.

As different studies indicate (UNDP, 2000; Jackson, 2002), migration and mobility of people are one of the significant factors which facilitate the spread of HIV/AIDS. This is because migration and mobility aggravate the vulnerability and risk behavior of people to HIV/AIDS. Of the reasons why people move or migrate from place to place doing business and search for employment opportunities are the known ones.

Similarly, the Gilgel Gibe Hydroelectric Project mobilizes people for working opportunity. The main intention of this paper, therefore, is to examine whether this development project has any role in aggravating spread of HIV/AIDS. This can be by studying the vulnerability and risk behavior of these migrant workers of the project and the surrounding community by using different indicators and relations.

This research paper is organized into six chapters. The first chapter, the introductory part, contains statement of the problem, data analysis, objectives, significance and methods of the study. Chapter two revises the related literatures to the topic of the study and chapter three presents the general background of the study area. The rest three chapters present the findings, summary and conclusions of the study. Thus, chapter four of the study discusses the knowledge and awareness of workers of GGHP about HIV/AIDS, while chapter five deals with factors which aggravate the vulnerability of workers of the project to HIV/AIDS and the emergence of these factors to the area. The final

with multiple partners and unprotected (unsafe) sexual relations. This risk behavior can be reduced (controlled) by the intervention activities in the work place. One of the reasons for movement/migration of people from one place to another is to search for employment opportunities.

Different global studies indicate that development projects fuel the spread of HIV/AIDS. The studies conducted on mining in Africa (Schoof, 1999; Jackson, 2002; UNAIDS, 2004), in China on dam construction (UNDP, 2001), in Indonesia (ILO, 2001), and in South East Asian by UNDP (2000) depicted that unless serious care is taken, development projects fuel the spread of HIV/AIDS since it mobilizes people from different area to the site for employment. The studies remarked that the link between migrant workers and HIV/AIDS is related to the conditions and structure of the migration process, including poverty, exploitation, separation from families and partners, and separation from the socio-cultural norms familiar to them. Some of the factors that make mobile populations more vulnerable to HIV infection are: geographical isolation from their society, weak interaction due to differences in languages and culture; separation from regular sexual partners; lack of support and friendship; sense of anonymity; lack of access to health and social services. The studies concluded that due attention should have been given to protect such potential danger of the spread of HIV/AIDS in the work places or project site.

This might be also true in Ethiopia that currently there are many development projects which mobilize and cause moving thousands of people from rural and urban area to the project site. Gilgel Gibe development project is one of such development projects which mobilize workers from different parts of the country. However, in Ethiopia

researchers have not given due attention to the issue. Except the pilot survey by Oromiya HIV/AIDS Prevention and Control Office conducted in Jimma zone, no research has been conducted on the contribution of development projects in spread of HIV/AIDS. And the pilot survey shows that there is high prevalence of HIV/AIDS in the area of GGH project more than other areas in Jimma Zone. Based on this reasons I found that conducting anthropological study on the role of development projects, in the spread of HIV/AIDS has considerable importance to give information on the seriousness of the problem and can sensitize policy makers to give due attention to the problem.

Therefore, the purpose of this paper is to study whether Gilgel Gibe Hydroelectric Project creates favorable conditions for the emergence of factors which aggravates vulnerability of people to HIV/AIDS and contributes to spread of HIV/AIDS by developing risk behaviors of the communities. Furthermore, the focus of the paper is also to assess the necessity of interventions, and give information to the concerned body.

1.3 Objectives

1.3.1 General Objective

The general objective of this paper is to explore the role of Gilgel Gibe Hydroelectric project in spread of HIV/AIDS through creating factors, such as commercial sex, alcohol consumption, which aggravate vulnerability of people to HIV/AIDS; and to give information on the contribution of development projects to the spread of HIV/AIDS.

1.3.2 Specific Objectives

1. To understand whether factors aggravating vulnerability and risk behavior of workers of GGHP are emerged to the area.

2. To assess vulnerability and risk behavior of these workers.
3. To understand the level of awareness of the workers of GGHP about HIV/AIDS.
4. To identify whether there is intervention to reduce the spread of HIV/AIDS.

1.4 Significance of the Study

Currently many projects, which are contributing a lot to national economy, have been operated in Ethiopia. These projects mobilize workers from different parts of the country to the project sites because of the employment opportunities they create. The experiences of other countries show that in addition to their great contributions the well being of a country, development projects contribute also to problems such as the spread of HIV/AIDS. But currently in Ethiopia researchers have not given due attention to the issue. Because of this fact there is a shortage of information on the contribution of development projects, such as GGHP, in the spread of HIV/AIDS.

Therefore, this paper is intended to assess the contribution of GGHP to the spread of HIV/AIDS among the workers of the project and the community. Hence, I believe that this study will give the anthropological insight into the contribution of development induced projects in general and that of the GGHP in particular to the spread of HIV/AIDS. Furthermore, the findings of the study will also provide pertinent information to policy makers, governmental and non-governmental organizations, and any concerned body to mitigate the spread of HIV/AIDS. It also gives information for interested individuals who want to conduct further studies on this issue.

1.5 Research Methods

The study has been conducted in the periods from February 2007 to May 2007 at the site of GGH project and other important places in Jimma Zone. In conducting this study, I employed a combination of different research techniques of both qualitative and quantitative methods. These techniques are focusing on primary and secondary data collection. The primary data is collected through field work using interviews, observation, focus group discussions, key informants interviews, and survey technique.

The primary data for this research was collected from Gilgel Gibe Hydroelectric Project and its surrounding community through field work. The participants of the research include workers and officials of the project, officials of health center of Sekoru wereda, commercial sex workers of Sekoru and Deneba towns, and community leaders. Hence five group discussions, interview of seven individuals, interview of three key informants and survey of 341 respondents were conducted. In general officials of the project, health workers, workers of the project, the community and commercial sex workers were targets of the study.

In Interview technique, I applied semi structured and unstructured interview. In this technique, formal and informal interviews were conducted to collect first hand information on the role of Gilgel Gibe Hydroelectric Project in the spread of HIV/AIDS. Through this technique detailed and exact data about the issue was obtained. The interviews involved different categories of people in the community; workers of the project, officials, community leaders and commercial sex workers.

Observation was also the technique used to collect data in the study. The technique was employed to observe and note the risk behavior and vulnerability of the people to HIV/AIDS in their daily activities. Thus, in my fieldwork I could observe the workers were consuming chat and alcohol, there was large number of prostitutes in Sekoru and Deneba towns, and the workers had strong relationship with the prostitutes. I employed non-participant observation, and the technique helped me to observe and understand the actual reality in the study area.

In addition to interview and observation I used focus group discussion in my field work to collect pertinent information for the study. Focus group discussion, as a technique of more in-depth qualitative research, is employed to obtain information on the issue. Information obtained through this technique is mostly reliable since there was debate, open discussion and cross-check among the participants of the group through good moderation. The groups for discussions comprised different groups of people: three groups from workers of GGHP, two groups from commercial sex workers. The diversification was done in order to avoid bias and to balance the source of data for the research.

The other research technique I have applied in the study was key informants Interview. This technique is used to obtain more detailed and reliable information through facilitating the situation by making personal relations with the key informants. The interview was conducted with selected informants who have had good knowledge and observation about the vulnerability and risk behavior of the people in their daily activities, who were expressive to reflect their knowledge and

observation. Selection of key informants was carried out after having group discussions and differentiating the appropriate informants based on their participation in the discussions.

In addition to the above mentioned qualitative techniques in this research I also applied survey method to supplement data collected through qualitative techniques. Survey research is one of the most important techniques of data collection. It is important especially to explain information quantitatively (Barnard, 1995). In this study I used random sampling of survey technique. At the time of my field work GGHP has had 3,000 unskilled and about 1,000 skilled workers. In the earlier time of my field work through the contacts I have made with workers of the project I realized that these two categories of the workers have had a great difference in level of awareness of HIV/AIDS. Skilled workers, who are at better level of education, have had better knowledge about HIV/AIDS. Based on this ground, I decided to make my target of survey method the laborers or unskilled workers of the project. Out of the total laborers (3000), 341 of them were selected through scientific sample selection of random sampling technique. The awareness of the group of skilled workers has been assessed based on the data gathered through qualitative techniques. Therefore, I exempted them from the survey population in the study.

Finally, tape recording was used in this research together with the above techniques. Tape recording was used in this study to collect data through recording discussions, interviews, and other relevant information to support the study by having all the necessary information. It helped me to have the pertinent information especially in the case

where note tacking was difficult. I transcribed the recorded information during field work in organizing, analyzing and writing the findings of the study.

As indicated earlier, in addition to primary data from the field, secondary data has been also used in this study. Secondary data was collected through revision of books, journals, official documents on HIV/AIDS, medical reports on HIV/AIDS and other related and important secondary sources.

1.6 Data Analysis

As presented earlier the data used for this research are both qualitative and quantitative data. The qualitative data collected through group discussions, interviews and observation was recorded or taped and notes were taken. The recorded data was transcribed and compared to the noted points and latter on compiled up. The compiled written data was classified, categorized, organized and analyzed together with quantitative data.

The quantitative part was conducted through survey questions. Except very few questions, the questions were pre-coded. The open questions were processed and analyzed together with the qualitative data. Data collected through these pre-coded questions was processed and analyzed using computer program/ software “SPSS” (Statistical Package for the Social Sciences). The data processed by “SPSS” was organized in tables and analyzed in the finding part of the paper. Descriptions of the tables were made to support the qualitative data in the text.

Chapter Two

Literature Review

2.1 Population Movement, Development Projects and HIV/AIDS

Many studies conducted on HIV/AIDS (MOH, 2000; UNAIDS 2002) affirm that, unprotected sex, networks with multiple partners, and the sharing of drug stuff are some of the facilitating factors for HIV to spread within a population. To move the virus from one population to another, human mobility is usually one of the driving factors. Population movement is a potentially significant factor in relation to the spread of the epidemic particularly when unprotected sex is practiced in the sending and receiving places. In line of this, Schoof (1999) *quoted in Jackson* substantiate the idea as follows:

If you want to spread sexually transmitted diseases, including HIV/AIDS, you would take thousands of young men away from their families, isolate them in single sex hostels and give them easy access to alcohol and commercial sex. Then, to spread disease around the country, you would send them home every once in a while to their wives and girlfriends. And that is basically the system we have with mining (Jackson, 2002:312).

Different global studies (ILO, 2001; UNDP, 2000) on HIV/AIDS prevalence and risk of work place recognized that migration, either short term or long term, increases opportunities for sexual relationships with multiple partners. One of the reasons why people move or migrate from place to place is in search of employment

opportunities. The study titled by "An Assessment and Analysis, UNDP, South East Asia HIV and Development Project" (2000), indicated that because the employment opportunities-it creates, development project mobilizes people, migrant workers, from different area to the project site. This increases opportunities for sexual relationships with multiple partners and unsafe sexual relations since the migrants are away from their families and friends. And this fuels the epidemic. The majority of people living with HIV/AIDS, who participated in the study, said that migration was the main factor that led to their HIV vulnerability (Ibid).

There are also other many different studies in Africa in mining projects which reaffirm the idea. Schoof (1999) cited in Jackson (2002) indicated that the mining workers, mostly migrant workers, are developing HIV vulnerability and risk behavior to HIV/AIDS because of their being away from their wives, families or girlfriends. The study continued, these workers developed the habits of visiting commercial sex workers, practicing unsafe sex and multiple partners. This situation highly aggravates the spread of HIV/AIDS among the workers and their friends.

HIV and migration do not have a linear cause and effect relationship, but are linked in directly. HIV is a manifestation of lack of opportunities for safe sex and deprivation faced by migrants. Hostel and lonely environments, separation from their respective families and friends and lack of access to information can lead to sexual practices that make them more susceptible to HIV exposure. The situation can be catalyzed by the flourishing commercial sex workers in the particular area (UNDP, 2000).

There are different factors which may increase the vulnerability of migrant and mobile workers to HIV infection. In general, however, vulnerability to HIV is greatest when people live and work in conditions of poverty, social exclusion, loneliness, and anonymity. The ILO Code of Practice on HIV/AIDS and the World of Work identifies work situations which cause the worker to be more susceptible to the risk of HIV infection, most of which apply to many mobile workers. These include traveling regularly; living away from spouses and partners; working in geographically isolated environments with limited social interaction and health facilities; single-sex working and living arrangements among men; and work that is dominated by men, where women are in a small minority (IOM, 2002). For migrants relocating to a new community, social and sexual norms may be different than in their community of origin. Housing may be crowded and limited leisure opportunities encourage the use of alcohol, drugs and commercial and/or casual sex (ILO, 2001). This may be especially true for workers who are not migrated with partners or families because of different factors. Without the basic support systems provided by family and community, increased risk-taking behavior is likely and those risks may then be passed on to the family and community of origin (Ondimu, 2005).

2.2 The Impact of HIV/AIDS

HIV/AIDS has many negative impacts on human life since its emergence in the world. The threat of HIV/AIDS on human kind is many dimensional, which can be summarized as general aspects under health, social, economic and demographic impacts. These impacts are worst in

poor countries where HIV/AIDS is more devastating. African countries, especially Sub-Saharan countries are typical examples as many studies witnessed (UNAIDS 2004; Jackson 2002). In Sub-Saharan Africa, the region of the world that has been worst affected by the global AIDS epidemic; HIV/AIDS has caused vast amounts of human suffering. Nearly two-thirds of all HIV positive people live in this area, although it contains little more than 10% of the world's population (UNAIDS, 2003 & 2005). The most obvious effect of this crisis has been illness and death, but the impact of the epidemic has certainly not been confined to the health sector; households, education, workplaces and economies have been significantly affected, along with other sections of the society.

The Impact on the Health Sector: In all affected countries, the AIDS epidemic is bringing additional pressure to bear on the health sector. As the epidemic matures, the demand for care for those living with HIV rises. This overloads the health workers. According to UNAIDS 2002 Report on the Global AIDS Epidemic, in sub-Saharan Africa, the direct medical costs of AIDS (excluding antiretroviral therapy) have been estimated at about US\$30 per year for every person infected, at a time when overall public health spending is less than US\$10 per year per person for most African countries.

Ministry of Health (2000) report indicates in Ethiopia AIDS is an expensive disease that requires a considerable amount of resources from the health system. The estimated cost of hospital care for an AIDS patient on average is 1800 Birr (Ministry of Health, 2000).

As the HIV prevalence of a country rises, the strain placed on its hospitals is likely to increase. In Sub-Saharan Africa, people with HIV-

related diseases occupy more than half of all hospital beds (Ministry of Health, 2006). Government-funded researches in South Africa has suggested that, on average, HIV-positive patients stay in hospital four times longer than other patients. This study shows that hospitals are struggling to cope, especially in poorer African countries where there are often not enough beds available. This shortage results in people being admitted only in the later stages of illness, reducing their chances of recovery. As the epidemic worsens, more complex cases of HIV and AIDS are likely to arise, taking up more hospital time and further reducing the standard of care provided.

While AIDS is causing an increased demand for health services, a large number of healthcare professionals are being affected by the epidemic. Botswana, for example, lost 17% of its healthcare workforce due to AIDS between 1999 and 2005. A study in one region of Zambia found that 40% of midwives were HIV-positive (UNAIDS, 2006). Healthcare workers are already scarce in most African countries. Excessive workloads, poor pay and the temptation of migrating to richer countries once trained are factors that have played a role in this shortage.

A UNAIDS 2006 Report on the Global AIDS Epidemic indicates, although the recent increase in the provision of antiretroviral drugs (ARVS, which significantly delay the progression from HIV to AIDS) has brought hope, it has also put increased strain on healthcare workers. Providing ARVS requires more time and training than is currently available in most countries – for instance, in Tanzania it has been estimated that providing treatment to all those who need it would require the full-time services of almost half the existing health workforce.

The Impact on Households: The toll of HIV and AIDS on households can be very severe. Although no part of the population is unaffected by HIV, it is often the poorest sectors of society that are most vulnerable to the epidemic and for whom the consequences are most severe. In many cases, the presence of AIDS means that the household will dissolve, as parents die and children are sent to relatives for care and upbringing. A study of rural South Africa suggested that households where an adult had died from AIDS were four times more likely to dissolve than those where no deaths had occurred (UNAIDS, 2004). Much happens before this dissolution takes place; AIDS strips families of their assets and income-earners, further impoverishing the poor.

HIV/AIDS severely affect household income. In Botswana it is estimated that, on average, every income earner is likely to acquire one additional dependent over the next ten years due to the AIDS epidemic (UNAIDS 2006). A dramatic increase in destitute households – those with no income earners – is also expected. Other countries in the region are experiencing the same problem, as individuals who would otherwise provide a household with income are prevented from working by HIV and AIDS – either because they are ill themselves or because they are caring for another family member who is sick of HIV/AIDS. Such a situation is likely to have repercussions for every member of the family. Children may be forced to abandon their education and in some cases women may be forced to turn to sex work. This can lead to a higher risk of HIV transmission, which further exacerbates the situation.

The AIDS epidemic also adds to food insecurity in many areas, as agricultural work is neglected or abandoned due to household illness. In Malawi, where food shortages have had a devastating effect, it has been

recognized that HIV/AIDS are fuelling the country's poor agricultural output. It is thought that by 2020, Malawi's agricultural workforce will be 14% smaller than it would have been without HIV/AIDS. In other countries, such as Mozambique, Botswana, Namibia and Zimbabwe, the reduction is likely to be over 20% (UNAIDS 2006 Report on the Global AIDS Epidemic).

Healthcare expenses and funeral costs is another additional load for households. Taking care of a person who is sick with AIDS is not only an emotional strain for household members, but also a major strain on household resources. Loss of income, additional care-related expenses, the reduced ability of caregivers to work, and mounting medical fees push affected households deeper into poverty.

The Impact on Children: It is hard to over emphasize the trauma and hardship that children affected by HIV and AIDS are forced to bear worldwide. The epidemic not only causes children to lose their parents or guardians, but sometimes their childhood as well.

As parents and family members become ill, children take on more responsibility to earn an income, produce food and care for family members. It is harder for these children to access adequate nutrition, basic health care, housing and clothing. Fewer families have the money to send their children to school.

Studies (World Bank, 2002; UNAIDS 2004) show that, often both of the parents are HIV-positive in Africa. Consequently, more children have been orphaned by AIDS in Africa than anywhere else. Many children are now raised by their grandparents or left on their own in child-headed households.

As projections of the number of AIDS orphans rise, some have called for an increase in institutional care for children. However this solution is not only expensive but also harmful to the children. Institutionalization stores up problems for society, which is ill equipped to cope with an influx of young adults who have not been socialized in the community in which they have to live. There are other alternatives available. One example is the approach developed by church groups in Zimbabwe, where they recruit community members to visit orphans in their homes, where they live either with foster parents, grandparents or other relatives, or in child-headed households (UNAIDS, 2004).

The Impact on the Education Sector: The relationship between AIDS and the education sector is direct – as the epidemic worsens, the education sector is damaged. There are numerous ways in which AIDS can affect education, but equally there are many ways in which education can help the fight against AIDS. The extent to which schools and other educational institutions are able to continue functioning will influence how well societies eventually recover from the epidemic.

A decline in school enrolment is one of the most visible effects of the epidemic. This will in itself have an effect on HIV prevention, as a good basic education ranks among the most effective and cost-effective means of preventing HIV (World Bank, 2002).

There are numerous barriers to school attendance in Africa. Children may be removed from school to care for parents or family members, or they may be living with HIV themselves. Many are unable to afford school fees and other such expenses – this is particularly a problem among

children who have lost their parents to AIDS, who often struggle to generate income.

Studies have suggested (UNICEF, 1999; UNAIDS, 2002) that young people with little or no education may be 2.2 times more likely to contract HIV as those who have completed primary education. In this context, the devastating effect that AIDS is having on school enrolment is a big concern. In Swaziland and the Central African Republic, it has been reported that school enrolment has fallen by 25-30% due to AIDS (UNAIDS, 2002).

HIV/AIDS not only affects pupils but teachers as well. In the early stages of the African epidemic it was reported that teachers were at a higher risk of becoming infected with HIV than the general population, because of their relatively high socio-economic status and a lack of understanding about how the virus is transmitted. This trend appears to have changed, as evidence increasingly shows that the more educated an individual is, the more likely they are to change their behavior (World Bank, 2002). But HIV and AIDS are still having a devastating effect on the already inadequate supply of teachers in African countries; for example, a study in South Africa found that 21% of teachers aged 25-34 are living with HIV (Ibid).

Teachers who are affected by HIV and AIDS are likely to take increasing periods of time off work. Those with sick families may also take time off to attend funerals or to care for sick or dying relatives, and further absenteeism may result from the psychological affects of the epidemic (World Bank, 2002).

When a teacher falls ill, the class may be taken on by another teacher, may be combined with another class, or may be left untaught. Even when there is a sufficient supply of teachers to replace losses, there can be a significant impact on the students. This is particularly concerning given the important role that teachers can play in the fight against AIDS. One example is the benefits that a good teacher can give to children who have lost their parents to AIDS.

The illness or death of teachers is especially devastating in rural areas where schools depend heavily on one or two teachers. Moreover, skilled teachers are not easily replaced. Tanzania has estimated that it needs around 45,000 additional teachers to make up for those who have died or left work because of HIV and AIDS. The greatest proportion of staff that have been lost, according to the Tanzania Teacher's Union, were experienced staff between the ages of 41 and 50(UNAIDS, 2006).

The Economic Impact: Through its impacts on the labor force, households and enterprises, AIDS has played a more significant role in the reversal of human development than any other single factor (UNDP, 2005). One aspect of this development-reversal has been the damage that the epidemic has done to the economy, which, in turn, has made it more difficult for countries to respond to the crisis.

One way in which HIV and AIDS affect the economy is by reducing the labor supply through increased mortality and illness. Amongst those who are able to work, productivity is likely to decline as a result of HIV-related illness. Government income also declines, as tax revenues fall and governments are pressured to increase their spending to deal with the rising of HIV prevalence.

The abilities of African countries to diversify their industrial base expand exports and attract foreign investment are integral to economic progress in the region. By making labor more expensive and reducing profits, AIDS limits the ability of African countries to attract industries that depend on low-cost labor and makes investments in African businesses less desirable. HIV and AIDS therefore threaten the foundations of economic development in Africa (Rosen S. et al 2004).

Study on African economy (World Bank, 2002) shows that, the impact that AIDS has had on the economies of African countries is difficult to measure. The economies of the worst affected countries were already struggling with development challenges, debt and declining trade before the epidemic started to affect the continent. AIDS has combined with these factors to further aggravate the situation. It is thought that the yearly impact of AIDS on Sub Saharan Africa's gross domestic product (GDP) is 1%. While this is a relatively modest effect, it will build in significance over time, especially in countries where HIV prevalence is rising. One way in which this impact can be reduced is through the provision of antiretroviral drugs to people living with HIV. A recent study in South Africa suggested that, if the proportion of those in need of antiretroviral drugs who are receiving them increased to 50%, the effect of the epidemic on economic growth would be reduced by 17% (UNAIDS, 2004).

2.3 The Spread of HIV/AIDS in Ethiopia

The population of Ethiopia was about 60 million in 2000. In mid 2005 Ethiopian population was estimated to be 73 million and forecasted to grow by about 2.0% annually through 2025. The growth rate is declined

from 2.9 % (2000) to about 2.0 % (2005). Of these 73 million populations young population under the age of 15 years constitute about 43%. Concerning urban-rural population distribution, about 84% of the total population is residents of rural areas in the country. (Ethiopian MOH: 2006). Currently, Ethiopia has a federal system with nine regional states and two administrative councils.

According to the report of MOH (2006) of the country, the first evidence of HIV was first detected in Ethiopia in stored data collected in 1984 and the first two AIDS cases were reported in 1986. Soon after the reported infection evidence, the Ethiopian government was starting to reply to the problem. As MOH indicated the following programs and steps were taken by the government.

HIV was first detected in Ethiopia in stored sera collected in 1984 and the first two AIDS cases were reported in 1986. A National HIV/AIDS taskforce was established in 1985 and the National AIDS Control Program (NACP) was established at a Department level at the MOH in 1987. HIV/AIDS surveillance activities began in 1989. There are many factors that promote the spread of the disease including the presence of sexually transmitted infections, gender inequality, multiple sexual partners, prostitution, men with disposable income, alcohol, unsafe blood transfusion, and transmission from infected mother to her fetus/child during pregnancy and breast-feeding (MOH, 2006:8).

In 1998, the HIV/AIDS policy was formulated by MOH and adopted by Council of Ministers. In this endeavor the policy tries to create conducive environment to control the spread of HIV/AIDS and to participate other sectors in anti-HIV/AIDS campaign. This can be stated detail as:

The HIV/AIDS Policy was formulated by MOH and adopted by the Council of Ministers in 1998. This created an enabling environment for HIV/AIDS prevention and control. The policy

supplemented several policies such as the Health Policy, Women's Policy, and the Education and Training Policy calling for a multisectoral response; guaranteeing rights for PLWHA; and facilitating the development of policies, e.g., on the supply and use of antiretroviral (ARV) drugs among other things. The HIV/AIDS Prevention and Control Office (HAPCO) was established in 2002 after 2 years of functioning as the National HIV/AIDS Council Secretariat (NACS) (MOH, 2006:8).

The Ministry of Health Report (2000) revealed that although HIV prevalence was very low in Ethiopia during early 1980s, it has rapidly increased since 1990s. Prevalence among adults in Ethiopia was 2.7 percent in 1989 and estimated 7.3 percent in 2000 and 5.3% in 2005. By 2000 there were about 2.7 million Ethiopians living with HIV/AIDS and about 3 million in 2002. MOH (2006) reported that it was estimated that 1,320,000 Ethiopian's were living with HIV/AIDS. Of this total 634,000 were living in rural and 686,000 in urban areas. The MOH report also indicated that in the age group 15-24 years, in 2005, had the highest prevalence of 5.6% of all age groups while the national HIV prevalence was 3.5%. Women are more vulnerable than male especially in the young age 15-29. According to MOH's 2006 report; of the total estimated 1,320,000 PLWHA in 2005, 730,000 (55%) were female. The report also indicated that urban people are more infected than rural. The MOH 2006 report reveals this as:

The age group 15-24 years had the highest prevalence of 5.6% of all age groups. The modeled and adjusted (adjusted for differences in regional urban/rural population sizes) national HIV prevalence in 2005 was 3.5%; 3 % among males and 4% among females. The estimated prevalence in urban areas was 10.5% (9.1% among males and 11.9% among females) and 1.9% in rural areas (1.7% among males and 2.2% among females). In Ethiopia, the urban prevalence appears to have stabilized in the period 1996 to 2000 and is slowly and gradually declining since 2001. The rural epidemic stabilized

after reaching its highest level during 1999-2001. The overall HIV prevalence for Ethiopia has stabilized with the number of people newly infected and dying being almost equal. The overall HIV incidence estimate for Ethiopia in 2005 was estimated at 0.26% and is projected to remain stable until 2010. In 2005, it was estimated that a total of 1,320,000 people were living with HIV/AIDS. Of the total, 634,000 were living in rural areas and 686,000 in urban areas. In the age group 15-29 years, there were more women living with HIV/AIDS than men; in the age group 30+ years, there were more men living with HIV/AIDS than women (MOH, 2006:6).

The 2006 UN report indicated that the current estimates show that HIV/AIDS in Ethiopia has stabilized at 3.5% percent for the adult population. The Regional HIV/AIDS prevalence is not the same for all regions of the country. The 2005 prevalence estimates by MOH shown that it was ranged from 1.2% in Somali to 11.7% in Addis Ababa. Because of the combination effects of large population size and high prevalence rate the four regions (Amhara, Oromia, Addis Ababa and SNNP) constitute for about 86.6% of the total PLWHA in Ethiopia. These regions also share 86.7% of the total estimated HIV positive pregnancies, 85.3% of new infections, 87.9% of new AIDS cases, and 88.2% of AIDS deaths that occurred in Ethiopia in 2005.

The regional prevalence estimates for urban areas in 2005 range from 3.8% in Somali to 14.1% in Afar. However, due to the relatively large population sizes and high HIV prevalence rates in their respective urban areas, about 84.6% of PLWHA for urban Ethiopia live in only four of the regions (30.2% in Addis Ababa, 22.7% in Amhara, 22.2% in Oromia and 9.5% in SNNPR) in 2005. The HIV incidence rates for the urban areas of regions range from 0.33% in Somali region to 1.72% in Afar Region. However, because of their relatively large population sizes and high HIV

incidence rate, Addis Ababa and urban areas of Amhara, Oromia, and SNNPR share 83.4% of the total estimated HIV positive pregnancies, and 83.6 % of new infections of Urban Ethiopia in 2005. And the rural regional HIV prevalence estimates for 2005 ranged from 0.6% in Harari to 3.2% in Amhara region. However, due to the relatively large population size and the high HIV prevalence rates, Amhara, Oromia, SNNPR, and Tigray accounted for significant proportion of rural PLWHA (94.4%), new AIDS cases (95.2%), AIDS deaths (95.3%), and HIV positive pregnancies (95.1%) (MOH: 2006).

From this we can conclude that the prevalence rate of HIV/AIDS and PLWHA is high in these four regions. Oromia is one of the four regions with high concentration of HIV/AIDS. Concerning zonal level in Oromia zones like East Shawa, Jimma, are with high HIV/AIDS concentration. According to the HPCO Oromia the reason why these zones are relatively with high HIV concentration is that there is high people mobility for different purposes. Migrant labor is one of the mobile people who are highly vulnerable to HIV/AIDS. So it is reasonable to focus for this study on Gigel Gibe Hydroelectric project laborers.

In previous pages I discussed that there have been different attempts and policy concerns of Ethiopian government to protect HIV/AIDS threats. But there is still a great damage on Ethiopians by HIV/AIDS in multi dimensions. Evidences show that even though there is knowledge about HIV/AIDS, currently, the behavioral change regarding HIV and sexual behavior among the Ethiopian people is low. Ethiopian government in its program on HIV/AIDS has taken different steps to prevent the threats of HIV/AIDS and currently it shows appreciable progress in HIV prevalence

reduction. Initiatives which focus on prevention of HIV from mother to child, voluntary counseling and testing (VCT) centers are expanding to reduce the spread of HIV/AIDS and also to treat those who are already infected (MOH, 2005). According to MOH the VCTS try to provide clients with testing, giving information about HIV/AIDS and provide care and antiretroviral drugs (ARVS) for the needy. There are also voluntary non-governmental organizations which are dedicated in prevention of HIV/AIDS through giving care and support for already infected and counseling and giving information for the people. Despite of all these the HIV/AIDS epidemic continues to pose a threat to the development of Ethiopia where currently about 1.32 million people are living with HIV and 744,100 are orphaned due to AIDS, and 277,800 are in need of ART in 2005 (MOH: 2006).

2.3.1 Impacts of HIV/AIDS in Ethiopia

The severe impact of HIV/AIDS on the socio-economic development of Ethiopia ranked as the biggest challenge on national development and societal wellbeing. These challenges of HIV/AIDS can be explained through the impacts it poses in demographic, social, health care and economic dimension of the country.

According to the reports from MOH (2000), AIDS increases the death rate at all ages; especially the impact is severe among the young and children. The report of MOH and central Statistics Authority (CSA) witness that HIV/AIDS has significant impact on mortality, life expectancy and fertility. This in turn negatively affects the population size of the country. The cumulative number of AIDS deaths from the beginning of its epidemic was estimated at about 1.2 million in 2000. The death amount

is even believed to be increasing and by 2002 it is expected to increase to 1.7 million. It is projected that from 2002-2014 additional 3.55 million Ethiopians are likely to die because of AIDS which would result in a cumulative total death of about 5.25 million by 2014 (MOH 2000).

One of the disastrous impacts of HIV/AIDS is the decline of life expectancy at birth because of the large number of infant, children and young adult deaths to AIDS.

MOH (2000: 27) put this as "the estimated life expectancy at birth would currently be 50 years. However due to . . . impact of AIDS it may only be 42 years. The future decline is expected to be even much higher." The reduction of life expectancy because of HIV/AIDS, however, is expected to decline because of anticipated wide coverage of ART to the needy (MOH:2006).

The above discussed large number of AIDS death and decline in life expectancy at birth has significant impact on population size. Of course the impact of HIV/AIDS will not bring a halt to the general population growth. The MOH (2002) estimates life expectancies to rise from 50 years (2000) to 56 years (2014) if there is no AIDS death; and assuming a decline both in total fertility rate and in mortality rate from all causes other than AIDS.

Thus, if there were no AIDS epidemic, the 60 million Ethiopia population size (2000) will be increasing to 92 million (2014). But because of HIV/AIDS' severe impact it is projected to decline to 85 million. These all is summarized by MOH as:

With a continued AIDS epidemic, the total population would rather be only 85 million in 2014. Thus, the combined impacts of the AIDS epidemic such as AIDS death, reduction in fertility due to condom use to prevent infection, fewer births because of a smaller reproductive age, population reduction due to HIV infection, would be expected to result in almost 7 million fewer people by 2014 (MOH, 2000:28).

Another threat of HIV/AIDS to Ethiopian's is the impact of HIV/AIDS on socio-economic sector of the society. This can be explained by the fact that HIV/AIDS attacks people who are economically active and can contribute a lot if they were not infected. And the cost needed to treat and medicate HIV/AIDS patient is high. HIV/AIDS harms both agricultural and industrial sectors because of the loss of skill and unskilled laborers that are economically active. It also harms social service sectors such as schools, health care and others. This is because HIV/AIDS is the cause for loss of teachers who are infected, harming government budget to hospitalize the patients; and make governmental and non- governmental sectors financially weak. Ethiopian MOH in its 2000 report indicated this as:

The Economic impacts of HIV/AIDS are relatively severe in institutions such as health care, insurance and military. AIDS causes the expenditure of a considerable amount of resources in the health system. It is consuming the great amount of health sector budget, i.e. more than one-fifth of the recurrent budget of the health sector. It also makes most of the hospital beds have been occupied by AIDS patients and health workers are mostly busy in caring for these patients.

The threats of HIV/AIDS also impose huge amount of expenditure on insurance sector which is, even to the extent of it becomes, beyond their finance capacity. The same is true also for "Idirs".

The military will also be severely affected since the infection rates tend to be high among military personnel. This is because many military personnel are young, sexually active and are away from their families for long periods of time (MOH, 2000).

AIDS can also affect agricultural sector. Agriculture is the largest sector of the Ethiopian economy. It has the lion's share in employment and contributes more than half of all the production in the country's economy. AIDS can affect the sector by the death of productive people to AIDS, loss of work labor because of infection and health care expenses. This also severely harms the rural households. The rural households are directly affected by AIDS when it causes the death of family member(s). Since AIDS mainly attacks adults between the ages of 20 and 49, it is likely to affect the most productive members of the family.

A recent study in Ethiopia demonstrated that, in addition to direct effects of labor loss, AIDS also affects the rural households by reducing income and their saving capacity. The situation becomes worst in the case of husband death from AIDS. This is because the entire burden is fall on wife which is difficult to carry for here. So women are the most threatened group by AIDS, *Demeke* (1994) cited in MOH (2000).

The death of a family member from AIDS seriously harms the family by reducing income which leads to reduction in saving and also increase in

expenses. *Demeke* (1994) cited in MOH (2000), in his study on 25 AIDS afflicted rural families found that average costs for treatment, funeral and other related activities is amounted about 2500 Birr. The expenses for funeral ceremonies are compensated by selling of family's assets such as livestock.

The 2000 report of MOH reveals that the impacts of AIDS are not limited only to the above discussed sectors. It also seriously affects industrial sectors and other development projects. Since mobile (migrant) labor and workers in urban areas are at higher risk, the industrial sector is most likely to be hit by AIDS. It is a challenge for this sector to replace workers who are dying to AIDS, especially when managers and skilled labors are lost. In this Jira (2005: 18) said "The consequences of AIDS epidemic will potentially result in acute shortage of labor, loss of expensively trained specialists... which lead a state to poverty". The productivity of the sector can also be affected before the employee dies, due to lost workday because of sickness, health care costs for employee and so on.

Chapter Three

General Background of the Study Area

This chapter focuses on the general background of the study area, i.e. the Gilgel Gibe Hydroelectric Project and its surrounding areas. Here it discusses the location of the project, climatic condition and nature of the soil of the area. Furthermore the chapter also points out the natural environment, such as vegetation and animals of the project site and its surroundings. The chapter also deals with the planning, impact assessment and general description of the project. The environmental policy of Ethiopia and the general nature of the project and its rationales will also be discussed. Finally the impact assessment and plan of the project concerning gender issues and health problems, especially HIV/AIDS is addressed.

3.1 Location and Natural Features

The Gilgel Gibe Hydroelectric Project site is located in Jimma zone of Oromiya Regional State. The site is surrounded by three districts: Sekoru, Deneba and Omo Nada districts. The project (dam) is found in southwest Ethiopia which is about 285 kilometers from Addis Ababa and 85 kilometers from Jimma town. Jimma zone is one of the zones of Oromiya Regional State situated between 7°13' North latitude and 35°25' to 37°37' East longitude (Kasahun, 2001). Similarly, the Project is located in about 85 km north-east of Jimma (7°05'N, 37°20' E). The area is a fairly flat plateau about 1,650 meters above sea level and consists of a series of sloping low hills and broad plains surrounded by hills or

mountains(MOME: 1997). The Gilgel Gibe (Little Gibe) River, crossing the Sekoru Wereda from the south-west to the north-east is a tributary of the Great Gibe River (known downstream as the Omo River). In the reservoir area, the stretch of river between Asendabo and the Deneba waterfall has a winding and relatively flat course. The right bank is more or less flat with some small hills, while the left bank is steeper (Ibid).

The 1997 report of MOME on the project shows that an area of approximately 60 km² will be inundated at maximum supply level and will affect 18 kebeles belonging to 4 weredes. The area includes 2,476 families representing 15,351 people who will be obliged to move from the area. Three different groups of people within the project area will be directly affected by the project and will be required to move from the area. These groups will include:

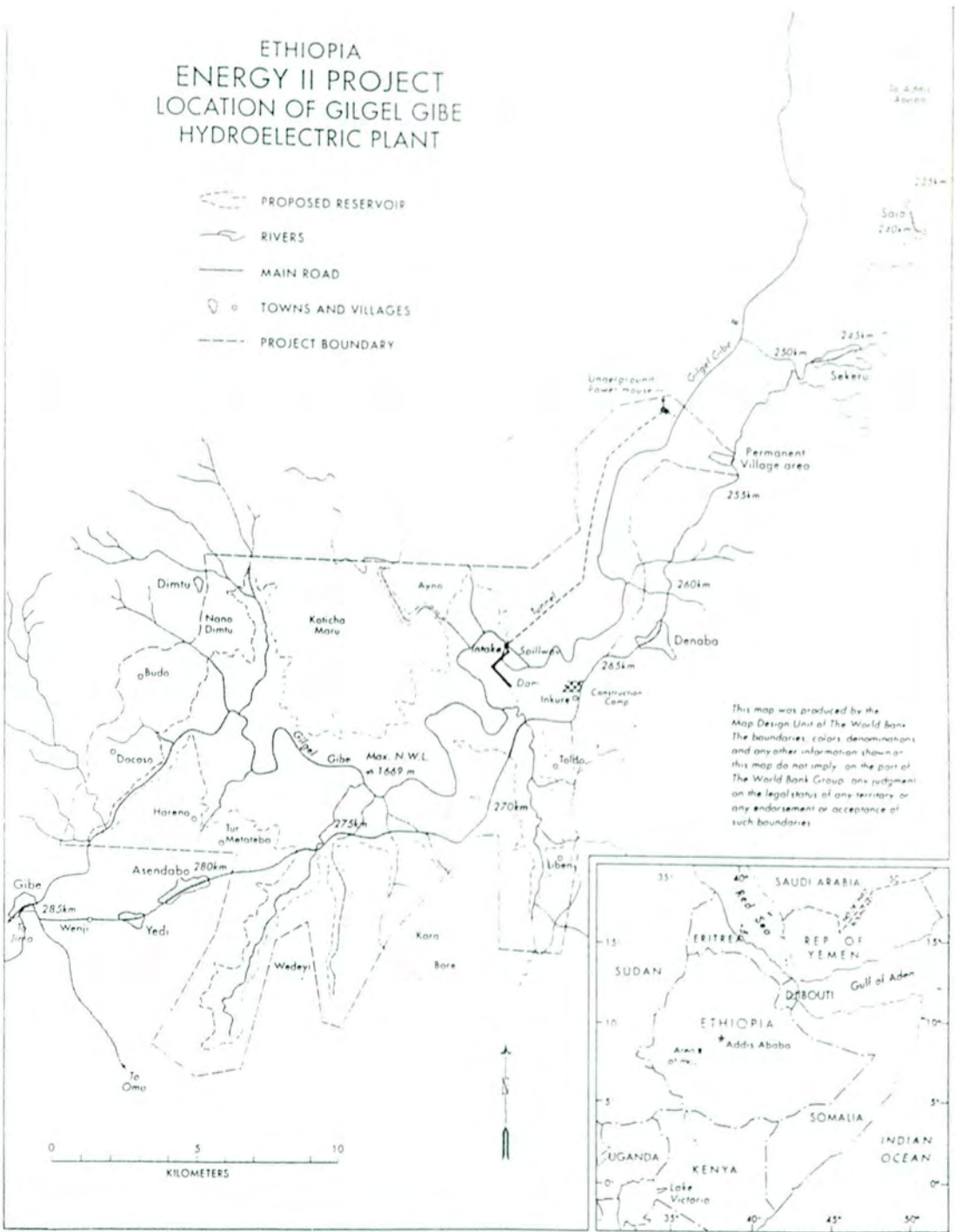
- Families living and cultivating in the area of the reservoir.
- Families living outside the reservoir zone area but cultivating within the reservoir.
- Families living and cultivating outside the reservoir area but within the project area.

Those who live and work within the area (273 families representing 1,715 people) of the reservoir will have to abandon their homes as well as the land they use for agriculture and grazing. In this area 1,196 hectares of land is used for agriculture and 114 hectares of land is used for grazing.

The land within the area of the reservoir that is used by families living outside the area includes 1,545 hectares for agricultural uses and 164 hectares for grazing. The third group of people, those who live and work outside reservoir area but within project area, is the largest, with 1,946

ETHIOPIA ENERGY II PROJECT LOCATION OF GILGEL GIBE HYDROELECTRIC PLANT

-  PROPOSED RESERVOIR
-  RIVERS
-  MAIN ROAD
-  TOWNS AND VILLAGES
-  PROJECT BOUNDARY



This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

MAY 1997

Source: Project Appraisal Document, Federal Democratic Republic of Ethiopia, Energy II Project, Nov. 13, 1997. The document of The World Bank Report No. 17170-ET.

families and 12,516 people. These families use 6,282 hectares for farming and 199 hectares for grazing. As noted previously, the figures for the latter two groups will change owing to the reduction of the buffer zone. Since, the reservoir perimeter is unchanged; the first group will not have any options to stay as their holdings will be inundated. The new area of the buffer zone and reservoir will be approximately 9,200 hectares.

The MOME (1997) report also stated that the above groups of people to be affected by the reservoir will have to be relocated. Kashun (2001) and other researchers on the issue indicated that the impact of relocation can be extreme and could last for a long time. Even after resettlement it is unrealistic to expect that displaced people are able to quickly adapt to new production systems under different climatic and soil conditions, and perhaps even being required to change occupations.

Climate

Climatically, the project area is semi-arid with average annual temperature of 19.2°C. It ranges 18-25°C which the highest being during the Bonnaa (Jan- May) season. The course of the river is hotter than the other part of the area. The area receives the annual average rainfall of 1535mm. Sixty per cent of the total rainfall occurs within June to September period, 30 per cent in the February to May period, and 10 per cent in the October to January period(MOME: 1997). Out of all the twelve months October is the coldest month. This experience sometimes extended to mid November (Kasahun: 2001). The area has three seasons which vary in their temperature and rainfall season.

Soil

Soils of the general area are alfisol-type that has been developed under humid and deciduous forest conditions. Soil texture ranges from clay to lime-clay or sandy clay and the soils are generally acidic. The project site is characterized by black soils in the valley bottom, grey brown in the hilly strip and red at higher levels. Organic and total nitrogen content of the valley bottom soils are typical of permanent meadow land. Middle and high altitude soils have lower nutrient levels due to exploitation and intensive erosion (MOA: 1989).

3.2 Natural Environment

Vegetation

The vegetation in Gibe Valley is part of the Broad-leaved deciduous woodland of Western Ethiopia. The vegetation is characterized by woodland species that shed their leaves during the dry season and regain them during the wet season just like temperate trees respond to the cold and dry climate in winter and the warm and wet climate in summer. The shrub and small tree density is sparse and under canopy and the open area is covered by long grass which burns during the dry season. As an integral part of the broad-leaved vegetation there is distinct layer of riverine vegetation along riverbanks owing to the relatively moist conditions. Description of the vegetation in the Environmental Impact Assessment of the Reservoir by Ministry of Mines and Energy (1997) dealt mainly on the vegetation of the plateau to be inundated by water. The altitudinal ranges, temperature, humidity and the floristic and physiognomy composition of the vegetation in Gilgel Gibe and Gibe proper provide ideal conditions for Tsetse fly infestation (MOME: 1997).

Fauna

According to the Environmental Impact Assessment of the Reservoir by Ministry of Mines and Energy (1997), wildlife abundance and diversity in the project area is low, probably as a result of past and present intensive farming and grazing activities and the extensive reduction in suitable habitat. Kasahun (2001) in his research indicated that because of less vegetation covers and human factors, the population and diversity of wildlife is low. But still we can find animals such as hippopotamus, fox, hyenas, and warthogs. Ministry of Agriculture also identified that there are three species of amphibians and reptiles, ten bird species, and 21 species of mammals are thought to be present in the project area as a result of earlier surveys (MOA:1989). Input from local people has indicated the presence of large carnivorous but to date this has not been verified. The relatively inaccessible gorge between the proposed dam and tailrace probably contains suitable habitat and food supply (e.g. baboons) for leopard (MOME: 1997). The river conditions are ideal for fish species requiring little oxygen and a diet from the lower end of the food chain. Three major fish species were sampled from the river, including *Barbus intermedius* (the dominant species), *Tilapia nilotica* and *Labeo cylindricus*. The dominant *Barbus intermedius* has a population of normal composition (Ibid).

3.3 Population

Jimma Zone, as of the year 2002, has over 2.26 million populations. About 89% of the population resides in the rural areas while the remaining 11% belong to 29 towns and locations considered being urban settlements. Sekoru is among the most densely populated weredas in the

Zone. According to the 1999 CSA population projection, the total population of Sekoru Wereda is 132,764 of which the urban population is 14,788 while the rural population is 117,976. The share for male population of the Wereda is 49.94% while female population is 50.06%.

The annual population growth rate of Jimma zone is calculated to be 3.4% per year between 2001 and 2010. This high population growth rate can make the population double itself within 15-20 years (Kasahun: 2001). Demographically the majority of the population is young who are sexually active. The Gilgel Gibe Hydroelectric project has about 4000 workers of total and among sex majority are male workers. These workers are mostly from local area and there are also migrant workers who came from different corners of the country. These people have different backgrounds and experiences that lead them to have weak relations and weak social control on their daily activities.

3.4 The Environmental Policy and Project Planning

Ethiopia has an abundance of rivers which provide the country with the potential for large sustainable energy resources in the form of hydropower. Recent power planning studies (MOME, 1997) have estimated that Ethiopia's hydroelectric potential is in the order of 30,000 MW, a potential greatly in excess of foreseeable domestic demand. Currently only about one per cent of the available total is being exploited for generating hydroelectric power (Ibid). Preliminary investigations have indicated that the most promising sites could be developed at lower costs than other power generation options (MOME: 1997). Ethiopia's 10 year perspective plan for the period 1984 to 1993 recognized the importance

of low cost energy as an incentive to industrial and economic development. At the same time, the plan realized that export sales could provide an attractive long term development opportunity. Neighboring countries are poorly endowed with water resources that can be converted to inexpensive energy and they face the continuing prospect of increasing oil imports in order to meet their own domestic demand (Ibid).

The Gilgel Gibe project is one of the most promising potential hydroelectric developments in the country. The first studies of hydroelectric plant on the Gilgel Gibe River were initiated in 1963 by the Yugoslav Electro project Company. Subsequently, a Chinese technical mission (1972) and the Electric Power Development Corporation of Japan were also involved in the project (1974). In 1981 another investigation was conducted by a team of experts from the Democratic People's Republic of Korea which proposed a 94 MW hydroelectric project on the Gilgel Gibe River at the proposed site. A Power Planning Study carried out by Canadian company in 1982 reviewed the Korean scheme, and in 1984 ENEL (Ente Nazionale per l'Energia Elettrica, Italy) prepared a feasibility report for the Gilgel Gibe project, taking into account the conclusions of the Canadian company study (Kasahun: 2001& MOME: 1997). At that time, a scheme with one single plant was foreseen, with 285 MW installed capacity (MOME: 1997).

At a 1984 unit price level, the scheme was estimated to cost about \$US 305 million over a construction period of approximately six years. Following the submission of the 1984 ENEL feasibility report, further studies were developed, and initial activities for constructing the Gilgel Gibe Hydroelectric Project were started in 1988 through a cooperation

established between the Government of Ethiopia and the Democratic People's Republic of Korea. Further assistance for project implementation was obtained from the Governments of Italy and Austria. Due to difficulties and delays experienced during the initial construction works; a lower power demand than originally expected; and the country's financial capacity; the initial single plant scheme was abandoned for a two plant arrangement with an upstream and a downstream plant (Ibid).

The 1997 report of MOME on the issue shows that the cost of the upstream plant was estimated (1994 unit price level) at approximately \$US 106 million. Under the initial agreement between the Government of Ethiopia and the Democratic People's Republic of Korea, the upstream plant was expected to come on line in 1993. No definite schedule was established for the downstream plant. Due to the very limited progress achieved in construction, Ethiopia decided to interrupt the co-operation agreement with the Koreans in 1994, and to revert to a typical western project management and tendering practice to assure the completion of the project. The ENEL consortium was retained as the engineering consultant for the project in June 1995 and was given the responsibility to upgrade and complete the design, based on the selected two plants. They were also responsible for detailed design, construction supervision and the commissioning of both plants. Final design resulted in a design based on a single power plant without the downstream weir (Ibid).

Electrical power in Ethiopia is administered by the Ethiopian Electric Light and Power Authority (EELPA) which is an executing agency of the Ministry of Mines and Energy (MOME) of the Government of Ethiopia

(GOE). EELPA is responsible for the generation, transmission and distribution of electricity throughout the country.

Concern for environmental degradation in Ethiopia has been giving due attention in recent years. In this concern, the Ethiopian Federal Democratic Republic Constitution provides the basic and comprehensive principles and guidelines for environmental protection and management.

The FDRE Constitution contains a number of articles that are relevant to environmental matters in connection with development projects, as well as to the environment in general. Article 43 gives the right to people to improved living standards and to sustainable development. Article 92 of Chapter 10 (which sets out national policy principles and objectives), includes the following significant environmental objectives:

- Government shall Endeavour to ensure that all Ethiopians live in a clean and healthy environment;
- The design and implementation of programs and projects of development shall not damage or destroy the environment;
- People have the right to full consultation and to the expression of their views in the planning and implementation of environmental policies and projects that affect them directly; and
- Government and citizens shall have the duty to protect the environment.

Furthermore, the Constitution states that everyone has the right to live in a clean and healthy environment and the Government will make every effort to provide such an environment. The constitution holds the Government and the people of Ethiopia responsible for the preservation

of natural resources and maintenance of ecological balances. A number of proclamations and supporting regulations reflect the principles of the Constitution (FDRE Constitution & MOME, 1997).

3.5 Health and Gender Issues

Gender Issues

According to the report and plan on Environmental Impact Assessment of the Reservoir by Ministry of Mines and Energy (1997), little information is available in the project area on specific women's issues. A number of impacts are anticipated, based on experiences from other similar development projects in the world. The following are some of the potential impacts, many of which relate to the resettlement program, but these should be evaluated specifically for the Gilgel Gibe project. The potential impacts include:

Relocation disrupts the family unit as men often migrate to areas of large infrastructure projects to seek employment and forcing women to assume additional domestic responsibilities at home;

Cash compensation often does not benefit women since they have little or no control over it;

Relocation can mean the loss of an existing job or a means of gaining an income;

- Relocation can mean the loss of certain types of food to the diet;
- Formal and informal social networks often have to be reconstructed;

- Women are often used on construction sites as unskilled labor and often without health precautions or insurance which are available to men;
- Women are usually paid less than men for the same work;
- Stable disbursements of unaccustomed amounts of money to newly employed husbands sometimes leads the men to prostitution and associated health problems, substance abuse which can lead to physical harm to women and children;
- When women join the labor force a lifestyle can be lost;
- If women work they are vulnerable to a number of health problems as a result of overwork and stress.

To mitigate some of these potential problems, program planning must take into account consideration for women. Employment programs should promote the equal treatment of women with that of men. Educational and skills training programs should be made available equally to both men and women. While the resettlement plan sets aside funds to address individual family hardships, a similar program should be made available to women who are not part of the resettlement program but are employed by the project or are married to a construction worker.

Sexually Transmitted Diseases (STDs)

The most problematic and common disease in the area is malaria. Because of weather condition the area experiences severe malaria problem. However, my focus in this study is to give due attention to the sexually transmitted diseases especially HIV/AIDS. In the project plan of this dam construction, the MOME report and Project Appraisal try to give

due attention to the health facilities. They attempt to revise experiences of other similar project as follows.

Experience from other similar construction sites indicates that a large work force dominated by single men will attract women to the area for purposes of commercial sex. This can lead to an increase of sexually transmitted diseases (STDs). Of particular concern is an increase in the incidence of HIV/AIDS. AIDS has already been reported to be increasing in the region, but at relatively low rates. These rates will increase as laborers and truck drivers from urban areas where AIDS prevalence is much higher come into the region as a result of the project. The mitigation plan will take an aggressive approach to control the spread of STDs. The plan will feature public health education programs (including sex education), control of informal sector activities near the project site, and the distribution of condoms. Even with the most vigorous campaign and safeguards, an increase in STDs resulting from the project is inevitable. Systematic blood testing at the camp clinic is absolutely necessary, if the increase in AIDS is to be kept at a minimum. The blood testing must be used for information purposes and not be used to dismiss infected employees (MOME: 1997). From the above discussed gender issues and health problem, I hope that the reader can grasp important insights especially on the plan of the project.

Chapter Four

Knowledge and Awareness Related to HIV/ AIDS Prevention among the Workers of GGHP

The fourth chapter mainly focuses on the knowledge and awareness of the workers of Gilgel Gibe Hydroelectric Project who are currently at work. The main themes under discussions include: awareness and knowledge of the workers about HIV/AIDS, sources of information about HIV/AIDS for the workers, confusion of the workers in HIV/AIDS transmission and prevention, and the workers' risk perception of self sexual behavior. In addition, the issues about vaccination and causes of AIDS are also under discussion in the chapter.

To examine the workers' knowledge about HIV/AIDS, questions focusing on the mechanisms of transmission and prevention of HIV/AIDS were presented to the respondents.

Workers of GGHP project in general have had highly varied background and level of education. Their variety of background is from high skilled foreign and Ethiopian personalities to unskilled laborers from different parts of the country. These unskilled laborers are also labeled as casual workers. Another important remark here is that in this project the number of female laborer is insignificant.

Of course at the preliminary stage of the project or feasibility study, the plan of the project indicated that special favor will be given to women to be employed in the project work. However, the existing reality is contrary

to the stated plan on gender issues. I discussed with the official of the project, why the project could not implement its plan in regard to give opportunities for females to be employed as laborer in the project. And the reason given to me was that the nature of the work demands physically strong laborer and the project prefers to employ male workers than females.

Hence, the chance for female is very much limited. Because of this the chance of sampling female respondent was rare. That is why I couldn't analyze the data on the basis of gender.

4.1 HIV/AIDS Related Knowledge

HIV/AIDS is a new phenomenon, which has not been known, for more than three decades in human history. In this period of time different scholars have been attempting to indicate the unique character and symptoms of this disease. Of course the debate about HIV/AIDS is not yet come to an end. Still scholars are debating on the issue world wide. So it is not late to assess the awareness and knowledge of people about this disease.

Based on this ground, I decided to assess the awareness and knowledge of the Gilgel Gibe Hydroelectric Project workers about HIV/AIDS. Knowledge and awareness of people about HIV/AIDS is pertinent to prevent the spread of HIV/AIDS in a community. The information people have on the mechanisms of HIV transmission and prevention enables them to protect themselves from HIV infection.

To collect reliable data and balanced information on the awareness and knowledge of workers of the project, I employed interview, Focus Group Discussions, and survey of sample populations. The information generated from key informants is also utilized to strengthen the reliability of the data and I have had information from two key informants.

Based on the information collected through the above discussed techniques, the laborers of GGH project have been found that they have had different backgrounds concerning marital status, level of education and other related personal backgrounds. The following table summaries the general background of the workers.

Table 4: The general backgrounds of laborers of GGHP

Characteristic	Number & percentage of respondents in each category	
	percent	number
Age:		
20-29	44.6	152
30-39	49.3	168
40+	6.1	21
Marital Status:		
Single	46	157
Married	41	140
Divorced/widowed	13	44
Level of schooling:		
Illiterate	40.2	137
Primary	39.9	136
Secondary+	19.9	68

Source: sample survey

As presented in table 4 above the majority of the laborers of the project are below age of 40 years with significant age difference of 20 to 39. About 94%of the laborers are between the ages of 20 to 39 years. This

shows that the majority is sexually active as far as age is concerned. Concerning marital status, only 41 % of the laborers reported that they are married. The rest 46 percent reported they are single and 13 percent were divorced/widowed. But even the married people are not currently living with their spouses or friends.

Regarding the educational level, about 40.2 percent of the laborers are illiterate, 39.9 percent attended primary school and 19.9 percent have 12+ level of schooling.

Data collected from the 341 respondents concerning the knowledge of workers of the project about HIV/AIDS is summarized as below by table: 4.1 and 4.2

Table: 4.1 The summary of the knowledge of sample population about HIV/AIDS

	Responses given			
	Yes		No	
	percent	number	percent	number
heard some body was died of AIDS	90	307	10	34
HIV virus causes AIDS	45	153	55	188
HIV/AIDS has vaccination	30	102	70	239
AIDS is curable	25	85	75	256
Total sample=341				

Source: sample survey

Table: 4.2 The summary of differences in knowledge about HIV/AIDS among the workers of GGHP based on level of education

Educational level	Respondent No. in each category	Said HIV Cause AIDS %	Said that AIDS is incurable %	Said AIDS can be curable %	Said AIDS has no vaccination %
Illiterate	137	10.0	40.0	60.0	60.0
Primary	136	65.0	75.0	25.0	75.0
Secondary+	68	90.0	95.0	5.0	90.0
Total sample=341					

Source: Sample survey

The examination and interpretation of Table: 4.1 above shows that a large proportion of workers of the project know the deadly disease AIDS. As presented in the table above, 90% of the survey participants have heard some body was died of AIDS. But this does not mean that each of these people has enough detailed information about the character of AIDS. The majority of workers of the project do not have clear understanding about what exactly causes AIDS. Out of the total participants of the survey, 55% responded that HIV virus causes AIDS.

Concerning the curability and vaccination, most of the respondents have had clear understanding. 75 percent of the respondents responded that HIV/AIDS has no vaccination. Out of the total sample of the survey, 70% said that AIDS is incurable disease once it is caught. But still about 30% of the respondents are highly indifferent about curability of AIDS.

Information obtained through focus group discussion also gave strong ground and justification for the indifferent position these people have. The FGD participants said that AIDS patients can cure of AIDS by *tsebelq* (religious belief). The participant of this group discussion, a man of 42, said that “nothing is beyond God’s/Allah’s control. So how can we say AIDS is incurable if God/Allah allows.” Because of these perceptions some people are still in confusion about curability of AIDS.

Moreover on these confusions of the workers my key informant, a health officer- Bekele pointed out that “We under took an advocacy and VCT campaign in the last October 2006 as part of Ethiopian millennium achievement goal. In this campaign we assessed the knowledge of workers of the project and other community about HIV/AIDS. And we found that every body could speak out that AIDS is deadly disease which has threatened human. But when come to the important detailed information about HIV/AIDS; for example about curability, vaccination, mechanisms of protection; some people have no clear understanding about it. He added that, this is reasonable as far as these people have been forgotten, not the target in our HIV prevention program.

In general, data from focus group discussions, key informants and other interviewees indicated that even though workers of the project know AIDS is deadly, the majority of the workers do not have detailed knowledge about HIV/ AIDS.

4.2 Sources of Information about HIV/AIDS

For the society to obtain accurate and clear information there should be reliable sources of information. These sources should also be accessible and communicative to the audience. One of the strategies of preventing HIV/AIDS is informing the people about it. This can be through different Medias such as radio, television, written materials, formal and informal education, public meeting and the like. Regarding awareness about HIV/AIDS, I observed some confusion among survey participants and Group discussants. The next table summarizes it in detail.

Table: 4.3 Distribution of sources of information about HIV/AIDS among the survey participant workers of GGHP with contrast to their educational level

Educational level	Information Sources			
	Media, book, written materials	Friends & relatives	Religious palaces & leaders	More than one sources
Illiterate	5%	94%	87%	75%
Primary	46%	80%	70%	90%
Secondary+	92%	72%	30%	90%
Average	47.7%	82%	62.3%	85%

Source: sample survey

As we can understand from the table table 4.3 above, the majority of the respondents (85%) get information about AIDS from more than two sources. The dominant of these sources are relatives and friends. 47.7% of the respondents have access to sources such as Media, written materials and books. Another group of the respondents reported that their sources of information about HIV/AIDS are religious leaders, friends, relatives or other informal sources.

The data presented in the table 4.3 above shows that the level of respondents has direct relations with the workers' access to media written materials and book. The table also indicated that as level of education increases the number of people having access to media, books and written materials also increases. i.e. 5%, 46% and 92% for the illiterate, primary and secondary educational levels respectively. From this we can understand that all the workers of GGH project have no equal chance to get detailed information from reliable (update) sources such as Media, books and other written materials about HIV/AIDS.

Those who have good educational background and media access are well informed with less confusion. But parts of the respondents who have no good educational background and media access do not have enough and clear information about HIV/AIDS. In focus group discussion, a man who was 37 said that "I am from rural family and have not educated. So I could not read any written material about AIDS. Mainly I have heard from my friends and during *sagada* (prayer). Religious leaders have thought that AIDS is the revenge of Allah for we are violating the golden rules (Commandments), so it is the good will of Allah to washout this deadly if we obey the rules".

Another participant, age of 25 years, pointed out that “If I know HIV infected person, for sure I will totally cut off my relations with that person; not to use toilet to gather, not to shake his/her hands, not to share utensils, and totally stop any relations”. He continued, “From the information I have, I am in great fear for the fact that I couldn’t properly identify the mechanisms of transmission of HIV from infected person to uninfected one”.

The above discussed ideas and related perceptions of respondents of the study show that there is still unclear and confusing information which of course is determined by the nature of the sources and the access these people have to the reliable information sources about HIV/AIDS.

4.3 Confusion of the Workers in HIV/AIDS Transmission and Prevention

Having the correct information and understanding about HIV/AIDS transmission and prevention is important to control the prevalence rate and to mitigate the threats caused by HIV/AIDS. It is necessary for every body, potentially a victim of HIV/ AIDS, to know the mechanisms of transmission and prevention of HIV/ AIDS to rescue oneself and the society. Confusion in this regard can highly likely to be resulted in severe problems of HIV/AIDS. The reason is that confusion in mechanisms of HIV/AIDS transmission and prevention can create favorable conditions for the prevalence of this deadly among the population. So it is strongly advisable to advocate and provide people information about HIV/AIDS transmission and preventive mechanisms.

The commonly known transmission mechanisms of HIV virus are unsafe sexual contact, blood transfusion, from mother to child, unsafe injections and sharing sharp objects such as blade. Therefore, it is important to have clear understanding of these transmission mechanisms to protect HIV infection. To avoid HIV catching risk, care should be taken against the above listed transmission mechanisms. The sexually transmitted HIV infection can be protected in three ways (options). These are abstinence, faithful (one to one) and condom use.

It is important to understand whether or not the Gilgel Gibe Hydroelectric Project workers have clear understanding regarding HIV/AIDS transmission and prevention mechanisms. To examine the understanding of these workers regarding HIV/ AIDS transmission and prevention mechanisms, data from group discussions, interviews, key informants and sample survey is analyzed and interpreted. Data gathered from survey participants is summarized as follows in table: 4.4.

Table: 4.4 Misconception of GGHP workers about HIV/AIDS transmission

	Responses to the questions			
	Yes		No	
	percent	number	percent	number
healthy looking person can have HIV virus	72%	246	28%	105
share of utensils cause HIV infection	32%	109	68%	232
God or Allah causes HIV/AIDS to punish sin	19%	65	81%	276

Source: sample survey

The information presented in table: 4.4 revealed that there is confusion among workers of the project concerning the mechanisms of transmission of HIV/AIDS. 32 percent of the respondents believe that sharing utensils with the infected person can cause the transmission of HIV virus from the infected to uninfected person. The close examination of table:4.4 also shows that 28 percent of the respondents reported that it is not possible for healthy looking person to carry HIV virus . This is a great confusion among some workers which of course may cause high prevalence of HIV in the area.

Another misconception among some of the project workers is that they think HIV/AIDS is the punishment of sin. In this line, 19 percent of the respondents believe that HIV/AIDS is the punishment from God/ Allah because of sinful nature and practice of people (because of the rule broken by people).

Regarding the misconception of GGHP workers about HIV/AIDS Focus group discussions were also conducted and the obtained result is almost strengthening the ideas presented by table: 4.4 above. It was observed that there were confusions in mechanisms of transmission and prevention of HIV/AIDS among focus group discussion participants. A man of 40 in focus group discussion pointed out that "Man's sin now a days is becoming extreme, no body remember Allah but tries to serve own (self) interest and benefit even refusing to go to mosque that is why *Rabbi*(Allah) punishes people by AIDS".

The idea discussed above mixes the fatalistic approach to HIV/AIDS with that of confusion because of lack of appropriate information about HIV/AIDS. The above quoted person argued that HIV is an instrument of punishment by which rabbi punishes sin. This man does not believe HIV is caused by virus.

Concerning the possibility that healthy looking person can be HIV carrier, both some participants of the focus group discussion and interviewees, except health workers, have a great doubt. They believe that if a person caught HIV (infected by HIV virus) there should be symptoms, signs that can be observable on the person's physical appearance. Otherwise it is unbelievable to say that healthy looking person, who is normal physically active, fat, strong can be a carrier. A young man, who was 24 with strong emotion, said that "For me it is the mechanism of terrorizing people, not to be confident about the status of others' and oneself health and to implant the sprit of suspicion among people not to trust each other."

The discussants also said that we are even not sure about our health status when think over the issue. But actually we do not think that as far as a person is physically strong, active and healthy looking he/she can have HIV virus. Only few of the discussants argued that Sero status can not be judged by looking at physical appearance of a person. The result should be judged on the basis of laboratory result of blood testing for HIV virus.

Because of the misconceptions in HIV transmission some workers have had, they did not believe the healthy looking person could HIV virus.

They said that an immediate symptom should be seen on an infected person's physique. Moreover, they have also wrongly understood the preventive mechanisms of HIV infection. Some of the participants of focus group discussions believe that it is nobody's concern but only God's/ Allah's concern to protect people from HIV virus infection. So, they said, to protect yourself let all of your ways to God/Allah and simply wait for the result. After strong debate some participants agreed that nobody has the capacity to protect himself or herself from any misery including AIDS disasters. It is God/Allah who can protect humans from all the disasters. Therefore, they said "We have to strongly supplicate God/Allah for our protection from AIDS and other attacks".

Among these participants there were also people who strongly believe that they can protect themselves from HIV infection through taking care against the transmission mechanisms discussed above. These groups said that "If we avoid risky sexual behavior, properly use condoms, not sharing sharp objects and avoid blood contact with infected person, we can protect ourselves".

As table 4.4 revealed and discussed above, some respondents of the survey believe that avoiding hand shake of infected people and not to share utensils can be the mechanisms of HIV virus prevention. This shows that these respondents believe that hand shake with HIV infected individuals and sharing utensils can cause HIV infection to the uninfected one (person).

As indicate earlier in table 4.3 and discussion under it, most of the people who were with such confusion in regard to the mechanisms of

HIV/AIDS transmission and prevention are those who have no or low education and poor media access. These individuals during focus group discussions said that they have no different alternatives in media access. They did able to get information about HIV/AIDS mostly form their friends and worshipping places and religious leaders. From this one can understand that there is strong relationship between lack of education and access to media on the one hand, and confusions about the mechanisms of HIV/AIDS transmissions and preventions on the other.

In turn this confusion leads people to develop high risk and vulnerability to HIV/AIDS and also make them to avoid relations with individuals who are already HIV positive. From their genuine discussions these people are tend not to share utensils and avoid shaking hands with those who are already infected. This condition most likely could aggravate discrimination and stigma among the society.

These laborers in their work place are at high risk environment because of the confusion they have and their interaction with sex workers in Deneba and Sekoru towns. Workers of the Gilgel Gibe hydroelectric project are highly communicating with the surrounding population. The site is nearby to two towns-Deneba and Sekoru. The situation in these towns is not good. Beyond the capacity of the towns, commercial sex workers are flooding the area. According to my informants and interviewees, on paydays of the workers migrant commercial workers are flooding the area. My informant health officer, Bekele, said that, bar ladies are flooding the area during workers payment. He continued, always during night time workers of the project are damped here in the town and chewing chat and consuming alcohol. These all ignite the

sexual activities in the town so that the workers are in high risk to have sexual affairs with bar ladies. During my field time I could observe the same thing in Deneba and Sekoru towns. I believe that these all can fuel the prevalence of HIV/AIDS among the workers.

4.4 The Workers' Risk perception of Self Sexual Behavior

Risk sexual behavior for being infected by HIV/AIDS can be explained or associated with having many sexual partners, unsafe sexual practice, and non use of condoms during sexual intercourse with non-spouse partners and having sexual contact with prostitutes. In this regard I presented questions to respondents and discussants to assess the workers' perception of self risk sexual behavior to be infected by HIV virus.

To understand whether or otherwise the workers are aware of a chance of being infected by HIV because of their sexual behavior, two themes were thoroughly discussed. These themes include whether the workers consider AIDS as main health problems in their community and workers' risk perception of sexual behavior. The response of the sample population to these and other questions are clearly summarized by table: 4.5 below.

Table: 4.5 Workers' Risk perception of Self Sexual Behavior

	Responses to the questions			
	Yes		No	
	percent	Number	percent	Number
AIDS is the main health problem	46%	157	54%	184
At risk of HIV infection	53%	181	47%	160
Change sexual behavior to reduce the risk	49%	167	51%	174
Many sexual partners exposes to risk of being infected by HIV virus	58%	198	42%	143

Source: sample survey

Table 4.5 above shows that 46 percent of the total samples said that they think AIDS is one of the major health problems in their community. But more than half of the respondents (54 percent) were still did not believe that AIDS is one of the major health problems in their community. On this line information from focus group discussions and in-depth interviews revealed that AIDS on its independent appearance can not be taken as serious health problem since it is observable through different opportunistic diseases rather than by its own. The study also shows that 42 percent of the respondents do not heed advice to limit sexual partners in order to reduce risk of HIV infection, and 51 percent said that they did not want to change their sexual behavior to reduce the risk.

My focus group discussion participants strongly pointed out that the main health problem in the area has been malaria. People in the area are

highly suffering from malaria more than any other diseases. Even the official health report of the Health Center of Sekoru wereda did not put AIDS among the top 10 diseases in the area.

The justification given to me by health officer of the wereda why they did not put HIV/AIDS among the top ten diseases, while the prevalence rate is about 9 percent was that AIDS can not be observable alone by itself; rather it appears together with other opportunistic diseases. But still this health official informed me that he strongly believe that AIDS is one of the main health problems, as that of malaria, and deadly in the area.

Out of the total sample respondent in the survey, 53 percent accepted that they were at risk of being infected by HIV virus. They believe that their sexual behavior can lead them to contract HIV/AIDS. This shows that a significant number of the workers of the project are aware of their being at risk of contracting HIV/AIDS. Data from focus group discussions affirms the same reality that the majority of the workers are practicing risk full sexual act, having many partners, have visited prostitutes especially during salary pay time. A man of 40, in focus group discussion said “People are hesitating the existence of HIV at night after they became hot by taking beer; even they deny the existence of HIV then”.

A participant of group discussion, a man of age 37, said “Some workers of the project seem to be careless on the issue of HIV. The reason is I think, he said, there is no advocacy, education and a piece of information has been given to the workers by the project or other body”.

This reveals that these workers have low motivation and advocacy on issue of HIV/AIDS. The tiresomeness nature of the work itself and being separated of their familiar environment, relatives and society make them careless about the norm and social control. So that after they consume alcohol they don't bother about things. This can fuel the risk of being exposed to HIV infection.

As my informants argued, these people have not given due attention on how to avoid the risks. Rather they overlook the problem even though they are aware of preventive mechanisms. This finding is consistent with research findings done on the issue elsewhere. For instance, Moffman and Futterman (1996) in the study "Youth and HIV/AIDS" indicated that although people have been well informed about HIV/AIDS, they believe that they are invulnerable to HIV infection. This leads people to ignore the risk of infection because of their sexual behavior. The ignorance of the workers is associated with level of schooling, access to information and residential arrangement.

From the above discussion we can conclude that in spite of high knowledge about HIV/AIDS and admitting of self risk of contracting HIV/AIDS people are reluctant to avoid such risky conditions.

CHAPTER FIVE

Factors Aggravating Risky Behavior and Vulnerability of Gilgel Gibe Hydroelectric Project Workers (GGHP)

This chapter focuses on factors which are aggravating the risk behavior and vulnerability of the workers to be infected by HIV virus. In the surrounding areas and among the workers themselves there are activities or practices and factors which can drive the workers in to risk behavior and aggravate their vulnerability to HIV/ AIDS. Here the Themes under discussion are: the situation of commercial sex workers in the area and the interaction of GGHP workers with the commercial sex workers: the habit of alcohol and other stimulating material consumption of the workers; the current living arrangement of these workers; the issue of non-condom use in casual sex and multi partner are all under discussion in this chapter. In addition to these topics, themes such as economic deprivation in relation to developing risk behavior and misconception about HIV/ AIDS have also been discussed. All These themes or topics under discussion in this chapter are considered to be factors aggravating the risk behavior and vulnerability of the workers either directly or indirectly.

To discuss the above presented themes I used focus group discussion (FGD), interview, key informant, observation and sample survey techniques in the study. So the information presented in this chapter is generated through these different techniques and jointly explain the

themes under discussion. The above introduced factors are interrelated by their nature in aggravation of risk behavior and vulnerability.

5.1 Commercial Sex Workers

The primary mechanism of HIV transmission is through sexual intercourse i.e. unsafe sexual intercourse. The vulnerability of a person to be infected by STDs, especially HIV is high when she/he is practicing or having sexual contact with higher risk sex groups. In this context higher risk sex includes having sex with a non-marital, non-cohabiting partner.

Different literatures (Thang, Huong & Blanc: 2002; Ondimu 2005) indicated that sex with commercial sex workers or prostitutes is said to be risky because the prostitutes have multiple partners and high possibilities of practicing un-safe sex (non-condoms use). This put them of highly susceptible position to be infected by HIV virus. In addition to this there are other additional factors, which make the prostitutes vulnerable to HIV infection in their sexual practices. The low status of the prostitutes in the community, low-income level, low educational level, and poor level of knowledge about HIV infection lead them to be in higher risk.

The prostitutes have also had low self esteem, which is psychological, and this makes them hopeless in their life and become careless in their sexual practice with their clients. This indicates that people who visited prostitutes and having sexual intercourse especially un-safe sex with them is at higher risk. Furthermore, the spouses or partners of the

clients of these prostitutes are also vulnerable to the threat of HIV/AIDS. Since all persons in this sexual network are highly susceptible to HIV infection the prevalence rate of HIV is more likely high. This indicates that commercial sex aggravates the spread of HIV/ AIDS.

The data collected through interviews, focus group discussions, key informants and sample survey, all indicate that commercial sex workers are mushrooming in the study area. Especially during the workers' pay time, in addition to the regular prostitutes, the migratory commercial sex workers are deluging the area, Sekuru and Deneb towns. Participants of focus group discussions confirmed that the towns are invaded with prostitutes of new face for about a week during pay time of GGHP works. So the towns and the surroundings become full of ladies to solicit the workers (GGHP workers) for commercial sex. The workers are also ignited and frequently visit the ladies in the night to have sexual contact.

In my interview with health officer "Bekele", I came across the same idea to the FGD discussants. He said, "It is surprising these small towns carry huge amount of ladies doing commercial sex. In the period of paydays for the project workers, in addition to regular commercial sex workers, many ladies are dumped to the towns and every corner at night time is occupied by the ladies to transact sexual services for pay. So, he added, it is common for the residents that commercial sex work is highly rampant in the area."

From my interview with a lady of 27, who is commercial sex worker, I discovered that these ladies are doing their operation in group. So they communicate each other and call up each other to the area during paydays of the workers of GGHP. After some days when the capacity of

the clients becomes weak the migratory ladies leave the area to search opportunities elsewhere. In other days, days other than the week of pay time of the project workers, the regular ladies continue to operate and the migratory ones leave the area.

From the above discussion it is clear that there is high prevalence of commercial sex, even exaggeratedly to the extent of above the capacity of the towns. This created the inviting environment for the workers to visit these ladies and activate sex contacts of the workers with the ladies doing commercial sex.

The project is dominated by male workers. The number of female workers in the project is insignificant. These male workers, especially casual laborers, most of them are single men. Even the married men themselves are currently living alone, separate from their families and disconnected from family network and control. In addition to these the tiresome nature of the work and the residential environment also exposes the project workers to town life. These all together force and trigger the workers to be exposed to alcohol consumption, chat chewing and contact the commercial sex workers frequently. The workers feel ease and relaxed in doing so.

According to the information gathered through interviews and FGD, discussing about HIV/AIDS among the workers is not common. Even nobody gives attention to health care, especially to HIV, of the project workers. In this regard Sekoru Wereda VCT officer, Sister Senait said "These workers are very far from our reach, and out of our plan. Other communities are already being targeted to be served through advocacy

and education in HIV prevention. But the project workers are not in the line of our target to give these services. We only serve them when they occasionally come to us". This indicates that the workers of GGHP are not given attention in regard to HIV protection and these all lead them to be far from worrying and discussing about HIV/AIDS in their daily activities. The following table presents the sexual contacts the workers of GGHP have with commercial sex workers.

Table 5.1 Alcohol consumption and sexual practice with commercial sex workers

Issues under discussion	Respondents (N=341)	
	Percentage	Number
Current living arrangement:		
With family	26.4	90
Alone	67.4	230
Do not answer	6.2	21
Have sexual contact with commercial sex workers:		
Yes	61.6	210
No	38.4	131
Number of visits in the last 6 months:		
less than 5 times	27.9	95
5 times and above	33.7	115
Never visit	38.4	131
Consuming alcohol:		
Yes	70.4	240
No	29.6	101
Frequency of consumption (per week):		
Daily	0	0
More than 3 times	27.9	95
Less than 3 times	42.5	145
Never consume	29.6	101

Source: sample survey

Table 5.1 shows that 61.6 percent of the respondents have visited commercial sex workers and have sexual affairs with prostitutes. They also commented that prostitution is rampant in the area. Out of 210 respondents who indicated that they have had sex with prostitutes, 115 respondents have relatively high frequency of visiting prostitutes. Thus, table 5.1 above shows that 33.7 percent of the respondents have visited the prostitutes 5 times and above in the past six months. This indicates that there is strong interactions and relations between prostitutes and these workers. Out of the total sample (341), 230 (67.4 percent) reported that they have been currently living alone. These people are highly susceptible to be attracted by prostitutes and develop sexual relationship with them. Therefore, it is convincing that the current living arrangement of the workers has great contribution for the sexual relationship they developed with prostitutes.

In the towns of Sekoru and Deneba other than those in bars, hotels and dancing clubs, many women are operating sex work in the rooms they have rented. And their livelihood is depending on the income they earn from petty trade and pay for sexual services they give to their clients. These women are soliciting male workers of the project in different places and take to their home to give sexual services for money. These women are also selling alcohol drinks, tea, food etc to their clients but mainly they are giving sexual services to earn money to cover their living costs. Therefore, all corners of the towns are full of sex workers.

In addition to Sekoru and Deneba towns there are small villages, where workers of the projects have been living. These villages are attracting petty trade women and in the areas in addition to doing their petty

trades (selling tea, bread, *injera* and local drinks) these women secretly soliciting workers to have sexual contact for pay. So, it is not only in the towns but also in the villages where the workers developed sexual relations with the prostitutes. The relation is relatively in secrete manner. Participants of FGD indicated that these villages are also serving as a secret place of meeting for sexual affairs with petty trade women.

Participants of FGD argued that almost everywhere in the towns there are ladies waiting for someone who wants sexual services for pay and especially during night time they are much busy in soliciting men to have sex with them for pay. Most of the FGD participants indicated that it is the females' poor economic position or low income which leads them to be sex workers.

Affirming this idea, Bekele, the health officer in my interview said, "Women are economically weak, have no income to lead their life. Mostly they are dependent on men directly or indirectly. Those in the family are directly depending on the husband's or father's economy. And others in the town are giving sexual service to the male in order to earn money for their livelihood. So because women are economically deprived, disadvantaged they have been engaged in risky sexual activities, even these women are careless of HIV infection, to be worried about HIV infection does not give sense to them. What make sense for them is getting money for their daily cost."

A woman of 30, who has engaged in this sex work, said, "It is my life to do so. My survival is based on the money I get from my clients. The

income I could get from sale of tea and local alcohol I do is not as such attractive. What I could get from the sale is insignificant, but it helps me to attract my clients and provide them tea and alcohol, and negotiate for business.” Here what she said business is the pay she can earn from her clients for sexual service she gives.

From the above discussion, one can understand that the low income and the economically disadvantaged nature of women forced them to be involved in commercial sex work.

5.2 Alcohol Consumption

Consuming alcohol in the study area is so common that during night time people are busy visiting bars, hotels, dance clubs and other places where alcohol drinks such as local drinks, beer and other drinks can be available. During my field work time in Sekoru and Denba towns I observed that people were highly consuming chat. The towns are where most of the project workers reside and have high interaction with other residents. It is normal for these people sitting for chewing chat, especially in the after noon. Both male and female are intensively consuming chat. I was surprised to see that in Sekoru town not only persons but also the goats are addicted to chat. In the town it is common that people are collected on verandas and chewing chat. It is at open space. On the nearest distance goats are assembled, laid down and waiting for *garaba* which is thrown to them by the chat chewers. So I understand that the main diet for these goats is the leftover chat (*garaba*) which of course these animals are addicted to.

The issue is that, chewing chat by itself or alone is not my focus, but what happens after chewing chat is more important. To the night time these people make busy all places where alcoholic drinks can be available. These towns are the towns among those in which alcohol consumption is high.

From 6:00pm to 8:00pm workers of the project are transported to the towns by their services (transportation service is free, given by the project) and the towns get busy. At night it is highly populated and the towns become more active than day time.

In this line participants of FGD agreed that most of the workers are alcohol consumers, especially during paydays. The working situation and the surrounding environment invite them to do so. Most of the workers are currently living alone, cut off from their family and social net work. They are isolated from the familiar environment and social net work they used to live in, and develop a sense of stranger. They also carryout tiresome job and no attention is given to them by the project more than paying their wage. Because of these factors and the accessibility of alcoholic drinks in the area, the workers become alcohol consumers.

One of the community leaders in Sekoru town, a man of 48, said "These people are highly tied to bars and hotels. It is their daily practices to have alcoholic drink. Beer has been widely flowed in the towns especially during paydays of the workers."

The above discussion indicates that chewing chat and alcohol consumption is high in these towns and most of the workers of the

project are alcohol consumers. They are frequently visiting bars and hotels and other places to have alcoholic drink especially during pay times.

The current living arrangement of most of the workers, the strange environment they faced because of their cut off from their community and the hardship they face in their job also make them alcohol consumers.

The close examination of table 5.1 above reveals that the majority of the workers of the project are consuming alcohol. Out of the total (431) sample surveyed respondents 240 (70.4 percent) reported that they have consumed alcohol and consider alcohol consumption is normal. Among these workers a significant number of them are frequently visiting bars and hotels in the week days to have alcoholic drinks. Out of those who consume alcohol 27.9 of them have had alcoholic drinks more than three times a week.

Alcohol consumption highly influences the prevalence of casual sex and even may lead people to have un-safe sex. People who highly consume alcohol are more likely to engage in behaviors that lead them at risk for being infected of HIV. More likely it creates a tendency toward high risk sexual behaviors like multiple sex partners, un-safe sexual intercourse, sex with prostitutes and casual sex. The reason is that alcohol can act directly on the brain to reduce inhibitions and reduce risk perception. This is because alcohol induced intoxication in to the consumer and put the person in different state of mind for time being.

Other studies' findings (MacDonald 2000, Cooper 2002) on the issue confirm with the finding of this study. People who are intoxicated with alcohol are more likely to practice risk sexual activities such as having multiple sexual partners, reluctant to use condom and have un-protected sex than those who don't drink alcohol.

5.3 Multiple Partner & Non-Use of Condom among Workers of the Project

As presented earlier, higher risk sex is defined as having sex with non-marital, non-cohabiting partner, having multiple sexual partners. It also includes having sexual intercourse with prostitutes and non-condom use in doing so.

Since the primary mechanism by which HIV transmits is sexual intercourse, having multiple sexual partner place a person at risk position and aggravate vulnerability of the person to be infected by HIV. This indicates that limiting or reducing the number of sexual partners can help to minimize the risk of being infected by HIV. Therefore, it is important to know the extent of multiple sexual partners the workers of this project have and what exposes them to such sexual practices. Next to this the attitude this people have towards condom and non-condom uses in sexual contact with commercial sex workers and/or casual sex are the centre of discussion under this topic.

As the information obtained from sample survey indicated the significant number of the participants responded that they have had sexual contacts with more than two partners in the past six months. The close

examination of table 5.2 below revealed that out of the total respondents 61.6 percent responded that they have had sexual affairs with more than one sexual partner in the past six months. Having sex with multiple partners is common among the workers of the project. As presented in the last chapter, having sex with prostitutes is common among the workers and they have taken it as normal practice.

The male dominated (in number) workers of the project, most of them are living alone. Some of them are single men and even the married men themselves have been living alone, separated from their family. This living arrangement makes them more susceptible to have many sexual partners, especially having sex with prostitutes, and extramarital sexual contacts become rampant.

Most of the workers of GGH project are migrated to the area in search of employment from different parts of the country. They are return back to their home lands and visiting their families and relatives twice a year: during Christmas and Easter holidays. The data summarized in table 5.2 below revealed that the majority of the workers of the project have returned back to their home land and visited relatives, spouse and friends. Out of the total sample, 85.2 percent have visited their home land in the holidays. In most cases, these workers most likely have visited their spouses or girlfriends in their local areas and have sexual contact with them. This condition creates wide network of HIV prevalence or spread among the people who are potentially in the network. So it is clear that having multiple sexual partners fuel the spread of HIV prevalence among communities.

Table 5.2 Multiple partner and condom use when having sex with high risk group

Issues under discussion	Respondents (N=341)	
	Percentage	Number
Use of condom:		
Never use	15.4	53
Sometimes	30.0	102
Always use	46.4	158
Don't remember	8.2	28
Attitude when suggested to use condom:		
Agree and comply	64.2	219
Do not feel concerned	15.2	52
Do not agree	20.6	70
sexual contacts with 2+ partners in the past six months:		
Yes	61.6	210
No	38.4	131
Return to home land & revisiting relatives and friends during holidays:		
Yes	85.2	291
No	14.8	50

Source: Sample survey

Condom use is an important mechanism of combating the spread of HIV/AIDS. It is advisable to use condoms in every sexual contact, and it is most important to use condom in sexual contacts with those who are at higher risk. In this context higher risk sex includes having sex with non-marital partner, prostitutes and casual sex.

In this regard World Bank (1997) illustrated that it is more important to make target of condoms use those who are most likely to transmit infection, as well as those who are at higher risk sex; in other words

where consistent condom use prevents transmission from those likely to have multiple partners.

Among the workers of GGH project the issue of condom use is found to be controversial. Information gathered through FGDs and sample survey revealed that there is non-condom use among the workers of the project in their sexual activities, even during sexual contact with higher risk group. These workers have no problem with the availability or supply of condoms. The only service the project gives to its workers regarding HIV prevention is the supply of condoms in secret places. Condoms have been put in small containers where it is accessible to workers and they can use it secretly.

Information from FGDS and interview affirm this idea. My informant, health officer, Bekele said that condom is available for workers in their work place placed in containers. Information is also given to them to use it from containers and they can use it whenever it is needed to be.

But the reason for non-use of condoms by the workers of the project is not the problem of availability or supply. Data generated from FGDS and interviews indicated that the reasons why these workers are reluctant to use condoms in their sexual activities. These reasons are discussed briefly as follows.

1. Some of the workers of GGH project have no clear understanding about the cause of AIDS. They think that AIDS is the punishment for violating the command of God/Allah. It can only be caused by the order of God/Allah.

So it is non-sense for these people to use condom while having sexual contact.

2. Another reason discussed by the participants was that some of the workers did not consider HIV/AIDS as health problem in their community. So that they did not worry much about the threats of HIV infection.
3. Even those who believe that HIV/AIDS as a great problem, still they have negative attitude towards condom use and they are reluctant to use it. The reason they forwarded is that condom reduce sensation during intercourse and hinders sexual pleasure.

Because of the above discussed different reasons some of the laborers of GGH project are not willing to use condoms in their sexual activities. From this one can understand that there is no strong advocacy and education has been given to these workers in their work place. Even though projects and companies are not exempted from the threats of HIV/AIDS, GGH project did not give attention to HIV prevention. To mitigate the vulnerability of the workers to HIV infection intervention is necessary especially in the regard of advocating and informing the workers about HIV/AIDS transmission and prevention mechanisms.

Information from the sample survey on the attitude and the practice of condom use among the workers is summarized in table 5.2 above. The table shows that only 46.4 percent of those surveyed constantly use condoms while visiting sex workers or in casual sex contacts, while 15.4

percent reported that they never use condoms when having sex with the prostitutes, while 30 percent reported that they have used condom sometimes and 8.2 percent responded that they did not remember either or not use condoms constantly. The never-use-condom respondents were rationalizing it taking the above discussed reason of non-condom use as basis of argument. Out of the total respondents 20.6 percent have negative attitude towards condom use, while 15.2 percent were reported they do not feel concerned about condom use.

Chapter Six

Conclusion

The study indicates the majority of workers of the GGH project have had the knowledge concerning the transmission of HIV/AIDS. But, this does not mean that each worker of the project has clear understanding of transmissions and prevention mechanisms of HIV/AIDS. Some of these workers have had confusions about transmissions and prevention mechanisms of HIV/AIDS. Level of education of the workers and the media access they have affect their level of knowledge about the transmissions and prevention mechanisms of HIV/AIDS. As presented in chapter four, only 57% of the respondents have had access to sources such as Media, written materials and books. Those who have good schooling background and media access have had less confusion.

A significant proportion of the workers of the project do not perceive AIDS as a problem in their community. The survey result indicates that 54 percent of participants of the study of the total sampled population reported they do not think AIDS is one of the major health problems in their community. Even the official health report of the Health Center of Sekoru wereda did not put AIDS among the top 10 diseases in the area. Furthermore, only 53 percent of the total participants admitted that they are at risk of HIV infection; and 28 percent of the respondents believe that healthy looking persons can carry of HIV/AIDS. This suggests the existence of some misconceptions about the nature of risk in acquiring

the infection, which implies that such people with low perceived self-risk of infection are less likely to avoid risk sexual behavior.

Most of the workers of the project, those who are with confusion about the transmission and prevention mechanisms of HIV/AIDS consider social relations such as sharing utensils and shaking hands of the infected person can cause HIV infection. Some of these workers also believe AIDS is the punishment of sin by God/Allah.

As discussed earlier in chapter five, the study reveals that there are factors which are aggravating the risk behavior and vulnerability of the workers to be infected by HIV virus in the study area have been found rampant. The factors include: commercial sex, alcohol consumption, non-condom use in sexual contact with high risk group, and having multiple sexual partners.

The discussions presented in chapter five have also revealed that commercial sex has been mushrooming in the study area. Especially on paydays of the workers, in addition to the regular prostitutes migratory prostitutes have been invading the area. It was also discussed that workers of the project have high interactions with these commercial sex workers. As presented earlier 61.6 percent of the respondents have visited commercial sex workers and have sexual affairs with prostitutes.

The study also indicated that most of the workers of the project are alcohol consumers. Out of the total sample surveyed respondents 70.4 percent reported that they have consumed alcohol and out of those who

have consumed alcohol 27.9 of them have had alcoholic drinks more than three times a week.

The other focus of the study was the issue of use of condom among workers of the project and it has been discovered that there is low condom use among workers of the project. The large proportion of workers of the project was reluctant in use of condom during sexual contacts with high risk group. Only 46.4 percent of those surveyed constantly use condoms during sexual contacts with high risk group. The points which have been given as reasons of non-condom use among the workers of the project are: the confusion some workers have about the cause of AIDS, the negative attitude some workers have for condom use and some workers believe that condoms inhibit sexual enjoyment, are the major ones.

Concerning multiple partners, the majority (61.6 percent) of the participants have had sexual contacts with more than two partners in the past six months. Moreover, the living arrangement makes workers of the project more susceptible to have many sexual partners. The male dominated (in number) workers of the project, most of them are currently living alone. Some of them are single men and even the married people themselves have been living alone.

In addition to the workers current living arrangements, the hardship of the working environment, the habit of alcohol consumption they developed and other related conditions make the workers to develop risk behavior. This further exposes the workers to the risk of contracting HIV/AIDS.

Data from group discussion, interviews and the survey presented earlier shown that workers of GGP have been re-contacting their families, and friends in their home land in holydays. Survey data discussed in the study revealed that 85.2 percent of the workers have returned back to their home land and visited relatives, spouse and friends in the holidays. In most cases, these workers most likely have had sexual contact with their spouses or girlfriends during the visit.

In general, the above discussed findings, therefore, affirm that GGH project is one of the huge projects which mobilize workers from different parts of the country. These workers come to the area with varied backgrounds. Most of them are currently living separated from their families, relatives and social network which they had been familiar with. The working environment of the project in which these laborers have been working is tiresome and lackluster. The project attracts commercial sex workers to the area and it is rapidly increasing. The area has been inundated by the prostitutes. Because of the working environment and current living arrangement, the workers of the project develop the habit of alcohol consumption, sex with prostitutes and having multiple partners. There is low condom use among the workers of the project in sex with high risk group. All these factors aggravate the risk behavior and vulnerability of the workers to be infected by HIV virus.

The GGH project do not give due attention for health facility of the workers. Especially the attention given to HIV/AIDS prevention by the project is insignificant. The only service the project provides to its workers is locating condom, at secret places in the work place, for use

when needed to be. There is no advocacy work, no motivation and no education given to the workers about HIV/AIDS transmission and preventive mechanisms. As a result most of the workers are not in a position to utilize preventive mechanisms since they have no appropriate information about the issue. These all together worsen the situation and make the workers develop high risk behavior and become highly vulnerable to HIV infection. Based on this fact, it is clear that unless great care is taken, development projects can fuel the spread of HIV/AIDS. Gilgel Gibe Hydroelectric project contributes to the acceleration of HIV/AIDS prevalence among the workers and society at large.

The currently growing development projects in Ethiopia need especial attention in regard of HIV prevention. Thus, all individuals, governmental and non-governmental organizations should give due attention to tackle the problem through designing appropriate action of intervention.

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Appendix

Addis Ababa University
School of Graduate studies
Department of Sociology and Social Anthropology

Research Questionnaire

To Be Filled By the Researcher or Enumerator

The information collected via this QUESTIONNAIRE would be used only for academic purpose. This information is needed to conduct MA Thesis in Social Anthropology as partial fulfillment for Social Anthropology MA program. All the genuine information you provide will be kept confidentially. So please you are requested to give the required information without any reservation. Thank you in advance.

I. Background Information

1. Age: _____ 2. Sex: _____
3. Marital status:
1. Single 2. Married 3. Divorced/widowed
4. Level of schooling:
1. Illiterate 2. Primary 3. 12 and above
5. Religion:
1. Muslim 2. Orthodox 3. Protestant 4. Others
6. Where did you come from?
From region _____, zone _____, wereda _____
7. How long have you lived in this place? For _____ year, for _____ months.
8. Current living arrangement:
2. Together with family 2. Alone
9. If your answer for Q.8 is "alone" have you been revisiting your spouse or girl/boy friend?
1. Yes 2. No

10. If your answer for Q.9 is "Yes" when do you visit and how many times in a year?

II. Sexual Behavior and Awareness of the Workers on HIV/AIDS

11. Do you drink alcohol?

1. Yes 2. No

12. If yes, how many times (days) per month? _____ day(s)

13. Have you ever visited prostitutes since your presence here?

1. Yes 2. No

14. If yes, how many times/days (frequency) per month? _____ day(s)

15. Do you use condom during sexual intercourse?

1. Yes 2. No

16. If your answer for question 15 is "yes" how frequent do you use condom during intercourse?

1. Always 2. Some times 3. Do not remember

17. What is your attitude if your partner asks you to use condom during intercourse?

1. Agree and comply 2. Do not feel concerned 3. Do not agree

18. Do you have more than one partner?

1. Yes 2. No

19. Do you know about HIV/AIDS?

1. Yes 2. No

20. How does it transmit? _____

21. If your answer for question no. 6 is "yes" from where did you get the information?

1. From friends & relatives 2. Mass media 3. School 4. Religious leaders

Others specify _____

22. Do you think that HIV/AIDS is the major problem of health in your area?

1. Yes 2. No

23. Which mechanism is better to protect HIV/AIDS? Mention it.

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University and that all the sources of materials used for the thesis have been duly acknowledged.

Name Teshome Kebede

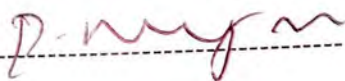
Signature 

Date August 2007

CONFIRMATION

This has been submitted as final work with my approval as University advisor.

Name D. MURULHAN

Signature 

Date 06.07.07